

Date: 18 September 2025
To: Andrew Gill, Director of Development, O'Brien Brothers
From: Corey Mack, PE, PTOE, Consultant Transportation Engineer
Subject: Triangle Farm Shelburne – Transportation Impact Study

WCG has reviewed the proposed residential planned unit development bounded by Spear Street, Irish Hill Road, and Thomas Road in Shelburne, Vermont. WCG has prepared the following assessment of the likely transportation impacts in accordance with the Town of Shelburne Zoning Bylaws effective 2 May 2018 with consideration of the Draft Shelburne Unified Land Use Regulations dated 4 August 2025, Transportation Impact Study Guidelines from the Vermont Agency of Transportation (VTrans), Multimodal Transportation Impact Analysis for Site Development (MTIASD) - an ITE Recommended Practice published 31 January 2023, and standard engineering practices outlined by the Institute of Transportation Engineers (ITE) and other sources.

This TIS includes the following sections:

1. [Summary of Findings and Recommendations](#), compiling the project details and analytical conclusions of the study.
2. [Proposed Project Parameters](#), including the project description and trip generation estimates.
3. [Existing Roadway Context](#), describing the existing road network, crash history, and sight distances.
4. [Traffic Projections](#), including traffic adjustments, trip distribution, other development volumes, and documentation of estimated operating conditions.
5. [Capacity Analyses](#), including definition of the capacity and performance measures and a summary of the capacity analysis results.
6. [Bicycle, Pedestrian, and Transit Access](#) to the site.
7. [Potential Mitigation Considerations](#), including the estimated local and state transportation impact fees.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

- The current development program for the Triangle Farm Planned Unit Development (PUD) project proposes to construct 275-375 residential dwelling units on the parcel of land bounded by Irish Hill Road, Spear Street, and Thomas Road in Shelburne, Vermont. The most recent plan illustrates 332 units in a mix of single family detached, single family attached and multifamily residential units. The total number of each type of unit is subject to change as the site plan evolves.

- This TIS proportionally scaled the estimated trips generated by current layout of 332 units to represent a maximum trip generation of 375 dwelling units. All subsequent analysis is based on the estimated trip generation of 375 dwelling units. As the project progresses and the exact number and type of units are defined, this analysis will be updated.
- The overall proposed project is expected to generate 218 new vehicle trips in the AM peak hour and 282 new vehicle trips in the PM peak hour.
- VTrans guidelines specify that a traffic study should be considered if the proposed development will generate 75 or more new peak hour trips. This project exceeds that threshold.
- The Town of Shelburne Zoning Bylaws requires analysis of all intersections within ½ mile of the project site.
- There were no state designated high crash locations adjacent to the project area. There was a minor cluster of crashes at the Spear Street & Irish Hill Road intersection, with features recommended to improve visibility at this location. The proposed project is not likely to create or contribute to unsafe conditions.
- WCG developed a traffic capacity and congestion model for the project study area, including 12 intersections plus the new site driveways. The study area includes the signalized intersections on US-7 of Falls Road / Harbor Road and Bostwick Road / Marsett Road as requested by the Town.
- Intersection capacity analyses generally indicate the current levels of service are maintained with a few exceptions. Notable analysis results include:
 - The all-way stop controlled intersections generally operate acceptably with overall LOS C or better, with the one exception of Spear Street & Irish Hill Road. At Spear Street & Irish Hill Road, the overall average control delay exceeds the LOS D threshold by 2 seconds.
 - The two-way stop controlled intersections generally operate acceptably with overall LOS C or better, with the one exception of Spear Street & Barstow Road in the 2023 PM peak hour. At Spear Street & Barstow Road the minor leg delay increases by 16 seconds, from LOS D into LOS E. Under all-way stop control, the overall intersection would operate at LOS C.
 - The signalized US-7 & Falls Road / Harbor Road intersection currently operates at LOS E in both AM and PM peak hours. The overall LOS is not expected to change as a result of the project. Overall average control delay through the intersection is expected to increase by 2 seconds.
 - The signalized Spear Street & Allen Road intersection operates at LOS D in both the no-build and build scenarios in the PM peak hour. The overall LOS is not expected to change as a result of the project. The overall delay is expected to increase by 1 second in the build condition.

- Of the four intersections that do not explicitly meet the VTrans LOS policy, three (Spear Street & Irish Hill Road, US-7 & Harbor Road / Falls Road, and Spear Street & Allen Road) may be considered acceptable based on case-by-case consideration.
- The Spear Street & Barstow Road intersection likely meets two warrants for conversion to all-way stop control.
- WCG conducted a left turn lane and right turn lane volume warrant analysis at Irish Hill Road & Thompson Road / Proposed Site Driveway intersection in the proposed build condition. Turn lanes are not warranted or recommended. The remaining site driveways experience lower traffic volumes, and the results of the turn lane warrant evaluation are expected to be similar.
- The project will likely be assessed an Act 145 transportation impact fee to contribute to the VT-116 & VT-2A intersection roundabout project. We estimate the fee at \$3,947.
- The following roadway mitigation is recommended:
 - The Spear Street & Irish Hill Road intersection should be modified to increase visibility of the “stop” and “stop ahead” signs at the existing all-way stop control.
 - Conversion to all-way stop control may be considered for the Spear Street & Barstow Road intersection with associated temporary and permanent advanced warning features.
 - The proposed project should connect the proposed sidewalk network to the existing sidewalk network, including appropriate enhanced crosswalk features at the Irish Hill Road & Thompson Road intersection
 - Conduct post-construction monitoring one year and five years after occupancy to confirm the operational performance of the transportation system.
- The proposed project should maintain sight lines at the proposed site driveways, including tree trimming and regular mowing. As the site plans develop, the site design team should avoid low growing shrubs, plantings, signs, or other features that may impact sight lines to people walking, biking, and driving at the project drive intersections with the public highways and within the project site itself.

Based on the analysis conducted for this report, the proposed project is not expected to impact the condition or capacity of the affected roads and associated infrastructure. The proposed project will not cause or exacerbate any unreasonable congestion or unsafe conditions on the existing local roadway network and will not unnecessarily or unreasonably endanger the public's investment in any local roads, highways, or related infrastructure.

PROJECT PARAMETERS

The Triangle Farm residential development project is a planned unit development (PUD) of more than 100 acres in Shelburne. The planned project site, north of Thomas Road, south of Irish Hill Road, and east of Spear Street consists of an evolving mix of residential housing types. The current development program includes:

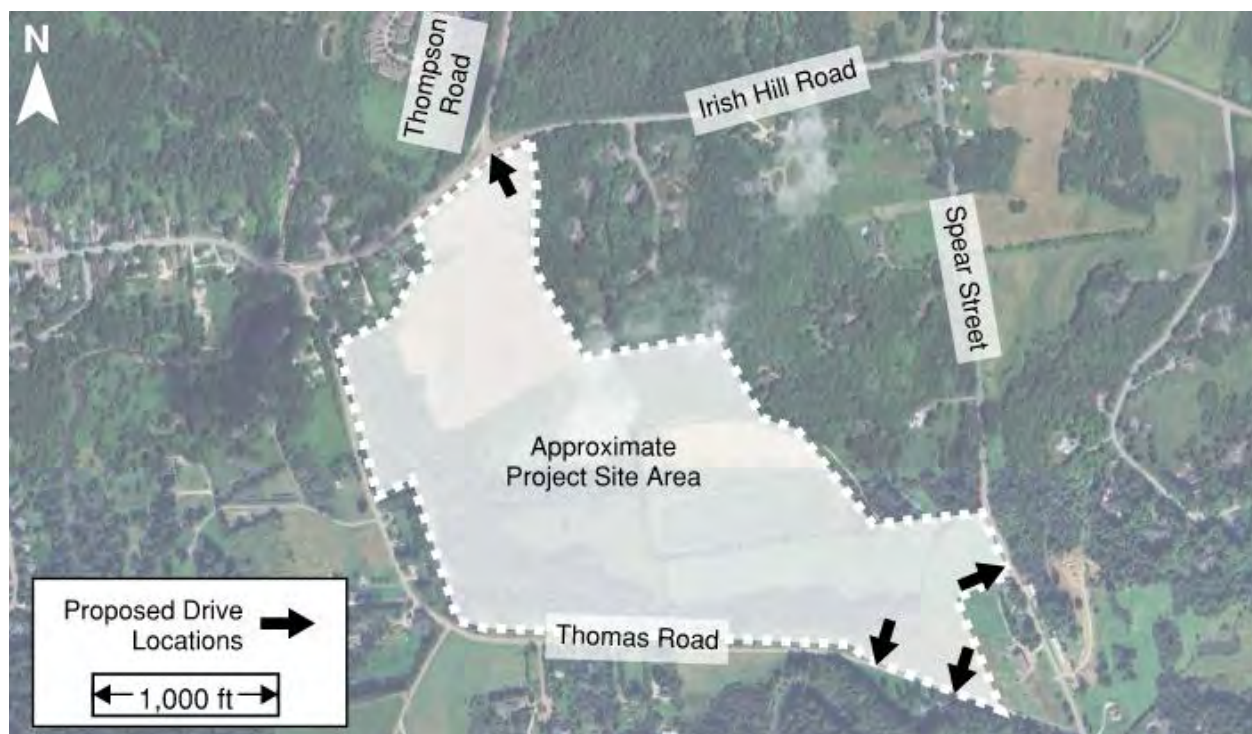
- 159 single-family detached housing dwelling units
 - 125 single-family attached housing (townhouse) dwelling units
 - 48 multifamily housing (low-rise) dwelling units
- 332 total dwelling units

The current plan illustrates a total of 332 dwelling units. However, the site has been approved a sewer allocation of up to 375 dwelling units.

The dwelling units are accessed by an internal interconnected road and sidewalk network with four new accesses onto the existing public highways, including:

- One access on Irish Hill Road opposite Thompson Road
- One access on Spear Street, roughly 1,000 feet north of Thomas Road
- Two accesses on Thomas Road, roughly 600 and 1,200 feet west of Spear Street

FIGURE 1: APPROXIMATE TRIANGLE FARM PUD, SHELBURNE VT



Estimated Trip Generation

Trip generation refers to the number of vehicle trips originating at or destined for a particular land use development. Data from the Institute of Transportation Engineers (ITE) can be applied to estimate base vehicle trip generation associated with the existing and proposed land uses. Base vehicle trips are the total estimated vehicle trips prior to any reductions associated with

internal capture, pass-by, or transportation demand management (TDM) practices. For this proposed development, adjustments to the base vehicle trip generation are not recommended.

The ITE Trip Generation Manual, 11th Edition, includes trip generation data for three relevant land uses:

- Land use code (LUC) 210: Single-Family Detached Housing, defined as:
A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.
- LUC 215: Single-Family Attached Housing, defined as:
Single-family attached housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space.
- ITE LUC 220: Multifamily Housing (Low-Rise)
Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels).

Table 1 details estimated base vehicle trip generation of the proposed site using the methodology outlined in the ITE Trip Generation Manual. Because the project has a maximum build potential to construct up to 375 dwelling units, the estimated trip generation of the proposed 332 dwelling units was escalated by +13% ($375 / 332$) to represent a maximum build trip generation while maintaining the same proportional distribution of housing type.

TABLE 1: ESTIMATED BASE VEHICLE TRIP GENERATION OF THE PROPOSED SITE

Triangle Farm, Shelburne				AM Peak Hour			PM Peak Hour			Weekday
Proposed Site: Base Vehicle Trip Generation				Base			Base			Base
ITE LUC	Description	Size	Unit	Enter	Exit	Total	Enter	Exit	Total	Total
210	Single-Family Detached Housing	159	DU	29	85	114	97	57	154	1546
215	Single-Family Attached Housing	125	DU	15	44	59	42	29	71	902
220	Multifamily Housing (Low-Rise)	48	DU	5	14	19	15	9	24	383
Total Base Vehicle Trip Generation		332	DU	49	143	192	154	95	249	2831
Maximum Buildout		375	DU	56	162	218	174	108	282	3198

For comparison, WCG observed the AM and PM peak hours of traffic entering and exiting the residential land uses served by Thompson Road. The residential development along Thompson Road serves a similar mix of single family detached and attached housing, with an estimated total of 97 dwelling units. On Thompson Road, WCG observed 54 trip ends in the AM peak hour, and 77 trip ends in the PM peak hour; the corresponding trip generation rate is 0.56 trips ends in the AM peak hour and 0.79 trip ends in the PM peak hour. These rates are similar to the Triangle Farm composite estimated trip generation rates of 0.58 trip ends in the AM peak hour and 0.75 trip ends in the PM peak hour. Table 2 summarizes these trip generation rates.

TABLE 2: COMPARISON OF OBSERVED THOMPSON ROAD TRIP GENERATION RATES TO ITE-ESTIMATED TRIANGLE FARM TRIP GENERATION RATES

	Size	Unit	AM Peak Hour			PM Peak Hour		
			Enter %	Exit %	Total Rate	Enter %	Exit %	Total Rate
Thompson Drive Observed Trip Gen. Rate	97	DU	19%	81%	0.56	70%	30%	0.79
Triangle Farm Estimated (ITE) Trip Gen. Rate	375	DU	26%	74%	0.58	62%	38%	0.75

The observed trip generation rates from Thompson Road are within 4-6% of the estimated trip generation rates using national data sources, validating the methodology of the Triangle Farm trip generation estimate.

Thresholds for Transportation Impact Study

VTrans guidelines specify that a traffic study should be considered if the proposed development will generate 75 or more new peak hour trips.¹ For projects that generate more than 75 peak hour trips, the Town of Shelburne Zoning Bylaws further requires analysis of all intersections within ½ mile of the project location.

The proposed Triangle Farm PUD generates more than 75 peak hour trips. The minimum geographic study area for capacity and congestion analysis should include the site accesses, all intersections receiving 75 trips or more in the peak hour, plus all intersections within ½ mile of the project location.

Trip Distribution

Because the project is composed of residential dwelling units, the estimated peak hour trip generation documented in Table 1 was distributed according to the U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, Home to Work Distance / Direction Analysis, documented in the attachments. Trips were distributed amongst the proposed project driveways based on proximity to the dwelling units and logical routes for the census-based origin and destination directions. Along the Spear Street corridor and at the network nodes, traffic was distributed proportionally to the existing traffic volumes.

Trip distribution figures are presented in the attachments.

The estimated trip distribution at the proposed project drive intersection at Irish Hill Road was compared to the observed trip distribution at the opposing Thompson Road approach. Table 3 summarizes the percentage of entering and exiting traffic by direction for these approaches. The observed trip distribution rates from Thompson Road compare closely to the estimated trip distribution methodology, validating the process of the Triangle Farm trip distribution.

¹ Vermont Agency of Transportation, Policy and Planning Division, Development Review and Permitting Services, *Traffic Impact Study Guidelines* (April 2019).

TABLE 3: OBSERVED TRIP DISTRIBUTION FROM THOMPSON ROAD COMPARED TO THE ESTIMATED PROJECT GENERATED TRIP DISTRIBUTION FROM THE DRIVEWAY OPPOSITE THOMPSON ROAD

		Observed Thompson Road	Estimated Project Drive @ Irish Hill Road
AM Peak Hour	To west	41%	41%
	To east	59%	59%
	From west	60%	40%
	From east	40%	60%
PM Peak Hour	To west	48%	41%
	To east	52%	59%
	From west	39%	40%
	From east	61%	60%

EXISTING ROADWAY CONTEXT

The proposed project is located on an undeveloped parcel consisting primarily of grassy field and meadow. The adjacent roadside development is primarily low density residential and agricultural.

Figure 2 illustrates the location of the proposed site relative to the local roadway network. The project site is within Burlington Federal Aid Urban Boundary.

The site is located within the current Town of Shelburne Rural Zoning District. The draft Unified Land Use Regulations rezones the project area into the Village-2 and Residential Neighborhood districts. The zoning districts and associated infrastructure, including roadways, are intended to “absorb most of the Shelburne’s future growth” and “foster compact, walkable and connected development patterns”.

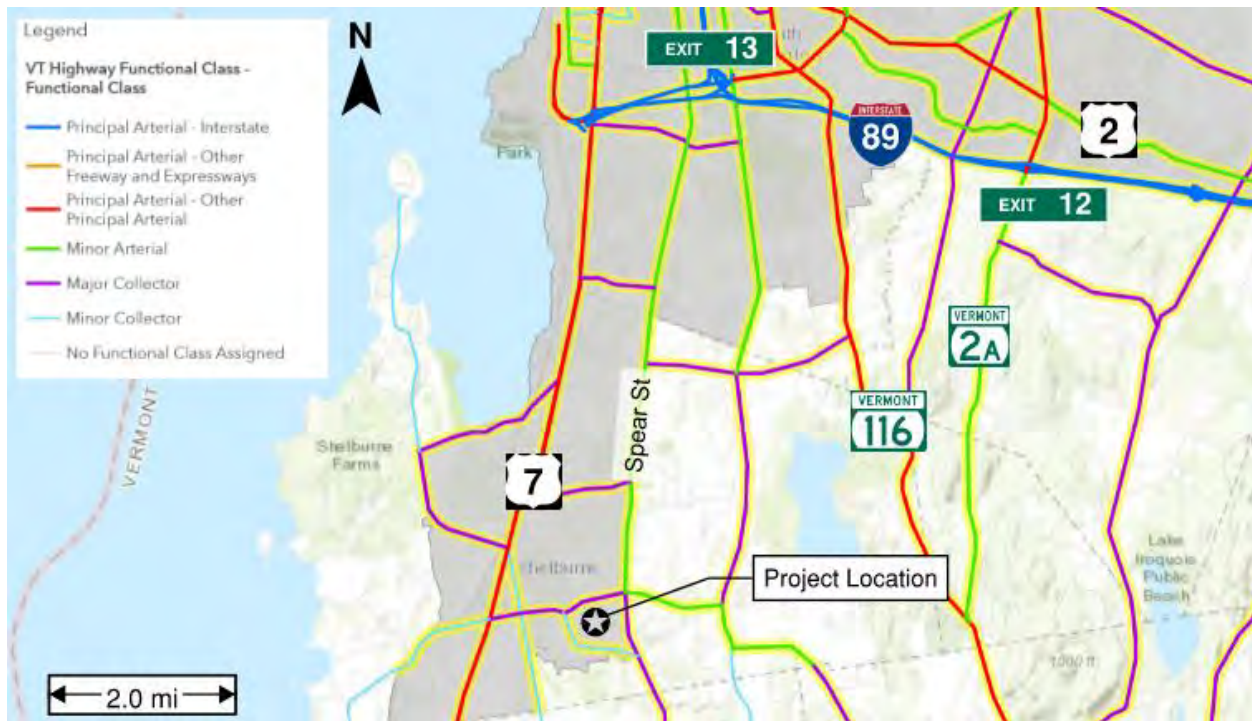
Existing Transportation Network

Internal roadways within the Triangle Farm site access existing public town highways on Irish Hill Road (TH-2), Spear Street (TH-17), and Thomas Road (TH-4). The proposed new internal roadways are classified by their street typology based on their roadway width, bicycle and pedestrian infrastructure, planting strip, and other cross sectional criteria.

The northern site driveway intersects with Irish Hill Road opposite Thompson Road, approximately 1,500 feet east of Thomas Road and 2,500 feet west of Spear Street. Irish Hill Road is an east-west corridor connecting the north-south aligned routes US-7, Spear Street, and Dorset Street. Irish Hill Road is a class 2 town highway (TH-2) and is classified as a major collector. Irish Hill Road is roughly 28 to 30-feet wide with one lane in each direction. There is a painted double yellow centerline and white fog lines in both directions, with a variable width

shoulder. There is a sidewalk on the north side of Irish Hill Road, beginning roughly 500 feet west of Thompson Road and continuing west across the La Platte River and into the existing village sidewalk network. The posted speed limit is 35 MPH east of Thompson Road and 30 MPH west of Thompson Road. The estimated average annual daily traffic (AADT) of Irish Hill Road is 5,024 vehicles per day (vpd).

FIGURE 2: PROPOSED SITE RELATIVE TO THE ROADWAY NETWORK



The eastern site driveway intersects with Spear Street approximately 1,000 feet north of Thomas Road and 2,600 feet south of Irish Hill Road. Spear Street is a common alternate parallel north-south route to US-7. South of Irish Hill Road near the proposed site access, Spear Street is a class 3 town highway (TH-17) and is classified as a major collector. Spear Street is roughly 28-feet wide with one lane in each direction, a painted double yellow centerline and no painted fog lines. The posted speed limit is 35 MPH. There is no bicycle or pedestrian infrastructure along Spear Street south of Irish Hill Road, and there are no recent traffic counts.

North of Irish Hill Road, Spear Street becomes a class 2 town highway (TH-6) and is classified as a minor arterial. The road is roughly 30-feet wide with a painted double yellow center line, white fog lines in both directions, and shoulders for bicycle travel. The estimated AADT of Spear Street north of Irish Hill Road is 4,950 vpd.

The southern site accesses intersect with Thomas Road at two locations, roughly 600 and 1,200 feet west of Spear Street. Thomas Road is a class 2 town highway (TH-4) and classified as a minor collector. Thomas Road is roughly 24-feet wide with one lane in each direction, a painted double yellow centerline and no painted fog lines. The posted speed limit is 35 MPH. There is

no bicycle or pedestrian infrastructure along Thomas Road, and there are no recent traffic counts.

Regionally, US-7 (Shelburne Road) is a north-south aligned principal arterial roughly one mile to the west. I-189 is roughly 5.5 miles north of the project site, I-89 Exit 14 is roughly 7 miles north, and I-89 Exit 12 is roughly 9 miles northeast.

Table 4 summarizes available traffic data proximate to the study area.

TABLE 4: SUMMARY OF TRAFFIC DATA NEAR PROJECT AREA

	Spear Street	Irish Hill Road	US-7 (Shelburne Road)
Count station ID	n/a (WCG Count)	D341	D277
Location description	b/w Irish Hill Road and Bishop Road	b/w Thomas Road and Falls Road	b/w Falls Road and Webster Road
Data Year	2025	2023	2024 (continuous)
AADT (vpd)	4,950	4,940	16,495
DHV (vph)	600	688	1,497
%K (peak hour ratio)	12.1%	13.9%	9.1%
%D (directional ratio)	56%	54%	54%
Weekday peak hour volume range (vph)	505-628	523 – 695	1,371 – 1,522 ²
Day to day variation in peak hour volume	123	172	151
Variation as percent of DHV	21%	25%	10%

Transit Service

There is no fixed route transit service along Irish Hill Road, Spear Street, or Thomas Road. The nearest fixed route transit stop is at the Irish Hill Road / Marsett Road & Falls Road / Mt. Philo Road intersection, roughly ¾-miles west of the project site. The stop services Green Mountain Transit Route 6 Shelburne Road route along US-7. The route features 30-minute headways from 6 AM to 7 PM and hourly headways from 7 PM to 10 PM, Monday through Friday with reduced service on the weekend.

² Peak hour volume of most recently available continuous weekday traffic from 6/24/25 through 6/30/25

Future Road Network

No upcoming or underway transportation network projects were identified from available online resources.

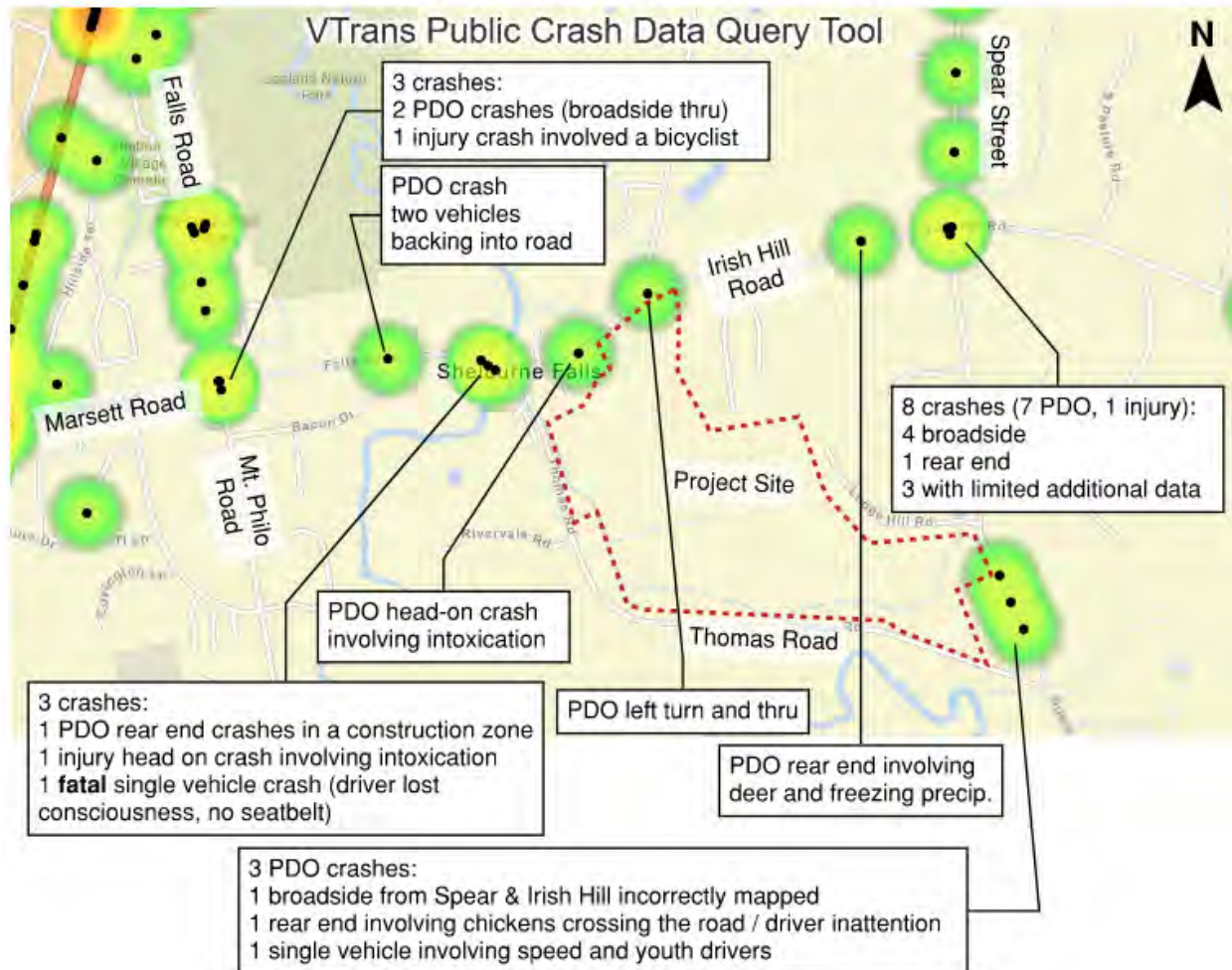
Crash Review

WCG reviewed the most recent high crash location (HCL) report prepared by VTrans using 2012-2016 crash data. According to the HCL report, there are no HCL segments or intersections near the project site. The nearest HCLs are:

- US-7 segment in Shelburne from mile marker 1.0 – 1.3 through the Marsett Road / Bostwick Road intersection, approximately 1 mile west of the project site
 - 2012-2016: HCL segment number 700, 51 total crashes, including 17 injury crashes, actual: critical ratio 1.07
 - 2020-2024: 33 total reported crashes, including seven injury crashes and one fatal crash
 - The reported fatal crash was a single vehicle crash involving a pedestrian near Cynosure Drive
- US-7 segment in Shelburne from mile marker 1.8 – 2.1 through the Falls Road / Harbor Road intersection, approximately 1.5 mile northwest of the project site
 - 2012-2016: HCL segment number 343, 78 total crashes, 13 injury crashes, actual: critical ratio 1.44
 - 2020-2024: 46 total crashes including seven injury crashes
 - 20 rear-end crashes
 - 5 broadside crashes
 - 4 same direction sideswipe crashes
 - 1 opposite direction sideswipe crash
 - 1 head on crash
 - 15 crashes with no additional accessible detail

WCG reviewed the reported crashes within the area bounded by Irish Hill Road, Thomas Road, and Spear Street in the most recent five year period: 2020 through 2024 (Figure 3).

FIGURE 3: REPORTED CRASHES ALONG FALLS ROAD, THOMAS ROAD, IRISH HILL ROAD, AND SPEAR STREET PROXIMATE TO THE STUDY AREA FROM 2020 THROUGH 2024.



There were eight crashes at the Spear Street & Irish Hill Road intersection, with one crash resulting in injury:

- Seven crashes (including one injury crash) were broadside crashes
 - Five of the crashes (including the injury-resulting crash) involved southbound vehicles
 - Six of the broadside crashes were relatively minor and followed complete or rolling stops with drivers entering the intersection inappropriately
 - The injury resulting crash occurred with little evidence of slowing prior to the intersection
- One crash was a rear end crash in the southbound direction.

Two of the crashes, including the injury resulting crash and the southbound rear end crash, may have been avoided with increased visibility of the “stop” and “stop ahead” signs, such as new retroreflective signs and reflective posts.

The remaining crashes near the project site appear to be infrequent and unrelated to roadway characteristics.

Sight Distance

As defined in the 2018 publication *A Policy on Geometric Design of Highways and Streets*, from the American Association of State Highway and Transportation Officials (AASHTO), sight distance is the “the length of roadway ahead that is visible to the driver.”³ Sight distances of sufficient length are necessary at all points along a roadway to ensure vehicles can safely stop or avoid colliding with potential obstructions or other vehicles on the roadway.

Standard practice in assessing intersection safety and operations involves measuring two separate sight distances – **stopping sight distance** and **intersection sight distance**.

Stopping sight distance (SSD) is the visible distance along a roadway between an advancing motorist and a potential obstacle in the roadway. It is measured from a point representing the approaching driver’s eye and a point representing an obstacle in the roadway.⁴ Stopping sight distances of adequate length are needed along all roadways, both at and away from intersections, so that drivers travelling at design speeds can react to potential obstacles and safely brake to avoid collisions. Design minimum stopping sight distances are calculated based on factors such as design speed, response times, and grades as reported in the *2018 Policy on Geometric Design of Highways and Streets*.⁵

Intersection sight distance (ISD) is the distance available along the major road travelled way corresponding with the maximum visibility between an advancing motorist on the major road and an entering motorist on an intersecting minor road. It is measured between a point representing the advancing driver’s eye above the major road and a point representing the entering driver’s eye above the intersecting road.⁶

³ American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, Seventh Edition (Washington D.C.: American Association of State Highway and Transportation Officials, 2018). Page 3-2.

⁴ As noted in the 2018 Policy on Geometric Design of Highways and Streets (page 3-15), the height of the driver’s eye is assumed to be 3.5’ above the road surface and the height of a potential obstacle is 2.0’ above the road surface.

⁵ American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, Seventh Edition (Washington D.C.: American Association of State Highway and Transportation Officials, 2018). Page 3-5 to 3-6.

⁶ As noted in the 2018 Policy on Geometric Design of Highways and Streets (page 3-16), the height of the driver’s eye of the approaching vehicle is assumed to be 3.5’ above the road surface of the major road and the height of the driver’s eye of the entering vehicle is assumed to 3.5’ above the minor road surface. The decision point offset from the travel way varies with sight conditions (page 9-38); in this case, due to snow banks, we evaluated intersection sight distances with the decision point 10-feet from the travel way.

The 2018 *Policy on Geometric Design of Highways and Streets* states that the available intersection sight distance should be at least equal to the required stopping sight distance along the major road.

“Sight distance is also provided at intersections to allow the drivers of stopped vehicles a sufficient view of the intersecting highway to decide when to enter the intersecting highway or to cross it. If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions.”

However, when possible, it is desirable to have intersection sight distances that exceed the design minimum stopping sight distances to offer improved operations, such that major road traffic need not decelerate to accommodate entering traffic.

“However, in some cases a major-road vehicle may need to stop or slow to accommodate the maneuver by a minor road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.”

The required minimum stopping sight distance is based on the posted speed limit (35 MPH at all proposed site driveways) and roadway grade at each location (variable; estimated at 6% downhill from east to west at Irish Hill Road, 3% downhill from north to south at Spear Street, and level at Thomas Road). The desired minimum intersection sight distance is based only on the posted speed limit and is independent of the roadway grade.

Sight distances at the proposed driveway locations were measured in the field. The intersection sight distance views to the left and right at the site driveways are shown in the following figures, and the measured intersection and stopping sight distances are presented in the accompanying tables.

FIGURE 4: DRIVER'S PERSPECTIVE FROM PROPOSED SITE DRIVEWAY AT IRISH HILL ROAD**TABLE 5: MEASURED STOPPING AND INTERSECTION SIGHT DISTANCES AT IRISH HILL ROAD & PROPOSED SITE DRIVE**

	Required Minimum	Design Target	Measured
Stopping Sight Distance	275' westbound 230' eastbound	n/a	westbound: >500' (met) eastbound: >500' (met)
Intersection Sight Distance	left, to west: 230' right, to east: 275'	left, to west: 335' right, to east: 390'	left, to west: >500' (met) right, to east: 375' (partial)

The required minimum stopping and intersection sight distance is met at the proposed site driveway location opposite Thompson Road along Irish Hill Road. The intersection sight distance to the east was limited by brush and vegetative undergrowth. Clearing the low growing branches and brush will increase the sight distance to above the design target.

FIGURE 5: DRIVER'S PERSPECTIVE FROM PROPOSED SITE DRIVEWAY AT SPEAR STREET**TABLE 6: MEASURED STOPPING AND INTERSECTION SIGHT DISTANCES AT SPEAR STREET & PROPOSED SITE DRIVE**

	Required Minimum	Design Target	Measured
Stopping Sight Distance	260' southbound 240' northbound	n/a	southbound: 350' (met) northbound: >500' (met)
Intersection Sight Distance	left, to north: 260' right, to south: 240'	left, to north: 335' right, to south: 390'	left, to north: 365' (met) right, to south: >500' (met)

The required minimum and design target sight distances are met at the proposed site driveway location along Spear Street.

FIGURE 6: DRIVER'S PERSPECTIVE FROM PROPOSED EAST SITE DRIVEWAY AT THOMAS ROAD



TABLE 7: MEASURED STOPPING AND INTERSECTION SIGHT DISTANCES AT THOMAS ROAD & PROPOSED EAST SITE DRIVE

	Required Minimum	Design Target	Measured
Stopping Sight Distance	250'	n/a	eastbound: 410' (met) westbound: >500' (met)
Intersection Sight Distance	250'	left, to east: 335' right, to west: 390'	left, to east: >500' (met) right, to west: 440' (met)

FIGURE 7: DRIVER'S PERSPECTIVE FROM PROPOSED WEST SITE DRIVEWAY AT THOMAS ROAD



TABLE 8: MEASURED STOPPING AND INTERSECTION SIGHT DISTANCES AT THOMAS ROAD & PROPOSED WEST SITE DRIVE

	Required Minimum	Design Target	Measured
Stopping Sight Distance	250'	n/a	eastbound: 380' (met) westbound: 310' (met)
Intersection Sight Distance	250'	left, to east: 335' right, to west: 390'	left, to east: 360' (met) right, to west: 480' (met)

The required minimum and design target sight distances are met at both of the proposed site driveway locations along Thomas Road. More frequent mowing of the grass adjacent to Thomas Road will increase the intersection sight distance.

TRAFFIC PROJECTIONS

This study relies upon design standards and analysis procedures documented in the Highway Capacity Manual 7th Edition,⁷ Trip Generation,⁸ A Policy on Geometric Design of Highways and Streets,⁹ Manual on Uniform Traffic Control Devices (MUTCD),¹⁰ and the Vermont Agency of Transportation Traffic Impact Study Guidelines,¹¹ which are the generally accepted traffic analysis references relied upon by traffic engineering professionals and VTrans for projects of this type in Vermont.

The study area includes 14 intersections:

1. US-7 & Falls Road / Harbor Road
2. US-7 & Bostwick Road / Marsett Road
3. Falls Road / Mt. Philo Road & Marsett Road / Irish Hill Road
4. Irish Hill Road & Thomas Road
5. Irish Hill Road & Thompson Road / Proposed Site Driveway
6. Irish Hill Road & Spear Street
7. Irish Hill Road & Dorset Street
8. Thomas Road & Proposed Site Driveway
9. Spear Street & Thomas Road
10. Spear Street & Proposed Site Driveway
11. Spear Street & Bishop Street
12. Spear Street & Webster Road
13. Spear Street & Barstow Road
14. Spear Street & Allen Road

⁷ National Academies of Sciences, Engineering, and Medicine. 2022. *Highway Capacity Manual 7th Edition: A Guide for Multimodal Mobility Analysis*. (Washington, DC: The National Academies Press, 2022).

⁸ Institute of Transportation Engineers, *Trip Generation 11th Edition* (Washington, D.C.: Institute of Transportation Engineers, 2021).

⁹ American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 7th Edition (Washington DC: AASHTO, 2018).

¹⁰ U.S. Department of Transportation Federal Highway Administration, *Manual on Uniform Traffic Control Devices for Streets and Highways*, 11th Edition, December 2023 (Washington, D.C.: FHWA, 2023).

¹¹ Vermont Agency of Transportation *Traffic Impact Study Guidelines, Policy and Planning Division, Development Review and Permitting Services* (Revised April 2019)

Traffic Volumes

Traffic data sources are summarized in Table 9.

Turning movement counts were conducted when the grade school was in session. No significant weather events occurred during the observation period.

Adjustments to Observed Volumes

WCG applied the following adjustments to the observed turning movement count traffic volumes:

- 1. Design Hour Volume (DHV) Adjustment.** Consistent with VTrans Guidelines, traffic analysis will be conducted with traffic volumes representing the 30th highest hour. From the VTrans TIS Guidelines:

Since it is impractical to design a highway for the highest volume encountered during the year, highway engineers have sought a compromise between capacity and cost. Thus, a highway is designed for the 30th highest hourly volume of the year, commonly known as the "Design Hour Volume" (DHV).

WCG considered several alternative methods to estimate the DHV, documented in the attachments. Following the recommended procedures in the TIS Guidelines, WCG considered the peak observed hourly volume along Spear Street north of Irish Hill Road as the design hour volume at 600 vehicles per hour (vph). This DHV estimate is higher than the observed turning movement count peak hour (571 vph) and the predicted DHV by seasonal factor group (528 vph). The resulting DHV adjustment of 1.051 was applied to all primary movements on the town highways.

On the state highway, the turning movement count used in the analysis (1,511 vph) aligned very closely with the 2024 observed continuous count station DHV (1,498 vph); no DHV adjustment was made to the US-7 & Falls Road / Harbor Road intersection volumes, and the US-7 through movements were balanced at the Marsett Road / Bostwick Road intersection.

- 2. Annual Adjustment.** Consistent with VTrans Guidelines, traffic analyses should consider the base year (year in which the project is completed) and the planning year (base year plus five years). For this project, the base year is 2027 and the planning year is 2032. VTrans recommends a growth rate of 7% over 20 years at sites across the state, or roughly 0.34% per year.

Other Development Volumes

The Town of Shelburne did not identify any other developments to include in analysis.

No Build Scenario Volumes

The 2027 and 2032 adjusted design hour volumes are presented in the attachments. These figures represent the No Build scenario volumes.

TABLE 9: TRAFFIC DATA SOURCES AND COLLECTION DATES

Data	Source	Date
1. US-7 & Falls Road / Harbor Road turning movement count	VTrans MS2 System Int. ID 30413715	Wednesday 10 June 2024 and Thursday 11 July 2024
2. US-7 & Bostwick Road / Marsett Road turning movement count	WCG count	Thursday 22 May 2025
3. Falls Road / Mt. Philo Road & Marsett Road / Irish Hill Road turning movement count	WCG count	Thursday 22 May 2025
4. Irish Hill Road & Thomas Road turning movement count	WCG count	Thursday 22 May 2025
5. Irish Hill Road & Thompson Road / Proposed Site Driveway turning movement count	WCG count	Thursday 29 May 2025
6. Irish Hill Road & Spear Street turning movement count	WCG count	Thursday 22 May 2025
7. Irish Hill Road & Dorset Street turning movement count	WCG count	Thursday 22 May 2025
8. Thomas Road & Proposed Site Driveway turning movement count	Inferred count	n/a
9. Spear Street & Thomas Road turning movement count	WCG count	Thursday 22 May 2025
10. Spear Street & Proposed Site Driveway turning movement count	Inferred count	n/a
11. Spear Street & Bishop Street turning movement count	WCG count	Thursday 22 May 2025
12. Spear Street & Webster Road turning movement count	WCG count	Thursday 29 May 2025
13. Spear Street & Barstow Road turning movement count	WCG count	Thursday 29 May 2025
14. Spear Street & Allen Road turning movement count	WCG count	Thursday 29 May 2025
Continuous traffic counter (CTC) along US-7 b/w Webster Road junctions	VTrans site D277	Continuous
Automatic traffic recorder along Spear Street north of Irish Hill Road	WCG count	Thursday 29 May 2025 through 14 June 2025

Project Trip Generation and Distribution

The estimated trip generation documented in Table 1 was distributed as described in the previous [Project Parameters: Trip Distribution](#) section. Trip distribution figures are presented in the attachments.

Build Scenario Volumes

The distributed trip generation volumes were added to the 2027 and 2032 No Build Scenario volumes to represent the Build condition traffic volumes, illustrated in the attachments.

CAPACITY ANALYSIS

Intersection capacity analyses were performed at the study area intersections. Analyses evaluated average control delay, level of service (LOS), and volume to capacity (v/c) ratios consistent with methodologies documented in the Highway Capacity Manual 7th Edition: A Guide for Multimodal Mobility Analysis (HCM7).

Level of Service Definition

Level of service (LOS) is a qualitative measure describing the operating conditions as perceived by motorists driving in a traffic stream. LOS is calculated using the procedures outlined in the HCM7¹². In addition to traffic volumes, key inputs include the number of lanes at each intersection, traffic control type (signalized or unsignalized), and the traffic signal timing plans, if applicable.

The HCM7 defines six qualitative grades to describe the level of service at an intersection. Level-of-service is based on the average control delay per vehicle; average control delay is a function of a gap acceptance model. Table 10 shows the various LOS grades and descriptions for signalized and unsignalized intersections. According to HCM procedures, an overall LOS cannot be calculated for two-way stop-controlled intersections because not all movements experience delay.

The VTrans policy on level of service is:

- Overall LOS C should be maintained for state-maintained highways and other streets accessing the state's facilities.
- Reduced LOS may be acceptable on a case-by-case basis when considering, at a minimum, current and future traffic volumes, delays, volume to capacity ratios, crash

¹² The HCM7 does not provide methodologies for calculating intersection delays at certain intersection types including signalized intersections with exclusive pedestrian phases and signalized intersections with non NEMA-standard phasing. These conditions exist at the US-7 & Harbor Drive / Falls Road and US-7 & Marsett Road / Bostwick Road intersections (leading pedestrian interval phasing). Because of these limitations, the HCM 2000 methodology is employed at this intersection.

rates, and negative impacts resulting from improvements necessary to achieve LOS C.

- LOS D should be maintained for side roads with volumes exceeding 100 vehicles/hour for a single lane approach (150 vehicles/hour for a two-lane approach) at two-way stop-controlled intersections.

The 2018 Shelburne Zoning Bylaws requires an overall LOS of C on “all roads and intersections within the analysis area”, allowing LOS D in the Village Center District; the draft Unified Bylaws defers acceptable operations to the definitions outlined in the VTrans TIS Guidelines.

TABLE 10: LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LOS	CHARACTERISTICS	SIGNALIZED AVG. CONTROL DELAY (SEC)	UNSIGNALIZED AVG. CONTROL DELAY (SEC)
A	Little or no delay	≤ 10.0	≤ 10.0
B	Short delays	10.1-20.0	10.1-15.0
C	Average delays	20.1-35.0	15.1-25.0
D	Long delays	35.1-55.0	25.1-35.0
E	Very long delays	55.1-80.0	35.1-50.0
F	Extreme delays	> 80.0	> 50.0

Volume to Capacity Ratio Definition

The volume to capacity ratio (v/c) represents the sufficiency of an approach leg to accommodate the vehicular demand. According to engineering practice:

“Volume-to-capacity (v/c) ratio reflects how closely a roadway is operating to its capacity. By definition, the volume of traffic using a roadway cannot exceed the roadway’s capacity... A v/c ratio that exceeds 1.0 indicates that more vehicles demand to use a roadway than can be accommodated... LOS F is assigned to a movement if its volume-to-capacity ratio exceeds 1.0, regardless of the control delay”¹³

As the v/c ratio approaches 1.0, traffic flow may become unstable, and delay and queuing conditions may occur. Once the demand exceeds the capacity (a v/c ratio greater than 1.0), traffic flow is unstable and excessive delay and queuing is expected.”¹⁴

Neither VTrans nor the Town of Shelburne have a v/c policy. Typically, v/c is used as an alternative indicator of performance, with preferred values below 0.95.

¹³ Transportation Research Board, *Highway Capacity Manual, 7th Edition*, 2022

¹⁴ Federal Highway Administration (FHWA), *Signalized Intersections: Informational Guide*, 2004

Capacity and Performance Analysis

WCG built a traffic model using Synchro version 12 for 2027 and 2032 adjusted intersection volumes for the AM and PM peak hours in the No Build and Build scenarios. The resulting performance measures in 2032 are presented in Table 11. The results for 2027 are similar and included in the attachments.

TABLE 11: RESULTS OF INTERSECTION CAPACITY ANALYSIS USING THE 2032 NO BUILD AND BUILD SCENARIO VOLUMES (CONTINUED ON NEXT PAGE)

2032 Scenarios												
Intersections	Weekday AM Peak Hour						Weekday PM Peak Hour					
	No Build			Build			No Build			Build		
	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c
 1. US-7 & Harbor Road / Falls Road												
Overall	E	66		E	68		E	64		E	66	
EB, along Harbor Rd	E	65	0.86	E	67	0.88	E	65	0.83	E	67	0.84
WB, along Falls Rd	D	43	0.64	D	44	0.67	D	48	0.77	D	50	0.80
NB, along US-7	F	76	1.03	F	78	1.03	F	81	1.04	F	84	1.05
SB, along US-7	E	67	1.00	F	69	1.01	E	56	0.97	E	59	0.98
 2. US-7 & Bostwick Road / Marsett Road												
Overall	A	6		A	8		B	19		B	19	
EB, along Bostwick Rd	C	27	0.17	C	25	0.14	B	19	0.22	B	19	0.21
WB, along Marsett Rd	C	30	0.45	C	29	0.48	C	32	0.77	C	33	0.78
NB, along US-7	A	5	0.54	A	6	0.56	B	16	0.74	B	17	0.76
SB, along US-7	A	5	0.52	A	6	0.55	B	16	0.74	B	16	0.75
 3. Irish Hill Road / Marsett Road & Falls Road / Mount Philo Road												
Overall	B	12		B	13		C	16		C	19	
EB, along Marsett Rd	B	12	0.39	B	13	0.41	B	14	0.44	B	15	0.49
WB, along Irish Hill Rd	B	13	0.48	B	15	0.54	C	19	0.67	C	23	0.74
NB, along Mt. Philo Rd	B	12	0.34	B	12	0.36	B	11	0.17	B	11	0.18
SB, along Falls Rd	B	11	0.27	B	12	0.29	B	15	0.48	C	17	0.55
 4. Irish Hill Road & Thomas Road												
WB Left, along Irish Hill Rd	A	8	<0.01	A	8	<0.01	A	8	<0.01	A	8	<0.01
NB, along Thomas Rd	B	14	0.06	B	15	0.10	C	15	0.06	C	17	0.09
 5. Irish Hill Road & Thompson Drive / Site Access												
EB Left, along Irish Hill Rd	A	8	<0.01	A	8	<0.01	A	8	0.02	A	8	0.02
WB Left, along Irish Hill Rd	A	<1	<0.01	A	8	0.01	A	<1	<0.01	A	8	0.04
NB, along Site Access		n/a		B	14	0.14		n/a		C	15	0.12
SB, along Thompson Dr	B	14	0.10	B	15	0.11	B	15	0.06	C	17	0.08
 6. Irish Hill Road & Spear Street												
Overall	B	13		C	17		C	16		D	27	
EB, along Irish Hill Road	C	16	0.60	C	24	0.73	C	16	0.55	C	25	0.70
WB, along Irish Hill Rd	B	11	0.34	B	13	0.41	B	15	0.52	C	23	0.68
NB, along Spear St	B	11	0.23	B	13	0.38	B	11	0.13	B	13	0.26
SB, along Spear St	B	11	0.31	B	13	0.39	C	17	0.60	E	36	0.83

"LOS" is the level of service; "Delay" is the average control delay in seconds per vehicle; "v/c" is the volume to capacity ratio

TABLE 12: RESULTS OF INTERSECTION CAPACITY ANALYSIS USING THE 2032 NO BUILD AND BUILD SCENARIO VOLUMES (CONTINUED FROM PREVIOUS PAGE)

2032 Scenarios												
Intersections	Weekday AM Peak Hour						Weekday PM Peak Hour					
	No Build			Build			No Build			Build		
	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c
 7. Irish Hill Road / Pond Road & Dorset Street												
Overall	B	15		C	15		B	11		B	12	
EB, along Irish Hill Rd	B	13	0.45	B	14	0.51	B	11	0.35	B	12	0.39
WB, along Pond Rd	A	10	0.06	A	10	0.06	A	9	0.07	A	9	0.08
NB, along Dorset St	C	17	0.65	C	19	0.68	A	10	0.20	A	10	0.22
SB, along Dorset St	A	10	0.23	B	10	0.24	B	12	0.47	B	13	0.52
 8. Thomas Road & Site Access												
EB Left, along Thomas Rd	n/a			A	7	<0.01	n/a			A	7	<0.01
SB, along Site Access				A	9	0.02				A	9	0.01
 9. Spear Street & Thomas Rd												
Overall	A	8		A	8		A	8		A	8	
EB, along Thomas Rd	A	7	0.02	A	7	0.02	A	7	0.02	A	7	0.02
NB, along Spear St	A	8	0.15	A	8	0.16	A	8	0.09	A	8	0.10
SB, along Spear St	A	7	0.04	A	7	0.04	A	8	0.17	A	8	0.17
 10. Spear Street & Site Access												
EB, along Site Access	n/a			A	10	0.09	n/a			B	10	0.07
NB Left, along Spear St				A	7	<0.01				A	8	<0.01
 11. Spear Street & Bishop Street / Kelady Drive												
Overall	A	10		B	11		A	10		B	12	
EB, along Kelady Dr	A	8	<0.01	A	9	<0.01	A	9	<0.01	A	9	<0.01
WB, along Bishop Rd	A	8	0.07	A	9	0.07	A	8	0.05	A	9	0.05
NB, along Spear St	B	10	0.40	B	12	0.50	A	9	0.27	A	10	0.35
SB, along Spear St	A	9	0.26	A	10	0.30	B	11	0.46	B	13	0.57
 12. Spear Street & Webster Road												
Overall	B	12		B	15		B	14		C	17	
EB, along Webster Rd	B	11	0.34	B	12	0.38	C	16	0.58	C	19	0.66
NB, along Spear St	B	13	0.53	C	18	0.65	B	12	0.34	B	14	0.45
SB, along Spear St	B	10	0.33	B	11	0.37	B	13	0.48	C	17	0.60
 13. Spear Street & Barstow Road												
WB, along Barstow Rd	C	17	0.40	C	19	0.44	D	31	0.56	E	47	0.71
SB Left, along Spear St	A	9	0.08	A	9	0.08	A	9	0.19	A	9	0.20
 14. Spear Street & Allen Road												
Overall	B	18		B	18		D	41		D	42	
EB, along Allen Rd	C	22	0.51	C	22	0.51	F	54	1.02	F	53	1.02
WB, along Allen Rd	B	20	0.13	B	20	0.13	B	14	0.04	B	14	0.04
NB, along Spear St	B	13	0.39	B	13	0.43	C	25	0.42	C	26	0.50
SB, along Spear St	B	20	0.52	B	20	0.53	D	38	0.82	D	43	0.88

"LOS" is the level of service; "Delay" is the average control delay in seconds per vehicle; "v/c" is the volume to capacity ratio

Figure 8 and Figure 9 geographically illustrate the overall level of service (or worst approach level of service for two way stop controlled intersections) in the no build and build scenarios for the AM and PM peak hours, respectively.

FIGURE 8: 2032 AM PEAK HOUR CONGESTION ANALYSIS LEVEL OF SERVICE RESULTS FOR THE NO BUILD / BUILD SCENARIOS

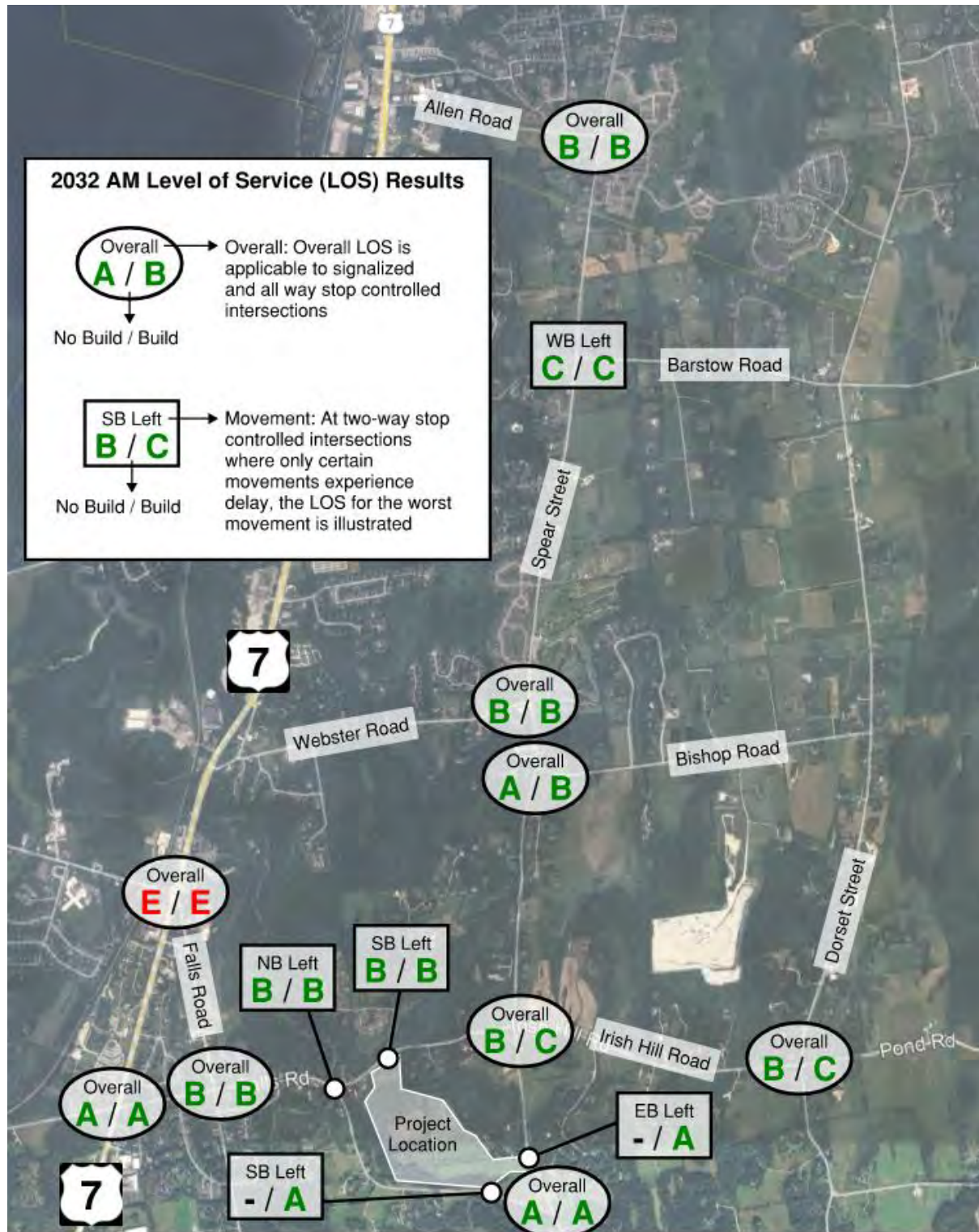
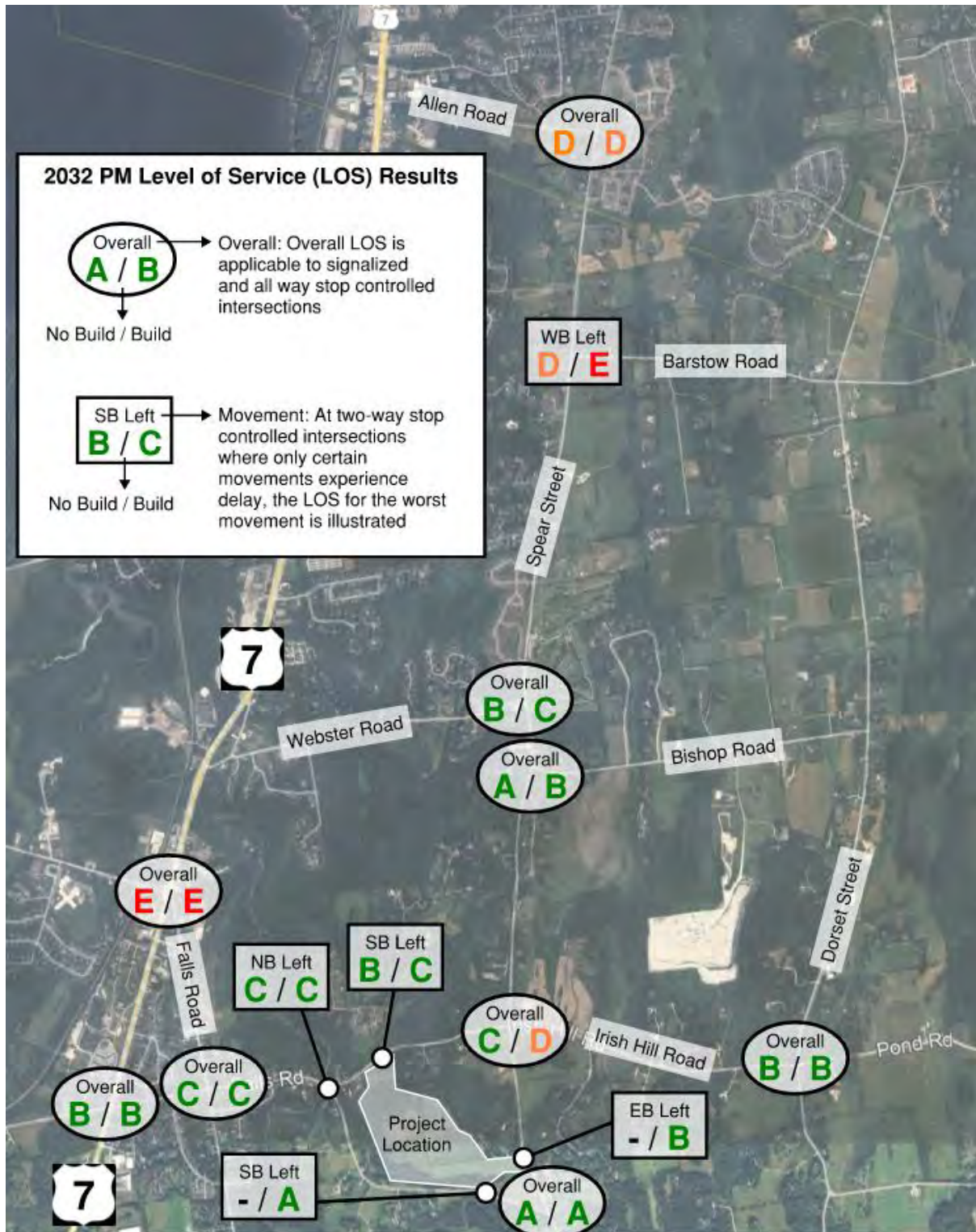


FIGURE 9: 2032 PM PEAK HOUR CONGESTION ANALYSIS LEVEL OF SERVICE RESULTS FOR THE NO BUILD / BUILD SCENARIOS

The results of the traffic capacity and performance analysis indicate:

- The all-way stop controlled intersections generally operate acceptably with overall LOS C or below, with the one exception of Spear Street & Irish Hill Road.
 - At Spear Street & Irish Hill Road, the overall average control delay exceeds the LOS D threshold by 2 seconds. Intersection modifications to improve the overall LOS may include added turn lanes, signalization, and/or roundabout control. All options are likely to result in negative impacts to address an otherwise minor degradation in service during limited time periods.
- The two-way stop controlled intersections generally operate acceptably with overall LOS C or below, with the one exception of Spear Street & Barstow Road.
 - At Spear Street & Barstow Road the minor leg delay increases by 16 seconds, from LOS D into LOS E. An all-way stop control warrant is presented in the following section.
- The US-7 & Falls Road / Harbor Road intersection currently operates at LOS E in both AM and PM peak hours. The overall LOS is not expected to change as a result of the project. Overall average control delay through the intersection is expected to increase by 2 seconds.
 - Chittenden County Regional Planning Commission prepared a scoping study¹⁵ at the US-7 & Falls Road / Harbor Road intersection. The preferred alternative included two components: signalization upgrades (largely implemented), and new turn lanes. The turn lane improvements have been partially implemented except for the southbound right turn lane due to right-of way constraints. The southbound right turn lane has not been programmed into the Transportation Improvement Program or pursued as part of an Act 145 Statewide Transportation Impact Fee.
- The signalized Spear Street & Allen Road intersection operates at LOS D in both the no-build and build scenarios in the PM peak hour. The overall LOS is not expected to change as a result of the project. The overall delay is expected to increase by 1 second in the build condition. The critical movement at that intersection is the eastbound left turning volume. The proposed project does not add any eastbound left turns at the intersection.

Of the four intersections that do not explicitly meet the VTrans LOS policy, three (Spear Street & Irish Hill Road, US-7 & Harbor Road / Falls Road, and Spear Street & Allen Road) may be considered to be acceptable based on consideration of the current and future traffic volumes, delays, volume to capacity ratios, crash rates, and negative impacts resulting from

¹⁵ US Route 7/Harbor Road/Falls Road Scoping Report, May 30, 2014 https://www.ccrpcvt.org/wp-content/uploads/2016/01/US7_Harbor_FallsRd_Scoping_20140530.pdf

improvements necessary to achieve LOS C. The fourth, Spear Street & Barstow Road, may be considered for conversion to all-way stop control.

Spear Street & Barstow Road All-Way Stop Control Warrant Consideration

The MUTCD 11th Edition, section 2B.12 documents the warranting criteria for installation of all-way stop control at an intersection:

- A. Crash Experience: *Four or more crashes in a 12-month period, or five or more crashes in a 36-month period that would be correctable by the installation of all-way stop control.* The intersection experienced two reported crashes between 2020 through 2024, one of which would have been correctable. Warrant not met.
- B. Sight Distance: *The sight distance is not adequate for a vehicle to turn onto the major road.* The observed sight distance appeared to be adequate. Warrant not met.
- C. Transition to Signal / Roundabout Control: *All-way stop control is an interim measure that can be installed to control traffic while arrangements are being made for the installation of a traffic control signal or roundabout.* Not applicable. Warrant not met.
- D. 8-Hour Volumes: *Major street traffic volume exceeds 300 vph and minor street traffic volume exceeds 200 vph for any eight hours; if the 85th percentile speed exceeds 40 MPH the warranting volume may be reduced to 70% of the values given.* The 85th percentile speed likely exceeds 40 MPH and the reduced volumes are likely applicable. With only four hours of processed data, a full warrant is not possible at this time. However, all four hours of the observed (no build, unadjusted) traffic volumes exceed the threshold. This warrant is likely met in the existing condition.
- E. Other Factors: *Other factors may be considered, such as (but not limited to) the need to control left-turn conflicts, consistent street design, high pedestrian and bicycle movements.* All significant intersections along Spear Street in Shelburne are all-way stop controlled, some with lesser traffic volumes (Spear Street & Thomas Road, Spear Street & Irish Hill Road, Spear Street & Bishop Road, Spear Street & Webster Road). To the east, the Dorset Street & Barstow Road intersection is all-way stop controlled. Implementation of all-way stop control would be consistent with adjacent roadway intersection control techniques. This warrant is met.

The Spear Street & Barstow Road likely meets the 8-hour traffic volume warrant in the existing condition, and meets the Other Factor: Consistent Street Design warrant. Implementation of All-Way Stop Control is warranted in the existing condition.

Capacity analysis indicates the overall intersection under all-way stop control will perform acceptably at LOS B and C (Table 13). While the average delay for the westbound approach will improve, the new stop signs for the northbound and southbound approaches results in an overall increase in delay for the transportation network.

If all-way stop control is pursued, the implementation should include consideration of temporary advance warning features (portable changeable message signs, flagging on new signs),

permanent advance warning signs, and high conspicuity features (reflective posts, post mounted beacons).

TABLE 13: CAPACITY ANALYSIS OF ALL-WAY STOP CONTROL AT SPEAR STREET & BARSTOW ROAD

2032 Scenarios												
Intersections	Weekday AM Peak Hour						Weekday PM Peak Hour					
	Build Two-Way Stop			Build All-Way Stop			Build Two-Way Stop			Build All-Way Stop		
	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c
 13. Spear Street & Barstow Road Mitigated												
Overall		n/a		B	15			n/a		C	23	
EB, along Webster Rd	C	19	0.44	B	11	0.32	E	47		B	12	0.32
NB, along Spear St		n/a		C	18	0.68		n/a		C	22	0.75
SB, along Spear St		n/a		B	12	0.42		n/a		D	28	0.81

"LOS" is the level of service; "Delay" is the average control delay in seconds per vehicle; "v/c" is the volume to capacity ratio

Turn Lane Warrant Analysis

WCG conducted left- and right-turn lane volume warrant evaluations for the 2032 Build scenarios in the AM and PM peak hours for the Irish Hill Road & Thompson Road / Site Driveway intersection. This site driveway intersection was evaluated as Irish Hill Road has the highest traffic volume of the adjacent streets, and the driveway is expected to have the highest left turning volume. The warrant evaluations were conducted following standard practice outlined in the VTrans Transportation Impact Study Guidelines. The results of the 2032 turn lane volume warrant evaluation are summarized in Table 14 and included in the attachments.

TABLE 14: 2032 TURN LANE WARRANT EVALUATION AT IRISH HILL ROAD & PROPOSED SITE ACCESS

	2032 AM Build	2032 PM Build
Irish Hill Road & Thompson Road		
Left Turn Lane Warrant Met?	No	No
Right Turn Lane Warrant Met?	No	No
Irish Hill Road & Site Driveway		
Left Turn Lane Warrant Met?	No	No
Right Turn Lane Warrant Met?	No	No

Neither left turning nor right turning volumes meet the volume warrant in any scenario in either direction.

The warranting volume is one consideration when evaluating installation of a left or right turn lane at a particular site. Other considerations should include the potential impacts a turn lane may have on bicycle and pedestrian travel, transit operations, crash history, and roadway context. A turn lane results in a wider roadway which increases pedestrian crossing distances and may increase vehicle traveling speeds.

Given the warranting volume, existing corridor context with a single travel lane and few turn lanes in the area, and expected bicycle and pedestrian impacts, turn lanes from Irish Hill Road into Thompson Road or the project site are not recommended. With lower traffic volumes and similar concerns related to bicycle and pedestrian travel impacts, turn lanes are not recommended at the other site driveways.

BICYCLE, PEDESTRIAN, AND TRANSIT ACCESS

The project proposes an extensive network of sidewalks, multiuse paths, and trails throughout the project site. With an expected slow speed and low volume road network on site, bicycle use is expected on roadways, even with the presence of a multiuse path. The conceptual site plan illustrates the sidewalks ending at the public right of way. As the site plan develops, the site sidewalks should extend to the public roadways and terminate with accessible landings with appropriate detectable warning features.

The existing Shelburne village sidewalk network ends approximately 500-feet west of Thompson Road, with a worn pedestrian path from the end of the sidewalk network to Thompson Road. The proposed project should connect into the existing sidewalk network, including:

- Extend the existing sidewalk from the current terminus along Irish Hill Road to Thompson Road,
- Construction of accessible sidewalk landings at Thompson Road and the proposed site driveway, and
- Installation of crosswalk features with appropriate visibility enhancements, which may include striping, advanced warning signs, and pedestrian activated rectangular rapid flashing beacons (RRFBs).

With no fixed route transit service, direct transit access to the Triangle Farm site is not feasible.

The Shelburne Bicycle and Pedestrian Paths Committee (BPPC) submitted comments related to regional bicycle and pedestrian access and connectivity near the project site. Initial responses to these comments are provided in Attachment H.

POTENTIAL MITIGATION CONSIDERATIONS

Statewide Act 145 Transportation Impact Fee

The statewide Act 145 Transportation Impact Fee is based on the number of PM peak hour trips expected to travel through the fee-generating projects within a set distance to the project site. The proposed project is estimated to generate 282 primary vehicle trips in the PM peak hour (Table 1). With more than 75 new PM peak hour trips, the project is expected to be assessed Act 145 impact fees from established fees within five (5) road miles. One Act 145 Transportation Impact Fee generating projects is within five road miles of the proposed project (Figure 10). By extending the sidewalk network along Irish Hill Road, the proposed project is eligible for a 10%

TDM adjustment to the base Act 145 transportation impact fee. The project site does not qualify for adjustment due to growth center or neighborhood development area designation.

The proposed project is estimated to generate 7 PM peak hour trips along Pond Road east of Dorset Street towards VT-116 (Attachment C2). There is no available turning movement count at VT-116 & Pond Road. Assuming 50% of the vehicles along Pond Road travel along VT-116 to and from the south towards the fee generating project and rounding down per policy, the total number of fee generating trips in the PM peak hour is 3. The total Act 145 impact fee is estimated at \$3,947 (Table 15).

FIGURE 10: ACT 145 IMPACT FEE GENERATING PROJECTS WITHIN 5 MILES OF THE PROJECT SITE

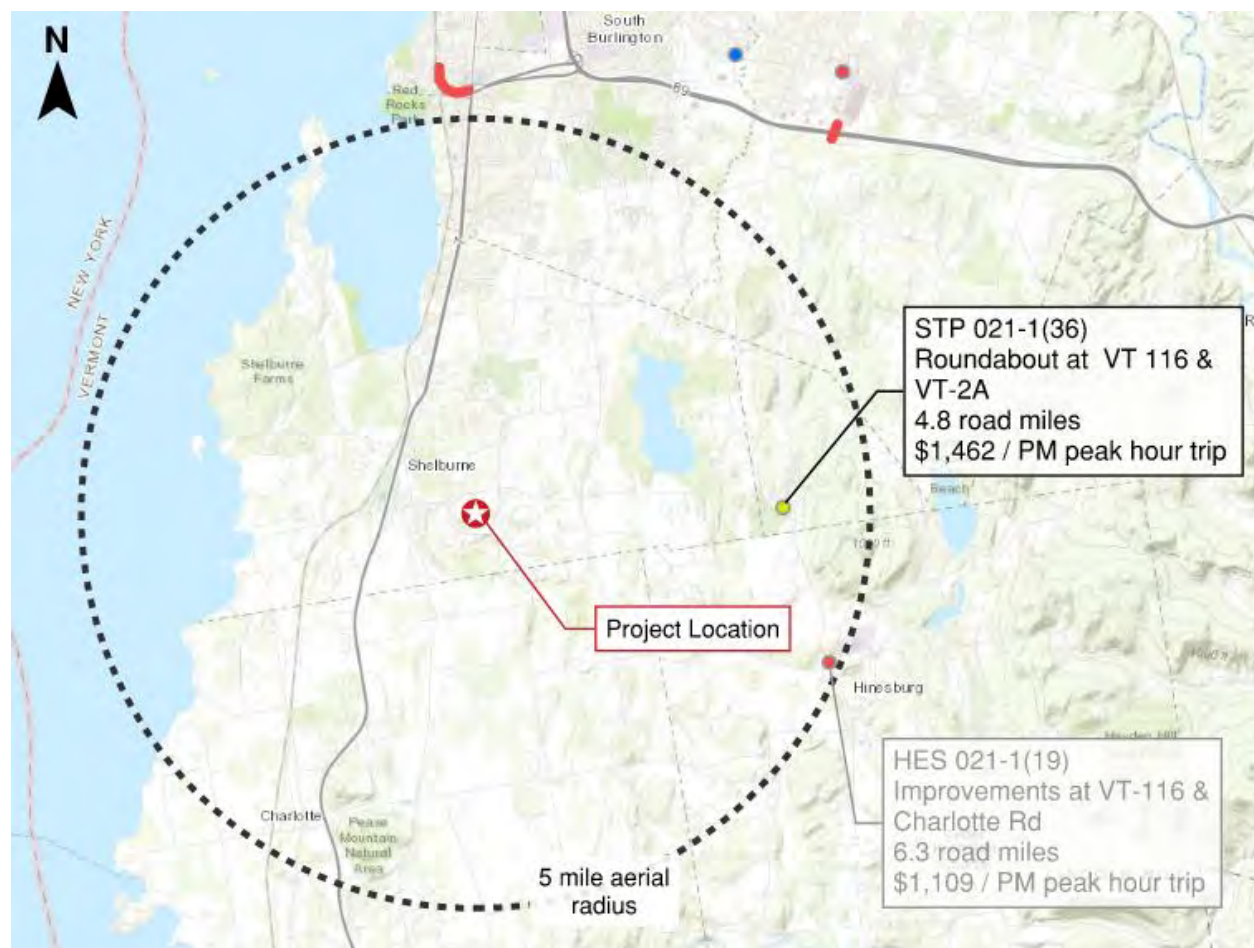


TABLE 15: ESTIMATED ACT 145 TRANSPORTATION IMPACT FEE

Project	Base Fee Rate (\$ / PM Peak Hour Trip Ends)	PM Peak Hour Trip Ends	Project Impact Fee
HES 021-1(19) VT-116 & VT-2A	\$1,462	3	\$4,386
Subtotal, Base Act 145 Fee			\$4,386
10% TDM Adjustment			-\$439
Total Act 145 Impact Fee			\$3,947

Roadway Infrastructure Mitigation

As discussed in this Transportation Impact Study, the following roadway infrastructure mitigation is recommended:

- The Spear Street & Irish Hill Road intersection should be modified to include increased visibility features on the existing all-way stop control signs. Elements may include new stop signs and advanced warning signs with modern retroreflectivity sheeting, retroreflective posts on the regulatory and advance warning signs, and / or flashing beacon(s), if determined to be necessary.
- Monitor the Spear Street & Barstow Road intersection for potential conversion to all-way stop control. Conversion should include associated temporary and permanent advanced warning features; features may include portable changeable message signs, temporary flagging on new signs, permanent advance warning signs, and high conspicuity features (reflective posts, post mounted beacons).
- The proposed project should connect to the existing sidewalk network, including:
 - Extending the existing sidewalk from the current terminus to Thompson Road
 - Construction of accessible sidewalk landings at Thompson Road and the proposed site driveway
 - Installation of crosswalk features with appropriate visibility enhancements, which may include striping, advanced warning signs, and pedestrian activated rectangular rapid flashing beacons (RRFBs).
 - Conduct post-construction monitoring one year and five years after occupancy to confirm the operational performance of the transportation system.
- The proposed project should maintain sight lines at the proposed site driveways, including tree trimming and regular mowing. As the site plans develop, the site design team should avoid low growing shrubs, plantings, signs, or other features that may impact sight lines to people walking, biking, and driving at the project drive intersections with the public highways and within the project site itself.

No other roadway mitigation is recommended.

ATTACHMENTS

Attachment A – Traffic Data Documentation

Attachment B – Crash Query Documentation

Attachment C – Scenario Traffic Volumes

Attachment D – Traffic Volume Worksheets

Attachment E – Synchro Capacity Analysis Worksheets

Attachment F – Turn Lane Warrant Worksheets

Attachment G – All Way Stop Control Warrant Evaluation

Attachment H – Initial Response to Bicycle and Pedestrian Path Committee Comments

US-7 & Marsett
Shelburne VT
5/22/2025
4th Thursday

note:

Source: CountCloud

	Eastbound Marsett Rd						Westbound Marsett Rd						Northbound US-7						Southbound US-7						Pedestrians				15 Min Total	Hour Total	
	EBL Car	EBL Truck	EBT Car	EBT Truck	EBR Car	EBR Truck	WBL Car	WBL Truck	WBT Car	WBT Truck	WBR Car	WBR Truck	NBL Car	NBL Truck	NBT Car	NBT Truck	NBR Car	NBR Truck	SBL Car	SBL Truck	SBT Car	SBT Truck	SBR Car	SBR Truck	PNWR EB	PNEL WB	PSWR NB	PNWL SB			
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	7	0	5	1	0	0	11	0	6	0	5	0	0	95	8	14	2	0	1	83	12	5	0	0	0	0	0	0	255	255	
7:15 AM	10	0	8	0	0	0	18	2	5	0	2	0	1	119	11	29	0	1	1	73	9	5	0	0	0	0	0	0	294	549	
7:30 AM	14	0	8	0	0	0	22	0	7	0	15	1	2	130	9	27	1	3	0	80	6	11	0	0	0	0	0	336	885		
7:45 AM	14	0	10	1	1	1	29	0	13	1	12	0	2	121	7	28	2	4	0	81	10	14	0	0	1	0	1	350	1235		
8:00 AM	24	1	18	1	1	0	31	0	22	0	5	0	1	123	12	30	1	3	1	69	7	15	0	0	0	0	0	366	1346		
8:15 AM	26	1	11	0	0	0	17	1	18	0	1	1	2	117	17	39	0	2	0	82	11	15	0	0	0	0	0	361	1413		
8:30 AM	14	0	8	0	1	0	19	0	12	0	8	0	2	131	11	26	1	0	0	79	13	17	2	0	0	0	0	344	1421		
8:45 AM	19	0	6	0	1	0	22	0	6	0	14	0	1	102	6	26	1	4	1	55	8	9	0	0	1	0	0	281	1352		
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	986	0		
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	625	0		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	281	0		
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	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	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	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	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	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	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	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	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	0	0	0	0	0	0	0	0	0	0	0	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	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	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	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	0	0	0	0	0	0	0	0	0	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	24	0	10	0	2	0	35	0	13	0	2	0	3	95	8	53	1	2	1	123	11	18	0	0	1	0	0	0	401	401	
4:15 PM	19	0	15	0	5	0	48	0	21	0	4	0	2	106	7	38	0	4	0	136	5	10	0	0	0	0	0	0	420	821	
4:30 PM	15	0	17	0	2	0	57	0	16	0	3	0	0	120	8	50	0	13	1	124	6	14	0	0	0	0	0	0	446	1267	
4:45 PM	13	0	14	0	0	0	47	0	7	0	7	0	2	102	9	38	1	1	1	113	9	12	0	0	0	0	0	0	376	1643	
5:00 PM	18	0	11	0	1	0	39	0	9	0	8	0	0	102	6	31	0	3	1	112	7	11	0	0	0	0	0	0	359	1601	
5:15 PM	17	0	12	0	1	0	40	0	12	0	6	0	0	100	6	27	1	3	0	117	7	12	0	0	0	0	0	0	361	1542	
5:30 PM	9	0	13	0	1	0	48	0	11	0	4	0	0	72	7	26	1	5	1	105	2	9	0	0	0	0	0	0	314	1410	
5:45 PM	12	0	8	0	0	0	35	0	10	0	5	0	0	81	7	22	1	4	0	68	5	14	0	0	0	0	0	0	272	1306	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	947	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	586	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM (6AM-12PM) Peak																												1421			
PM (12PM-6PM) Peak																												1643			

AM Peak Hour
US-7 & Marsett
Shelburne VT
5/22/2025
4th Thursday

Volumes					
	EB	WB	NB	SB	
L	80	97	8	10	
T	48	66	539	352	
R	4	27	127	63	1421
Enter	132	190	674	425	1421
Exit	185	137	646	453	1421
Heavy	3.0%	1.6%	7.7%	####	7.2%
Peds	0	1	0	1	PHF
Peak Hour	7:45 AM - 8:45 AM				0.97

Irish Hill Rd & Thomas Rd
Shelburne VT
5/22/2025
4th Thursday

note:																									Source: CountCloud									
	Eastbound Irish Hill Rd										Westbound Irish Hill Rd						Northbound Thomas Rd						Southbound						Pedestrians					
	EBL	EBL	EBT	EBT	EBR	EBR	WBL	WBL	WBT	WBT	WBR	WBR	NBL	NBL	NBT	NBT	NBR	NBR	SBL	SBL	SBT	SBT	SBR	SBR	PNWR	PNEL	PSWR	PNWL	PSWL	PSER	PSL	PNER	15 Min	Hour
Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	EB	WB	NB	SB	Total	Total			
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
M	0	0	29	2	2	0	0	30	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	68	
M	0	0	63	0	1	0	0	44	2	0	0	6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	186	
M	0	0	80	1	4	1	1	61	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157	343		
M	0	0	76	2	3	0	1	75	3	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165	508		
M	0	0	92	5	4	0	0	67	1	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175	615		
M	0	0	96	3	1	1	1	60	1	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171	668		
M	0	0	55	0	1	0	1	55	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	114	625		
M	0	0	41	3	1	0	1	67	1	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	579		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	404	404		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233	233		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	119		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0</																			

AM Peak Hour

Irish Hill Rd & Thomas Rd
Shelburne VT
5/22/2025
4th Thursday

Volumes					PHF
L	EB	WB	NB	SB	
L	0	3	22	0	

Irish Hill Rd & Thompson Rd
Shelburne VT
5/29/2025
5th Thursday

note:		Source: CountCloud																																			
Eastbound Irish Hill Rd								Westbound Irish Hill Rd								Northbound								Southbound Thompson Rd								Pedestrians					
EBL	EBL	EBT	EBT	EBR	EBR	WBL	WBL	WBT	WBT	WBR	WBR	NBL	NBL	NBT	NBT	NBR	NBR	SBL	SBL	SBT	SBT	SBR	SBR	PNWR	PNEL	PSWR	PNWL	15 Min	Hour								
Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	EB	WB	NB	SB	Total	Total								
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
1	0	42	0	0	0	0	0	28	3	0	0	0	0	0	0	0	0	7	0	0	0	3	1	0	0	0	0	85	85								
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2	0	80	1	0	0	0	0	53	2	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	148	336									
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3	1	76	0	0	0	0	0	53	1	2	0	0	0	0	0	0	0	6	0	0	0	4	0	0	0	0	146	631									
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																				

AM Peak Hour

Irish Hill Rd & Thompson Rd
Shelburne VT
5/29/2025
5th Thursday

		Volumes			
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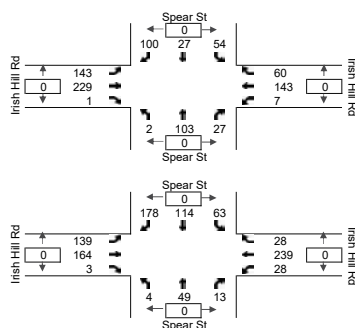
[illegible]

AM (6AM-12PM) Peak	0	0	0
PM (12PM-6PM) Peak	0	0	0

AM Peak Hour

Irish Hill Rd & Spear St
Shelburne VT
5/22/2025
4th Thursday

		Volumes				
		EB	WB	NB	SB	
L		143	7	2	54	
T		229	143	103	27	
R		1	60	27	100	896
Enter		373	210	132	181	896
Exit		310	245	306	35	896
Heavy		2.9%	3.3%	1.5%	3.9%	3.0%
Peds		0	0	0	0	PHF
Peak Hour		7:30 AM - 8:30 AM				0.90



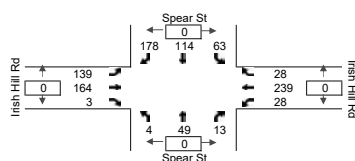
		PHF			
		EB	WB	NB	SB
L T R Appr Int	L	0.85	0.88	1.00	0.54
	T	0.71	1.00	1.00	0.96
	R	1.00	1.00	0.84	1.00
	Appr	0.76	1.00	1.00	0.91
Int		0.90			

	Heavy			
	EB	WB	NB	SB
L	2.1%	0.0%	0.0%	3.7%
T	3.1%	4.2%	1.0%	3.7%
R	####	1.7%	3.7%	4.0%
Appr	2.9%	3.3%	1.5%	3.9%
Int	3.0%			

PM Peak Hour

Irish Hill Rd & Spear St
Shelburne VT
5/22/2025
4th Thursday

		Volumes				
		EB	WB	NB	SB	
L		139	28	4	63	
T		164	239	49	114	
R		3	28	13	178	1022
Enter		306	295	66	355	1022
Exit		240	421	216	145	1022
Heavy		1.6%	0.0%	1.5%	0.3%	0.7%
Peds		0	0	0	0	PHF
Peak Hour		4:15 PM - 5:15 PM				0.92



	PHF			
	EB	WB	NB	SB
LT	0.97	0.58	1.00	1.00
TH	0.93	0.84	0.88	0.84
RT	1.00	0.88	1.00	1.00
Appr.	0.96	0.81	1.00	0.98
Int.	0.92			

	Heavy			
	EB	WB	NB	SB
L	0.7%	0.0%	0.0%	1.6%
T	2.4%	0.0%	2.0%	0.0%
R	0.0%	0.0%	0.0%	0.0%
Appr	1.6%	0.0%	1.5%	0.3%
Int	0.7%			



Turning Movement Count: 05 - Irish Hill & Spear
Triangle Farm TIS, Shelburne VT

DATE:	5/22/2025
PROJECT:	25-157
	Figure A5

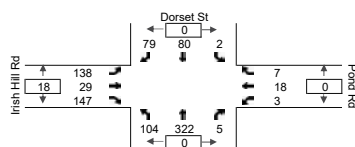
[illegible]

AM (6AM-12PM) Peak	0	0	0
PM (12PM-6PM) Peak	0	0	0

AM Peak Hour

Irish Hill Rd & Dorset St
Shelburne VT
5/22/2025
4th Thursday

		Volumes				
		EB	WB	NB	SB	
L		138	3	104	2	
T		29	18	322	80	
R		147	7	5	79	934
Enter		314	28	431	161	934
Exit		36	201	467	230	934
Heavy		2.9%	3.6%	1.2%	4.3%	2.4%
Peds		18	0	0	0	PHF
Peak Hour		7:45 AM - 8:45 AM				0.99



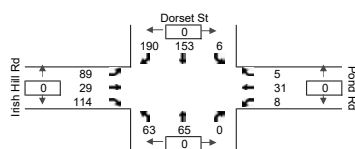
		PHF			
		EB	WB	NB	SB
L T R Appr Int	L	0.84	0.75	0.68	1.00
	T	0.91	0.64	1.00	1.00
	R	1.00	1.00	1.00	0.82
	Appr	1.00	0.78	0.95	0.91
Int		0.99			

	Heavy			
	EB	WB	NB	SB
L	0.7%	0.0%	1.9%	0.0%
T	3.4%	5.6%	0.9%	3.8%
R	4.8%	0.0%	0.0%	5.1%
Appr	2.9%	3.6%	1.2%	4.3%
Int	2.4%			

PM Peak Hour

Irish Hill Rd & Dorset St
Shelburne VT
5/22/2025
4th Thursday

		Volumes				
		EB	WB	NB	SB	
L		89	8	63	6	
T		29	31	65	153	
R		114	5	0	190	753
Enter		232	44	128	349	753
Exit		35	284	159	275	753
Heavy		1.7%	0.0%	0.8%	0.0%	0.7%
Peds		0	0	0	0	PHF
Peak Hour		4:15 PM - 5:15 PM				0.94



	PHF			
	EB	WB	NB	SB
LT	1.00	1.00	0.93	0.75
TH	1.00	1.00	1.00	0.81
RT	0.95	1.00	1.00	0.82
Appr.	1.00	1.00	1.00	0.82
Int.			0.94	

	Heavy			
	EB	WB	NB	SB
L	1.1%	0.0%	0.0%	0.0%
T	3.4%	0.0%	1.5%	0.0%
R	1.8%	0.0%		0.0%
Appr	1.7%	0.0%	0.8%	0.0%
Int			0.7%	



Turning Movement Count: 06 - Irish Hill & Dorset
Triangle Farm TIS, Shelburne VT

DATE:	5/22/2025
PROJECT:	25-157
	Figure A6

Thomas Rd & Spear St
Shelburne VT
5/22/2025
4th Thursday

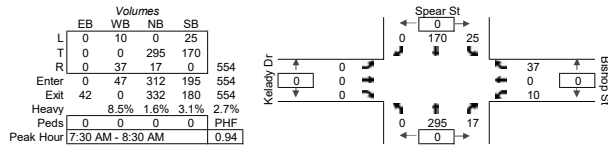
note:																									Source:				CountCloud									
	Eastbound Irish Hill Rd								Westbound								Northbound Spear St								Southbound Spear St								Pedestrians				15 Min	Hour
	EBL	EBL	EBT	EBT	EBR	EBR	WBL	WBL	WBT	WBT	WBR	WBR	NBL	NBL	NBT	NBT	NBR	NBR	SBL	SBL	SBT	SBT	SBR	SBR	PNWR	PNEL	PSWR	PNWL	PSWL	PSER	PSEL	PNER						
Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	EB	WB	NB	SB	Total	Total							
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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	1	0	0	0	2	0	0	0	0	0	0	0	0	0	37	1	0	0	0	0	9	1	3	0	0	0	0	0	0	0	0	54	163					
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	3	0	0	0	3	0	0	0	0	0	0	0	4	0	32	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	50	179					
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90						
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																						

Spear St & Bishop St
Shelburne VT
5/22/2025
4th Thursday

Source: CountCloud																																			
Eastbound Kelady Dr												Westbound Bishop St						Northbound Spear St						Southbound Spear St						Pedestrians					
EBL	EBL	EBT	EBT	EBR	EBR	WBL	WBL	WBT	WBT	WBR	WBR	NBL	NBL	NBT	NBT	NBR	NBR	SBL	SBL	SBT	SBT	SBR	SBR	PNWR	PNEL	PSWR	PNWL	15 Min	Hour						
Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	PSWB	PSER	PSEL	PNER	Total	Total						
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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0	0	0	0	0	0	1	0	0	0	5	3	0	0	26	0	4	0	0	0	14	0	0	0	0	0	0	0	53	53						
0	0	0	0	0	0	1	1	0	0	4	2	0	0	52	0	2	1	3	4	12	0	0	0	0	0	0	0	82	135						
0	0	0	0	0	0	0	0	0	0	14	1	0	0	82	0	3	0	4	0	22	1	0	0	0	0	0	0	128	263						
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0	0	0	0	0	0	1	0	0	0	6	1	0	0	58	0	1	0	6	1	40	0	0	0	0	0	0	0	114	540						
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
0	0	0	0	0	0	0	0	0																											

AM Peak Hour

Spear St & Bishop St
Shelburne VT
5/22/2025
4th Thursday



PHF

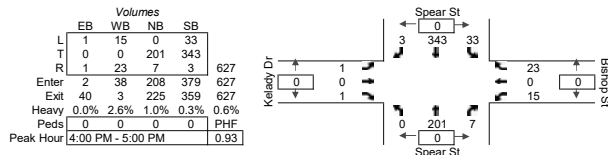
	EB	WB	NB	SB
L	1.00	0.83	1.00	0.69
T	1.00	1.00	1.00	0.82
R	1.00	0.93	0.61	1.00
Appr	1.00	0.90	1.00	0.80
Int	0.94			

Heavy

	EB	WB	NB	SB
L	10.0%			4.0%
T			1.4%	2.9%
R	8.1%	5.9%		
Appr	8.5%	1.6%	3.1%	
Int	2.7%			

PM Peak Hour

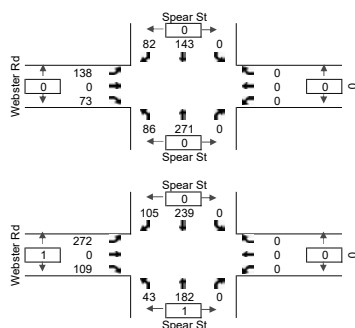
Spear St & Bishop St
Shelburne VT
5/22/2025
4th Thursday



Source:																				CountCloud																					
note:												Eastbound Webster Rd								Westbound				Northbound Spear St						Southbound Spear St						Pedestrians				15 Min Total	Hour Total
EBL	EBL	EBT	EBT	EBR	EBR	WBL	WBL	WBT	WBT	WBR	WBR	NBL	NBL	NBT	NBT	NBR	NBR	SBL	SBL	SBT	SBT	SBR	SBR	PNWR	PNEL	PSWR	PNWL	PSWL	PSER	PSEL	PNER										
Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	EB	WB	NB	SB	EB	WB	NB	SB										
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
15	0	0	0	2	2	0	0	0	0	0	0	4	3	32	0	0	0	0	0	0	11	0	7	0	0	0	0	0	0	0	0	0	76								
28	0	0	0	8	3	0	0	0	0	0	0	15	3	42	1	0	0	0	0	17	2	23	0	0	0	0	0	0	0	0	0	0	142								
34	2	0	0	9	2	0	0	0	0	0	0	22	2	81	0	0	0	0	0	27	1	21	2	0	0	0	0	0	0	0	0	203									
36	1	0	0	5	2	0	0	0	0	0	0	24	3	59	0	0	0	0	0	42	1	25	1	0	0	0	0	0	0	0	0	199									
28	0	0	0	18	2	0	0	0	0	0	0	13	3	51	0	0	0	0	0	42	0	20	0	0	0	0	0	0	0	0	0	177									
37	0	0	0	34	1	0	0	0	0	0	0	17	2	80	0	0	0	0	0	29	1	13	0	0	0	0	0	0	0	0	0	0	214								
39	1	0	0	13	1	0	0	0	0	0	0	9	0	62	1	0	0	0	0	39	0	13	0	0	0	0	0	0	0	0	0	0	178								
21	0	0	0	10	1	0	0	0	0	0	0	19	0	44	1	0	0	0	0	24	0	28	0	0	0	0	0	0	0	0	0	0	148								
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0	0	0	0	0																																					

	0
7	793
8	950

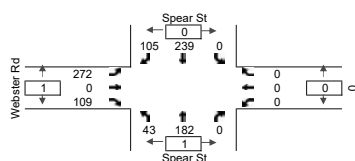
		Volumes				
		EB	WB	NB	SB	
L		138	0	86	0	
T		0	0	271	143	
R		73	0	0	82	793
Enter		211	0	357	225	793
Exit		0	168	409	216	793
Heavy		4.7%		2.8%	2.7%	3.3%
Peds		0	0	0	0	PHF
Peak Hour		7:30 AM - 8:30 AM				0.93



		PHF			
		EB	WB	NB	SB
L T R Appr Int	L	0.93	1.00	1.00	1.00
	T	1.00	1.00	0.85	1.00
	R	0.52	1.00	1.00	1.00
	Appr	0.73	1.00	0.90	1.00
Int		0.93			

	Heavy			
	EB	WB	NB	SB
L	2.2%		11.6%	
T			0.0%	2.1%
R	9.6%			3.7%
Appr	4.7%		2.8%	2.7%
Int		3.3%		

		Volumes				
		EB	WB	NB	SB	
L	T	272	0	43	0	
	R	0	0	182	239	
		109	0	0	105	950
Enter		381	0	225	344	950
Exit		0	148	454	348	950
Heavy		0.0%		1.8%	0.3%	0.5%
Peds		1	0	1	0	PHF
Peak Hour		4:30 PM - 5:30 PM				0.88



	PHF			
	EB	WB	NB	SB
LT	1.00	1.00	0.67	1.00
TH	1.00	1.00	0.84	0.80
RT	1.00	1.00	1.00	0.75
Appr.	1.00	1.00	0.80	0.78
Int.			0.88	

	Heavy			
	EB	WB	NB	SB
L	0.0%		7.0%	
T			0.5%	0.4%
R	0.0%			0.0%
Appr	0.0%		1.8%	0.3%
Int		0.5%		

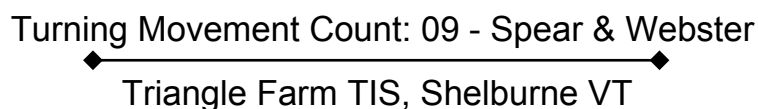


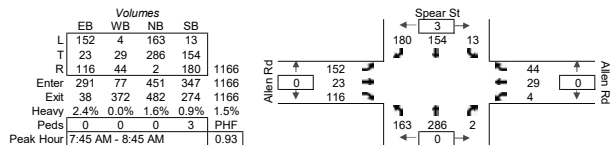
Figure A9

Spear St & Allen Rd
Shelburne VT
5/29/2025
5th Thursday

note:																									Source:				CountCloud									
	Eastbound Allen Rd								Westbound Allen Rd								Northbound Spear St								Southbound Spear St								Pedestrians					
	EBL	EBL	EBT	EBT	EBR	EBR	WBL	WBL	WBT	WBT	WBR	WBR	NBL	NBL	NBT	NBT	NBR	NBR	SBL	SBL	SBT	SBT	SBR	SBR	PNWVR	PNEL	PSWVR	PNWL	PSWVR	PSER	PSWL	PNELR	15 Min	Hour				
Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	EB	WB	NB	SB	Total	Total							
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	17	0	2	0	10	0	1	0	4	0	2	0	19	0	33	0	0	0	1	0	14	1	14	0	0	0	0	0	0	2	118	118						
	24	0	2	0	16	5	1	0	5	1	11	0	31	1	53	0	1	0	0	1	21	1	18	0	0	0	0	0	0	1	192	310						
	35	0	1	0	17	0	0	0	11	0	10	0	33	3	103	0	1	1	0	34	1	31	2	0	0	0	0	0	2	284	594							
	33	0	7	0	13	2	2	0	10	0	12	0	34	1	75	0	0	0	3	0	47	0	44	0	0	0	0	0	0	283	877							
	41	1	6	0	31	1	0	0	7	0	10	0	39	0	50	1	1	0	4	0	42	0	48	2	0	0	0	0	0	284	1043							
	31	1	7	0	37	1	0	0	12	0	9	0	51	2	70	0	0	0	2	0	34	1	55	0	0	0	0	0	2	313	1164							
	45	0	3	0	30	1	2	0	0	0	13	0	34	2	89	1	1	0	4	0	30	0	31	0	0	0	0	0	1	286	1166							
	36	0	3	1	16	0	0	0	2	0	13	1	38	0	63	0	0	0	2	0	26	1	31	0	0	0	0	0	0	233	1116							
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	832						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	519						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																				

AM Peak Hour

Spear St & Allen Rd
Shelburne VT
5/29/2025
5th Thursday



US-7 & Falls Rd
Shelburne VT
7/11/2024
2nd Thursday

note:

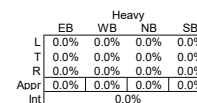
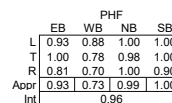
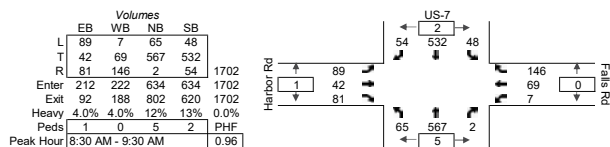
Source:

VTrans MS2

Time	Eastbound						Westbound						Northbound						Southbound						Pedestrians				15 Min	Hour Total
	Harbor Rd						Falls Rd						US-7						US-7						PSWV		PNEL			
	EBL	EBL	EBT	EBT	EBR	EBR	WBL	WBL	WBT	WBT	WBR	WBR	NBL	NBL	NBT	NBT	NBR	NBR	SBL	SBL	SBT	SBT	SBR	SBR	PSWB	PSER	PSEL	PNER		
	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck
6:00 AM	4	0	3	0	1	0	0	0	2	0	9	0	4	0	62	0	0	0	7	0	49	0	2	0	0	0	0	0	0	143
6:05 AM	5	0	0	0	3	0	1	0	5	0	11	0	2	0	98	0	0	0	3	0	66	0	0	0	2	0	0	0	1	194
6:30 AM	6	0	1	0	5	0	0	0	13	0	13	0	5	0	92	0	0	0	5	0	92	0	8	0	0	0	0	0	0	232
6:45 AM	9	0	2	0	7	4	0	4	19	0	22	0	8	0	89	1	4	7	7	86	3	12	0	2	12	0	0	0	0	801
7:00 AM	8	0	4	0	9	0	0	0	8	0	23	0	6	0	120	0	0	0	11	0	100	0	4	0	0	0	0	0	0	291
7:15 AM	10	0	2	0	4	0	2	0	5	0	29	0	5	0	112	0	0	0	5	0	93	0	3	0	0	0	0	0	0	270
7:30 AM	10	0	2	0	5	0	1	0	3	0	34	0	9	0	158	0	0	0	7	0	77	0	6	0	0	0	0	0	0	312
7:45 AM	13	0	5	0	9	0	0	0	8	0	35	0	12	0	126	0	0	0	16	0	104	0	2	0	0	0	0	0	0	330
8:00 AM	11	0	7	0	8	0	0	0	0	8	0	26	0	8	0	153	0	0	0	12	0	87	0	8	0	1	0	1	0	328
8:15 AM	13	0	5	0	12	0	2	0	13	0	49	0	19	0	150	0	0	0	19	0	111	0	13	0	0	0	0	0	0	406
8:30 AM	23	0	8	0	12	0	2	0	22	0	125	0	25	0	145	0	0	0	11	0	125	0	15	0	0	0	1	1	0	1444
8:45 AM	13	0	6	0	25	0	3	0	19	0	35	0	21	0	122	0	0	0	14	0	140	0	15	0	0	0	0	0	0	416
9:00 AM	26	0	16	0	27	0	0	0	18	0	32	0	17	0	138	0	1	0	15	0	134	0	11	0	0	0	2	0	0	435
9:15 AM	16	0	12	0	17	0	2	0	10	0	27	0	12	0	162	0	1	0	6	0	133	0	9	0	1	0	1	0	1	407
9:30 AM	20	0	7	0	9	0	0	0	15	0	47	0	9	0	140	0	2	0	18	0	112	0	15	0	3	0	1	1	1	394
9:45 AM	21	0	6	0	11	0	3	0	12	0	51	0	15	0	115	0	0	0	20	0	110	0	2	0	2	0	2	5	5	366
10:00 AM	9	0	7	0	6	0	3	0	8	0	29	0	7	0	98	0	0	0	23	0	137	0	19	0	1	1	4	1	1	346
10:15 AM	6	0	11	0	10	0	1	0	10	0	30	0	14	0	130	0	0	0	27	0	131	0	9	0	1	1	6	2	380	
10:30 AM	13	0	4	0	11	5	3	0	5	10	51	0	12	0	147	0	1	0	20	0	147	0	10	1	0	1	1	3	1	383
10:45 AM	13	0	5	0	6	0	0	0	10	0	32	0	12	0	128	0	0	0	20	0	115	0	6	0	1	2	3	0	341	
11:00 AM	7	0	5	0	9	0	2	0	12	0	47	0	3	0	123	0	1	0	34	0	120	0	8	0	2	0	0	5	374	
11:15 AM	11	0	9	0	15	0	5	0	8	0	43	0	12	0	127	0	0	0	25	0	114	0	13	0	0	0	2	2	382	
11:30 AM	6	0	14	0	15	0	2	0	8	0	41	0	7	0	140	0	1	0	33	0	143	0	10	1	0	1	0	1	0	420
11:45 AM	23	0	15	0	17	0	3	0	21	0	38	0	20	0	114	0	1	0	25	0	128	0	15	0	3	0	3	2	6	420
12:00 PM	16	0	14	0	23	0	4	0	19	0	37	0	17	0	130	0	1	0	27	0	109	0	12	0	0	1	1	4	409	
12:15 PM	19	0	19	0	10	0	3	0	19	0	10	0	5	0	133	0	1	0	23	0	139	0	6	0	1	1	11	3	1	1680
12:30 PM	13	0	10	0	16	0	4	0	7	0	25	0	10	0	133	0	1	0	31	0	131	0	12	0	0	1	2	2	423	
12:45 PM	11	0	10	0	13	0	3	0	14	0	48	0	14	0	141	0	0	0	30	0	141	0	6	0	4	0	0	6	431	
1:00 PM	8	0	8	0	11	0	2	0	10	0	32	0	5	0	130	0	2	0	20	0	126	0	8	0	0	2	2	5	362	
1:15 PM	15	0	7	0	13	0	5	0	15	0	34	0	11	0	123	0	1	0	26	0	110	0	3	0	0	0	7	2	363	
1:30 PM	9	0	6	0	14	0	5	0	4	0	38	0	9	0	123	0	0	0	34	0	162	0	8	0	0	3	3	1	412	
1:45 PM	4	0	10	0	21	0	5	0	19	0	30	0	8	0	123	0	0	0	17	0	116	0	7	0	4	0	1	0	370	
2:00 PM	18	0	14	0	13	0	4	0	12	0	40	0	13	0	136	0	1	0	2	0	138	0	12	0	0	0	0	0	0	1567
2:15 PM	13	0	9	0	6	0	3	0	20	0	29	0	12	0	122	0	4	0	31	0	141	0	6	0	2	0	3	0	393	
2:30 PM	15	0	9	0	13	0	1	0	14	0	40	0	5	0	118	0	2	0	22	0	144	0	8	0	2	2	4	3	391	
2:45 PM	13	0	12	0	15	0	3	0	9	0	44	0	11	0	142	0	0	0	16	0	126	0	15	0	3	1	3	3	406	
3:00 PM	19	0	16	0	17	0	5	0	6	0	51	0	10	0	113	0	2	0	24	0	129	0	15	0	0	0	1	11	407	
3:15 PM	19	0	10	0	14	0	10	0	23	0	41	0	6	0	130	0	1	0	23	0	153	0	7	0	1	3	2	417		
3:30 PM	19	0	14	0	20	0	13	0	33	0	42	0	15	0	150	0	1	0	14	0	142	0	9	0	2	1	3	442		
3:45 PM	12	0	7	0	21	0	3	0	17	0	40	0	9	0	153	0	4	0	37	0	148	0	6	0	2	0	0	0	459	
4:00 PM	11	0	13	0	13	0	3	0	9	0	48	0	4	0	141	0	3	0	29	0	154	0	14	0	0	0	1	4	442	
4:15 PM	7	0	9	0	18	0	1	0	16	0	35	0	7	0	140	0	1	0	24	0	156	0	16	0	0	0	1	5	430	
4:30 PM	15	0	14	0	15	0	0	0	22	0	33	0	12	0	148	0	1	0	30	0	145	0	18	0	0	0	0	1	453	
4:45 PM	27	0	16	0	16	0	1	0	26	0	36	0	18	0	122	0	1	0	21	0	129	0	24	0	1	0	1	11	437	
5:00 PM	24	0	18	0	10	0	4	0	19	0	36	0	11	0	138	0	1	0	24	0	144	0	19	0	0	0	1	448		
5:15 PM	17	0	17	0	9	0	5	0	17	0	14	0	8	0	154	0	1	0	17	0	154	0	9	0	2	1	2	1	1616	
5:30 PM	10	0	14	0	11	0	3	0	10	0	27	0	7	0	108	0	1	0	40	0	150	0	6	0	2	0	0	1	387	
5:45 PM	9	0	8	0	8	0	1	0	10	0	23	0	3	0	126	0	0	0	32	0	123	0	13	0	0	0	3	8	356	
6:00 PM	8	0	11	0	6	0	1	0	17	0	26	0	15	0	102	0	2	0	28	0	107	0	31	0	0	0	1	4	354	
6:15 PM	31	0	5	0	9	0	0	0	14	0	17	0	6	0	78	0	0	0	25	0	99	0	36	0	1	0	3	8	320	
6:30 PM	48	0	15	0	14	0	0	0	6	0	27	0	5	0	79	0	1	0	25	0	94	0	6	0	0	0	0	0	320	
6:45 PM	28	0	9	0	10	0	1	0	7	0	18	0	5	0	86	0	0	0	20	0	89	0	9	0	0	0	0	0	282	
AM (6AM-12PM) Peak																														1702
PM (12PM-6PM) Peak																														1784

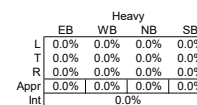
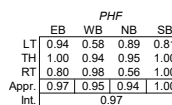
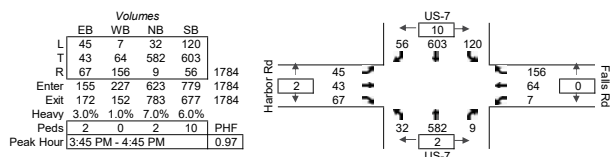
AM Peak Hour

US-7 & Falls Rd
Shelburne VT
7/11/2024
2nd Thursday



PM Peak Hour

US-7 & Falls Rd
Shelburne VT
7/11/2024
2nd Thursday



Turning Movement Count: 12 - US-7 & Falls
Triangle Farm TIS, Shelburne VT

DATE: 07/11/2024

PROJECT:
25-157

Figure A12

	Enter Start Date	5/26/2025			
Date	5/26/2025	05/27/2025	05/28/2025	05/29/2025	05/30/2025
Weekday	Mon	Tue	Wed	Thu	Fri
NB	0	0	189	2598	2470
SB	0	Incomplete	236	2714	2808
Combined	0	Data	425	5312	5278
DOW Factors	1.057	0.973	0.951	0.936	0.902
AADTs	0	0	404	4972	4761

Date	06/02/2025	06/03/2025	06/04/2025	06/05/2025	06/06/2025
Weekday	Mon	Tue	Wed	Thu	Fri
NB	2294	2456	2468	2381	2409
SB	2508	2762	2751	2629	2623
Combined	4802	5218	5219	5010	5032
DOW Factors	1	0.954	0.955	0.925	0.923
AADTs	4802	4978	4984	4634	4645

Date	06/09/2025	06/10/2025	06/11/2025	06/12/2025	06/13/2025
Weekday	Mon	Tue	Wed	Thu	Fri
NB	2341	2347	2694	2666	2676
SB	2625	2631	3132	2999	Incomplete
Combined	4966	4978	5826	5665	Data
DOW Factors	1	0.954	0.955	0.925	0.923
AADTs	4966	4749	5564	5240	5110

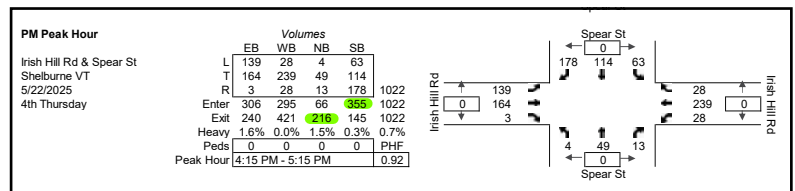
Observation Period: >14 days (5/28 - 6/15)

Average AADT = 4,950 vehicles per day

Highest Observed Midweek Volume:

6/11/2025 @ 4 PM - 600 vehicles per hour

**USE THIS DHV
ESTIMATE: 600 vph**



TMC Peak Hour = 571 vph

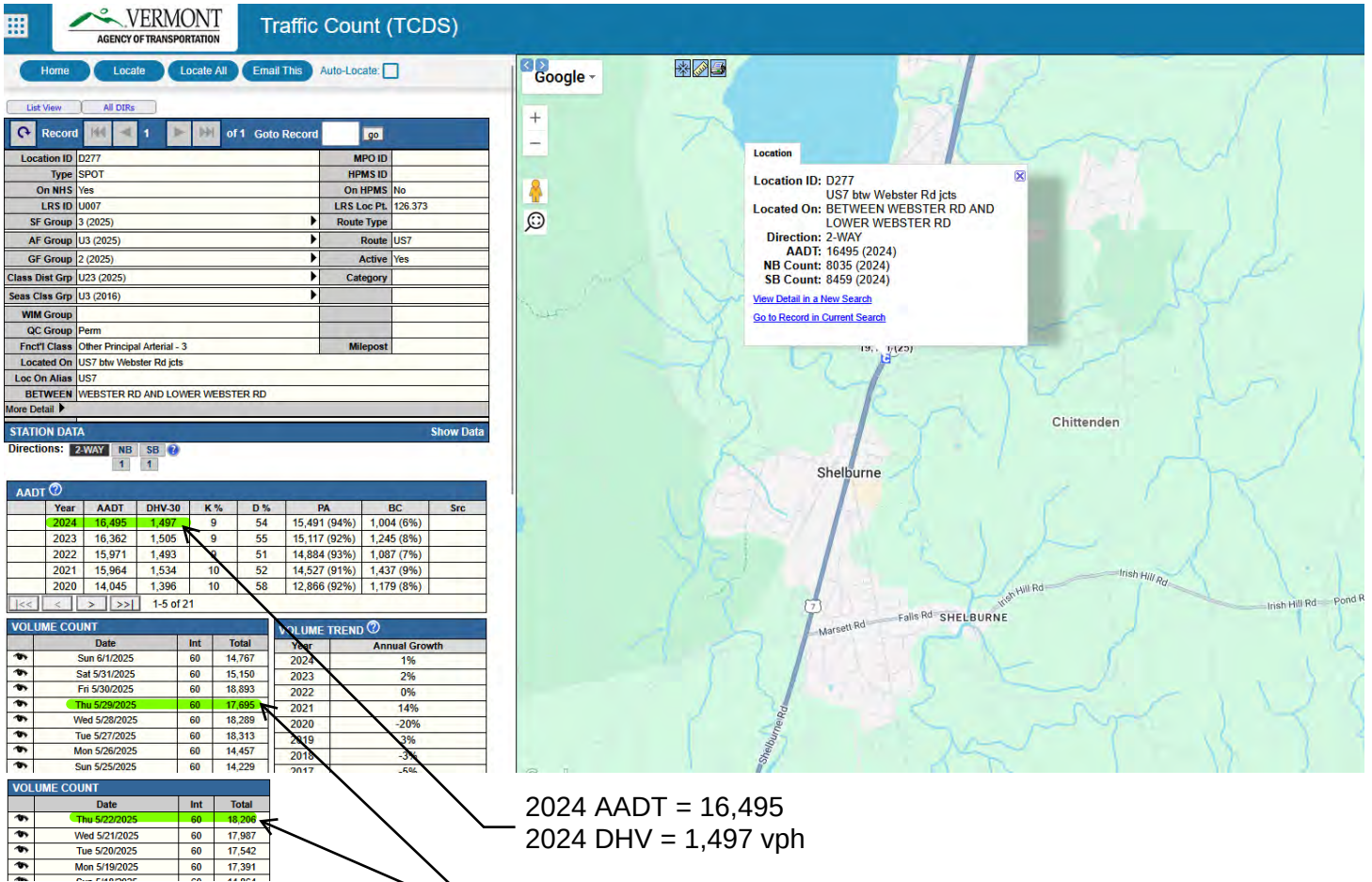
2023 Redbook, Page 26: 4,950 AADT = 528 vph predicted DHV

Predicted DHV by Seasonal Factor Group by AADT, 2023						
AADT	Rural Interstate SF1	Rural Non-Interstate SF2	Urban SF3	Summer Recreational SF4	Summer/Winter Recreational SF5	Summer/Winter Recreational TH SF6
1	2	3	4	5	6	
4900	604	558	522	657	690	1142
5000	616	569	533	670	704	1165



DHV Documentation: Spear Street
Triangle Farm TIS, Shelburne VT

DATE: 9/16/2025
PROJECT: 25-157
Figure A13



2024 AADT = 16,495
2024 DHV = 1,497 vph

volumes on 5/22/25 and 5/29/25 were above 2025 AADT →
representative of peak traffic volumes

For Project:	Triangle Farm Shelburne				
Project Notes:	6529 Spear St, Shelburne VT44°22'47.5"N 73°12'07.9"W				
Location/Name:	Southbound				
Report Generated:	7/17/2025	11:33:40 AM			
Speed Intervals	1 MPH				
Time Intervals	Instant				
Traffic Report From	5/28/2025	7:00:00 PM	through	6/15/2025	3:59:59 AM
85th Percentile Speed	44 MPH				
85th Percentile Vehicles	36366				
Max Speed	80 MPH	on	6/6/2025	10:29:25 PM	
Total Vehicles	42783				
AADT:	2462				

Volumes - weekly counts

Time	5 Day	7 Day
Average Daily	2568	2287
AM Peak	8:00 AM 203	163
PM Peak	4:00 PM 342	286

Speed

Speed Limit:	35	
85th Percentile Speed:	44	
50th Percentile Speed:	40	
10 MPH Pace Interval:	35.0 MPH	45.0 MPH
Average Speed:	39.91	

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Count over limit	4567	4744	5379	7203	7340	5369	3065
% over limit	89.0	88.0	87.9	86.3	88.5	88.4	89.3
Avg Speeder	40.9	40.8	40.8	40.8	40.8	40.9	41.1
Avg Speed	40.0	39.9	39.8	39.7	39.9	40.0	40.2

Class Counts

	Number	%
VEH_SM	423	1
VEH_MED	41122	96.1
VEH_LG	1238	2.9
[VEH_SM=motorcycle,	VEH_MED = sedan,	VEH_LG = truck]

Peak observed midweek volume:
Wednesday 6/11/2025 4 PM - 5 PM
Highlighted in green
NB = 262
SB = 337
Total = 599
Round to 600

	5/26/2025	to	6/1/2025							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week	Weekend	Week Day 85%
Hour	5/26/2025	5/27/2025	5/28/2025	5/29/2025	5/30/2025	5/31/2025	6/1/2025	Day Avg	Avg	Avg Speed
0 - 1	*	*	*	8	12	10	6	10	8	43
1 - 2	*	*	*	3	5	5	2	4	3.5	46.5
2 - 3	*	*	*	2	1	2	5	1.5	3.5	39.5
3 - 4	*	*	*	0	0	0	0	0	0	0
4 - 5	*	*	*	4	1	3	2	2.5	2.5	40
5 - 6	*	*	*	13	5	2	4	9	3	43.75
6 - 7	*	*	*	39	33	11	7	36	9	44.5
7 - 8	*	*	*	123	120	24	29	121.5	26.5	43.4
8 - 9	*	*	*	194	204	57	51	199	54	43.9
9 - 10	*	*	*	143	131	102	82	137	92	43.35
10 - 11	*	*	*	145	156	130	113	150.5	121.5	42.7
11 - 12	*	*	*	140	162	148	132	151	140	42.25
12 - 13	*	*	*	176	148	167	185	162	176	43.7
13 - 14	*	*	*	165	189	150	169	177	159.5	42.95
14 - 15	*	*	*	215	226	116	149	220.5	132.5	42.55
15 - 16	*	*	*	293	345	136	142	319	139	43.25
16 - 17	*	*	*	312	343	119	139	327.5	129	43.65
17 - 18	*	*	*	304	279	135	163	291.5	149	43.2
18 - 19	*	*	*	171	166	83	88	168.5	85.5	44.3
19 - 20	*	*	68	91	107	57	90	88.67	73.5	44.33
20 - 21	*	*	101	77	86	56	52	88	54	42.07
21 - 22	*	*	40	54	45	53	29	46.33	41	44.37
22 - 23	*	*	14	32	30	25	16	25.33	20.5	43.9
23 - 24	*	*	13	10	14	21	6	12.33	13.5	45.67
Totals	0	0	236	2714	2808	1612	1661			
% of Total	0%	0%	2.61%	30.05%	31.09%	17.85%	18.39%			

	6/2/2025	to	6/8/2025							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week	Weekend	Week Day 85%
Hour	6/2/2025	6/3/2025	6/4/2025	6/5/2025	6/6/2025	6/7/2025	6/8/2025	Day Avg	Avg	Avg Speed
0 - 1	9	9	13	5	6	19	16	8.4	17.5	46.7
1 - 2	0	3	2	6	5	3	7	3.2	5	44.75
2 - 3	3	1	3	1	1	2	2	1.8	2	37.6
3 - 4	1	0	1	0	1	0	0	0.6	0	41
4 - 5	1	1	0	1	0	1	2	0.6	1.5	40
5 - 6	5	5	11	9	10	4	3	8	3.5	43.8
6 - 7	31	33	32	34	28	14	19	31.6	16.5	45.1
7 - 8	121	134	120	123	130	41	52	125.6	46.5	43.42
8 - 9	186	214	214	211	195	67	74	204	70.5	43.44
9 - 10	115	142	143	114	134	137	101	129.6	119	42.44
10 - 11	138	115	128	122	98	179	125	120.2	152	42.76
11 - 12	146	159	145	152	188	233	148	158	190.5	42.66
12 - 13	154	186	185	148	162	237	173	167	205	43.46
13 - 14	148	188	158	172	193	194	149	171.8	171.5	42.94
14 - 15	186	218	205	215	222	167	174	209.2	170.5	42.56
15 - 16	257	298	277	287	314	197	157	286.6	177	43
16 - 17	339	365	350	329	321	160	151	340.8	155.5	43.28
17 - 18	271	282	306	276	228	128	124	272.6	126	43.42
18 - 19	159	154	172	157	126	103	92	153.6	97.5	43.82
19 - 20	96	105	107	101	81	92	77	98	84.5	43.88
20 - 21	61	79	86	74	63	79	65	72.6	72	43.42
21 - 22	44	34	51	60	56	90	22	49	56	42.3
22 - 23	20	23	28	21	33	31	13	25	22	44.5
23 - 24	17	14	14	11	28	18	10	16.8	14	42.76
Totals	2508	2762	2751	2629	2623	2196	1756			
% of Total	14.56%	16.03%	15.97%	15.26%	15.23%	12.75%	10.19%			

	6/9/2025	to	6/15/2025							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week	Weekend	Week Day 85%
Hour	6/9/2025	6/10/2025	6/11/2025	6/12/2025	6/13/2025	6/14/2025	6/15/2025	Day Avg	Avg	Avg Speed
0 - 1	5	7	14	7	7	5	9	8	7	43.3
1 - 2	2	3	1	3	3	4	1	2.4	2.5	43.8
2 - 3	1	1	1	1	0	6	6	0.8	6	42
3 - 4	2	0	0	0	1	2	1	0.6	1.5	48
4 - 5	2	3	1	2	3	1	*	2.2	1	44.4
5 - 6	9	8	17	9	13	4	*	11.2	4	42.7
6 - 7	32	33	44	32	32	17	*	34.6	17	43.46
7 - 8	125	130	133	148	114	31	*	130	31	43.76
8 - 9	216	205	258	175	142	72	*	199.2	72	43.5
9 - 10	116	117	145	126	144	109	*	129.6	109	42.64
10 - 11	122	115	146	139	130	153	*	130.4	153	43.14
11 - 12	165	111	173	186	188	212	*	164.6	212	42.94
12 - 13	153	136	185	220	190	213	*	176.8	213	42.72
13 - 14	164	155	169	202	195	223	*	177	223	43.54
14 - 15	184	223	247	219	222	275	*	219	275	43.12
15 - 16	288	311	339	315	306	232	*	311.8	232	43.16
16 - 17	333	343	337	358	383	153	*	350.8	153	43.3
17 - 18	322	305	313	372	278	140	*	318	140	43.3
18 - 19	156	137	169	179	187	112	*	165.6	112	43.54
19 - 20	98	105	115	106	118	92	*	108.4	92	43.78
20 - 21	67	68	118	91	90	93	*	86.8	93	43
21 - 22	26	54	142	69	66	67	*	71.4	67	44.26
22 - 23	23	42	43	28	26	32	*	32.4	32	45
23 - 24	14	19	22	12	22	15	*	17.8	15	46.9
Totals	2625	2631	3132	2999	2860	2263	17			
% of Total	15.88%	15.92%	18.95%	18.15%	17.31%	13.69%	0.1%			

For Project:	Triangle Farm Shelburne				
Project Notes:	6529 Spear St, Shelburne VT44°22'47.5"N 73°12'07.9"W				
Location/Name:	Northbound				
Report Generated:	7/17/2025	11:33:39 AM			
Speed Intervals	1 MPH				
Time Intervals	Instant				
Traffic Report From	5/28/2025	7:00:00 PM	through	6/15/2025	2:59:59 AM
85th Percentile Speed	46 MPH				
85th Percentile Vehicles	32666				
Max Speed	79 MPH	on	6/8/2025	6:36:32 PM	
Total Vehicles	38431				
AADT:	2217				

Volumes - weekly counts

Time	5 Day	7 Day
Average Daily	2313	2054
AM Peak	8:00 AM 271	213
PM Peak	3:00 PM 227	202

Speed

Speed Limit:	35	
85th Percentile Speed:	46	
50th Percentile Speed:	41	
10 MPH Pace Interval:	36.0 MPH	46.0 MPH
Average Speed:	41.53	

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Count over limit	4405	4501	4986	7012	7109	4980	2906
% over limit	95.0	93.7	93.2	91.7	94.1	93.0	94.1
Avg Speeder	42.3	42.0	42.2	41.9	42.2	42.3	42.4
Avg Speed	41.9	41.5	41.5	41.2	41.6	41.6	41.7

Class Counts

	Number	%
VEH_SM	127	0.3
VEH_MED	37574	97.8
VEH_LG	730	1.9
[VEH_SM=motorcycle,	VEH_MED = sedan,	VEH_LG = truck]

	5/26/2025	to	6/1/2025							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week	Weekend	Week Day 85%
Hour	5/26/2025	5/27/2025	5/28/2025	5/29/2025	5/30/2025	5/31/2025	6/1/2025	Day Avg	Avg	Avg Speed
0 - 1	*	*	*	7	4	1	3	5.5	2	48.5
1 - 2	*	*	*	1	0	3	1	0.5	2	47
2 - 3	*	*	*	1	3	0	1	2	0.5	43
3 - 4	*	*	*	0	2	2	0	1	1	55
4 - 5	*	*	*	5	8	6	6	6.5	6	42.25
5 - 6	*	*	*	34	26	7	7	30	7	45.5
6 - 7	*	*	*	79	73	22	16	76	19	46.7
7 - 8	*	*	*	259	229	68	34	244	51	45.75
8 - 9	*	*	*	294	256	73	52	275	62.5	45.55
9 - 10	*	*	*	195	170	122	103	182.5	112.5	44.9
10 - 11	*	*	*	165	147	127	101	156	114	45.4
11 - 12	*	*	*	164	144	135	121	154	128	45.6
12 - 13	*	*	*	180	147	117	152	163.5	134.5	44.75
13 - 14	*	*	*	185	129	112	168	157	140	44.2
14 - 15	*	*	*	173	168	102	163	170.5	132.5	44.9
15 - 16	*	*	*	212	274	106	123	243	114.5	45.3
16 - 17	*	*	*	186	215	83	138	200.5	110.5	46.15
17 - 18	*	*	*	199	184	107	95	191.5	101	45.85
18 - 19	*	*	*	100	102	69	72	101	70.5	46.05
19 - 20	*	*	63	66	74	51	61	67.67	56	45.93
20 - 21	*	*	70	57	52	27	34	59.67	30.5	44.47
21 - 22	*	*	34	19	44	27	17	32.33	22	45.4
22 - 23	*	*	15	13	11	13	10	13	11.5	49.67
23 - 24	*	*	7	4	8	4	6	6.33	5	47.83
Totals	0	0	189	2598	2470	1384	1484			
% of Total	0%	0%	2.33%	31.98%	30.4%	17.03%	18.26%			

	6/2/2025	to	6/8/2025							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week	Weekend	Week Day 85%
Hour	6/2/2025	6/3/2025	6/4/2025	6/5/2025	6/6/2025	6/7/2025	6/8/2025	Day Avg	Avg	Avg Speed
0 - 1	1	4	2	4	2	2	3	2.6	2.5	48.6
1 - 2	1	1	0	2	4	2	2	1.6	2	42.5
2 - 3	1	1	0	1	1	0	2	0.8	1	45.25
3 - 4	1	1	0	1	1	3	3	0.8	3	54.5
4 - 5	3	8	7	1	8	4	5	5.4	4.5	43.4
5 - 6	27	31	38	33	20	6	5	29.8	5.5	45.2
6 - 7	83	86	90	103	78	24	24	88	24	46.46
7 - 8	217	262	218	223	192	73	33	222.4	53	45.4
8 - 9	254	266	330	276	270	96	57	279.2	76.5	44.96
9 - 10	171	162	143	173	161	115	122	162	118.5	44.86
10 - 11	137	142	130	131	131	148	120	134.2	134	45.2
11 - 12	148	132	132	144	144	206	144	140	175	43.72
12 - 13	132	148	135	155	161	194	120	146.2	157	44.48
13 - 14	137	150	141	132	191	165	141	150.2	153	44.68
14 - 15	139	144	164	170	175	143	171	158.4	157	45.16
15 - 16	211	218	244	235	267	139	168	235	153.5	45.06
16 - 17	203	227	238	204	179	154	148	210.2	151	45.36
17 - 18	183	205	207	191	165	141	98	190.2	119.5	45.12
18 - 19	107	110	92	67	100	104	79	95.2	91.5	45.54
19 - 20	60	67	59	47	68	72	54	60.2	63	45.8
20 - 21	46	56	61	48	30	64	47	48.2	55.5	46.3
21 - 22	19	15	28	26	30	43	31	23.6	37	45.8
22 - 23	7	13	8	11	17	23	12	11.2	17.5	45.6
23 - 24	6	7	1	3	14	15	6	6.2	10.5	48.8
Totals	2294	2456	2468	2381	2409	1936	1595			
% of Total	14.76%	15.81%	15.88%	15.32%	15.5%	12.46%	10.26%			

	6/9/2025	to	6/15/2025							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week	Weekend	Week Day 85%
Hour	6/9/2025	6/10/2025	6/11/2025	6/12/2025	6/13/2025	6/14/2025	6/15/2025	Day Avg	Avg	Avg Speed
0 - 1	1	4	4	5	5	4	6	3.8	5	47.1
1 - 2	2	2	1	2	2	3	0	1.8	1.5	47.2
2 - 3	1	2	1	1	2	1	2	1.4	1.5	44.4
3 - 4	2	1	2	3	3	3	*	2.2	3	58.2
4 - 5	9	6	6	3	6	3	*	6	3	41.2
5 - 6	31	32	31	31	28	2	*	30.6	2	44.36
6 - 7	70	88	94	96	60	32	*	81.6	32	46.7
7 - 8	225	245	242	232	200	56	*	228.8	56	45.16
8 - 9	267	254	281	274	224	92	*	260	92	44.7
9 - 10	164	160	177	187	149	145	*	167.4	145	44.36
10 - 11	157	144	169	162	159	168	*	158.2	168	44.94
11 - 12	147	127	137	179	155	164	*	149	164	45.1
12 - 13	126	133	170	171	244	210	*	168.8	210	44.78
13 - 14	125	132	153	140	247	203	*	159.4	203	44.98
14 - 15	144	152	187	175	203	186	*	172.2	186	45.02
15 - 16	226	241	204	192	224	154	*	217.4	154	45.12
16 - 17	222	214	262	234	245	179	*	235.4	179	45.24
17 - 18	220	174	269	218	205	149	*	217.2	149	44.98
18 - 19	88	96	123	116	119	100	*	108.4	100	45.7
19 - 20	53	67	70	112	73	75	*	75	75	45.44
20 - 21	29	35	53	82	55	47	*	50.8	47	45.24
21 - 22	17	23	29	30	42	30	*	28.2	30	45.7
22 - 23	9	8	20	14	21	19	*	14.4	19	46.8
23 - 24	6	7	9	7	5	10	*	6.8	10	51
Totals	2341	2347	2694	2666	2676	2035	8			
% of Total	15.85%	15.89%	18.24%	18.05%	18.12%	13.78%	0.05%			

ObjectID	Mapped	Crash Date	City/Town	Address	AOT Route	Crash Type	Collision Direction	Weather	Road Group	Report Number	Reporting Agency	Road Group ID	AOT Actual Milepoint	Animal	Time of Day
5926629		March 17, 2021 at 6:20 AM	Shelburne	138 Steeplebush Rd	TOWN ROAD 0080	Property Damage Only	Other - Explain in Narrative	Clear	City, Village or Urban Comp	21SH01900	Shelburne PD.	6	999.99	None/Other	Day
7628600		December 31, 2024 at 6:55 AM	Shelburne	2-20 Church St	TOWN ROAD 0015	Property Damage Only			Street or Town Highways in F	24SH004506	Shelburne PD.	5	999.99	None/Other	Day
6534866		April 17, 2022 at 3:38 PM	Shelburne	419 Hillside Terrace	TOWN ROAD 0053	Property Damage Only	Other - Explain in Narrative	Cloudy	City, Village or Urban Comp	22SH000857	Shelburne PD.	6	999.99	None/Other	Day
6977214		October 6, 2022 at 9:41 AM	Shelburne	5373 Shelburne Rd	SHELBURNE RD	Property Damage Only			Unknown	22SH002242	Shelburne PD.	0	999.99	None/Other	Day
6726240		June 28, 2022 at 9:00 AM	Shelburne	72 Church St	TOWN ROAD 0015	Property Damage Only	Same Direction Sideswipe	Clear	City, Village or Urban Comp	22SH001441	Shelburne PD.	6	999.99	None/Other	Day
5358490		April 13, 2020 at 7:11 AM	Shelburne	Falls Rd	FALLS RD	Property Damage Only	Same Direction Sideswipe	Cloudy	Minor Collector - Non Fed Aid	20SH01860	Shelburne PD.	4	1.618	None/Other	Day
5177644		March 1, 2020 at 5:30 PM	Shelburne	15 Shelburne Shopping Park	Unknown	Property Damage Only			Other Public Roadway (Rest	20SH01084	Shelburne PD.	9	999.99	None/Other	Night
7623131		December 6, 2023 at 7:57 AM	Shelburne	504-508 Falls Rd	FALLS RD	Property Damage Only			Federal Aid Urban System (C	23SH003665	Shelburne PD.	2	1.315	None/Other	Day
5791008		August 22, 2020 at 9:35 AM	Shelburne	495 Falls Rd	FALLS RD	Injury	Single Vehicle Crash	Cloudy	Minor Collector - Non Fed Aid	20SH04584	Shelburne PD.	4	999.99	None/Other	Day
5930883		November 21, 2021 at 2:26 PM	Shelburne	576 Falls Road	FALLS RD	Injury		Clear	Minor Collector - Non Fed Aid	21SH07556	Shelburne PD.	4	1.23	None/Other	Day
7619516		March 18, 2024 at 12:38 PM	Shelburne	495 Falls Road	Unknown	Property Damage Only			Other Public Roadway (Rest	24SH000642	Shelburne PD.	9	999.99	None/Other	Day
7625744		July 11, 2024 at 1:38 PM	Shelburne	Falls Rd	FALLS RD	Property Damage Only	Left Turn and Thru, Same Direction	Clear	Minor Collector - Non Fed Aid	24SH001707	Shelburne PD.	4	999.99	None/Other	Day
6782253		July 18, 2022 at 3:04 PM	Shelburne	495 Falls Road	Unknown	Property Damage Only			Other Public Roadway (Rest	22SH001629	Shelburne PD.	9	999.99	None/Other	Day
5211912		March 12, 2020 at 9:25 AM	Shelburne	Mount Philo Rd	MOUNT PHILO RD	Property Damage Only	No Turns, Thru moves only, Broad	Cloudy	Minor Collector - Non Fed Aid	20SH01274	Shelburne PD.	4	1.071	None/Other	Day
5923999		August 23, 2021 at 11:45 AM	Shelburne	Marsett Road at Falls Road	MARSETT ROAD	Property Damage Only	No Turns, Thru moves only, Broad	Clear	Federal Aid Urban System (C	21SH05851	Shelburne PD.	2	0.35	None/Other	Day
5892142		October 6, 2020 at 9:43 AM	Shelburne	Marsett Road at Falls Road	MOUNT PHILO RD	Property Damage Only			Minor Collector - Non Fed Aid	20SH05568	Shelburne PD.	4	1.058	None/Other	Day
7623346		September 20, 2023 at 12:40 PM	Shelburne	972-1058 Falls Rd	FALLS RD	Property Damage Only	Other - Explain in Narrative		Federal Aid Urban System (C	23SH002940	Shelburne PD.	2	0.255	None/Other	Day
7624496		September 4, 2024 at 11:54 AM	Shelburne	963-1159 Falls Rd	FALLS RD	Property Damage Only		Clear	Federal Aid Urban System (C	24SH002387	Shelburne PD.	2	0.396	None/Other	Day
6557504		April 26, 2022 at 12:58 PM	Shelburne	1138B Falls Rd	FALLS ROAD	Fatal	Single Vehicle Crash	Clear	Federal Aid Urban System (C	22SH000939	Shelburne PD.	2	0.41	None/Other	Day
7626749		September 4, 2024 at 3:46 PM	Shelburne	1161-1169 Falls Rd	FALLS RD	Injury	Head On	Clear	Federal Aid Urban System (C	24SH002390	Shelburne PD.	2	0.422	None/Other	Day
7420554		May 21, 2023 at 11:17 PM	Shelburne	82-116 Irish Hill Rd	IRISH HILL RD	Property Damage Only	Head On	Cloudy	Federal Aid Urban System (C	23SH001526	Shelburne PD.	2	0.555	None/Other	Night
6684828		June 17, 2022 at 3:39 PM	Shelburne	82-92 Irish Hill Rd	FALLS ROAD	Property Damage Only	Left Turn and Thru, Angle Broadside	Clear	Federal Aid Urban System (C	22SH001355	Shelburne PD.	2	0.69	None/Other	Day
6384672		March 1, 2022 at 8:36 PM	Shelburne	566 Irish Hill Rd	IRISH HILL ROAD	Property Damage Only	Rear End	Freezing Precipitation	Federal Aid Urban System (C	22SH000509	Shelburne PD.	2	0.34	None/Other	Night
7243363		March 16, 2023 at 10:16 AM	Shelburne	551-599 Irish Hill Rd	IRISH HILL RD	Property Damage Only	No Turns, Thru moves only, Broad	Cloudy	Federal Aid Urban System (C	SH000738	Shelburne PD.	2	0.475	None/Other	Day
5921192		March 29, 2021 at 2:46 PM	Shelburne	6987 Spear St	SPEAR STREET	Property Damage Only	Other - Explain in Narrative	Clear	Federal Aid Urban System (C	21SH02210	Shelburne PD.	2	1.13	None/Other	Day
5923379		April 15, 2021 at 6:08 PM	Shelburne	6987 Spear St	SPEAR STREET	Property Damage Only	Rear End	Rain	Federal Aid Urban System (C	21SH02650	Shelburne PD.	2	1.13	None/Other	Night
6313958		February 9, 2022 at 1:24 PM	Shelburne	6987 Spear St	SPEAR STREET	Property Damage Only			Federal Aid Urban System (C	22SH000351	Shelburne PD.	2	1.13	None/Other	Day
5930987		November 20, 2021 at 11:52 AM	Shelburne	Irish Hill	IRISH HILL ROAD	Property Damage Only	Left Turn and Thru, Angle Broadside	Cloudy	Federal Aid Urban System (C	21SH07539	Shelburne PD.	2	0.48	None/Other	Day
5926980		February 8, 2021 at 11:20 AM	Shelburne	Spear Street	SPEAR STREET	Injury	No Turns, Thru moves only, Broadside ^<		Federal Aid Urban System (C	21SH00991	Shelburne PD.	2	1.14	None/Other	Day
7620397		December 8, 2023 at 8:58 AM	Shelburne	Spear Street	SPEAR STREET	Property Damage Only			Federal Aid Urban System (C	23SH003681	Shelburne PD.	2	1.14	None/Other	Day
7628434		December 4, 2024 at 8:31 AM	Shelburne	6713-6843 Spear St	SPEAR ST	Property Damage Only	Single Vehicle Crash	Cloudy	Federal Aid Urban System (C	24SH004101	Shelburne PD.	2	1.26	None/Other	Day
5920664		March 13, 2021 at 12:00 PM	Shelburne	Spear St.	SPEAR ST	Property Damage Only	Head On	Clear	Minor Collector - Non Fed Aid	21SH001813	Shelburne PD.	4	1.38	Deer	Day
7167327		December 23, 2022 at 4:34 PM	Shelburne	6623 Spear Street	SPEAR STREET	Property Damage Only	Rear End		Federal Aid Urban System (C	22SH002815	Shelburne PD.	2	1.518	None/Other	Night
6601219		May 9, 2022 at 4:01 PM	Shelburne	6662 Spear Street	SPEAR STREET	Property Damage Only	Single Vehicle Crash	Clear	Federal Aid Urban System (C	22SH001023	Shelburne PD.	2	1.54	None/Other	Day
7619290		April 13, 2024 at 11:32 PM	Shelburne	7580-7726 Spear St	SPEAR ST	Property Damage Only			Unknown	24SH000856	Shelburne PD.	0	0.576	None/Other	Night
5919136		May 12, 2021 at 10:25 AM	Shelburne	7588 Spear St	SPEAR STREET	Property Damage Only	Rear End	Clear	Federal Aid Urban System (C	21SH03335	Shelburne PD.	2	0.53	None/Other	Day
7581863		August 3, 2023 at 2:02 PM	Shelburne	6987 Spear St	SPEAR ST	Property Damage Only	No Turns, Thru moves only, Broad	Cloudy	Unknown	23SH002431	Shelburne PD.	0	0.484	None/Other	Day
7625344		December 20, 2024 at 12:11 PM	Shelburne	1001-1205 Irish Hill Rd	IRISH HILL RD	Property Damage Only	Rear End	Freezing Precipitation	Federal Aid Secondary System	24SH004360	Shelburne PD.	3	0.969	None/Other	Day

	Falls Road / Mt. Philo Rd & Marsett Road
	Falls Road / Irish Hill near Thomas Road
	Spear St & Irish Hill



Reported Crashes near Project Area, 2020 through 2024

Triangle Farm TIS, Shelburne VT

ObjectID	Intersection With	Impairment	Involving	Non Reportable Address	Reporting Agency ID	Road Characteristics	Road Condition	Street Address	Surface Condition	AOT Route ID	Coordinates Y	Coordinates X
5926629		None	None		VT0040700	Other - Explain in Narrative	None	138 Steeplebush Rd	Dry	T0080	44.36752386	-73.22868594
7628600	Church Road And Shelburne Road	None	Heavy Truck		VT0040700	T - Intersection		2-20 Church St		T0015	44.37818998	-73.22844177
6534866	Hillside Ter	None	None		VT0040700	Not at a Junction	None	419 Hillside Terrace	Dry	T0053	44.37515758	-73.22836653
6977214	CHURCH.ST.	None	None		VT0040700	Not at a Junction		5373 Shelburne Rd		0000	44.3791645	-73.22803975
6726240	Falls Rd	None	None		VT0040700	Not at a Junction	None	72 Church St	Dry	T0015	44.37737023	-73.2271517
5358490	Church St	None	None		VT0040700	T - Intersection	None	Falls Rd	Wet	S0832	44.37786892	-73.22656811
5177644	Falls Rd	None	None		VT0040700	Parking Lot		15 Shelburne Shopping Park		0000	44.37914439	-73.22554236
7623131	FISHER PLACE	None	None		VT0040700	Not at a Junction		504-508 Falls Rd		0000	44.37371049	-73.22547186
5791008	Wes Rd	None	Bicycle		VT0040700	T - Intersection	None	495 Falls Rd	Dry	S0832	44.37357454	-73.2253983
5930883		None	None		VT0040700	Not at a Junction		576 Falls Road	Dry	S0832	44.37252897	-73.22520143
7619516	Falls Road / Laplatte Cir	None	None		VT0040700	Parking Lot		495 Falls Road		0000	44.37367544	-73.22509841
7625744	Laplatte Circle	None	None		VT0040700	T - Intersection	None	Falls Rd	Dry	S0832	44.37189373	-73.22506388
6782253	USPS	None	None		VT0040700	Driveway		495 Falls Road		0000	44.37378367	-73.2250621
5211912	Marsett Rd	None	None		VT0040700	Four-way Intersection	None	Mount Philo Rd	Dry	S0832	44.37035731	-73.22466852
5923999	Falls Rd	None	None		VT0040700	Four-way Intersection	None	Marsett Road at Falls Roadd	Dry	U5718	44.37037683	-73.22464166
5892142	Falls Rd	None	Bicycle		VT0040700		None	Marsett Road at Falls Roadd		S0832	44.3701868	-73.22459114
7623346	Bacon Drive	None	None		VT0040700	Not at a Junction	None	972-1058 Falls Rd	Dry	0000	44.37084784	-73.21951705
7624496	Thomas Road	None	None		VT0040700	Not at a Junction	None	963-1159 Falls Rd	Dry	0000	44.37081703	-73.21671342
6557504	Thomas Rd	None	None		VT0040700	Not at a Junction	None	1138B Falls Rd	Dry	U5712	44.37070682	-73.21647511
7626749	Thomas Road	None	None		VT0040700	Not at a Junction	None	1161-1169 Falls Rd	Dry	0000	44.37062358	-73.21626173
7420554	Addie Lane	Alcohol	None		VT0040700	Not at a Junction		82-116 Irish Hill Rd	Dry	0000	44.37099302	-73.21371289
6684828	Thompson Rd	None	None		VT0040700	T - Intersection	None	82-92 Irish Hill Rd	Dry	U5712	44.37226029	-73.21162617
6384672	Spear St	None	None		VT0040700	Not at a Junction		566 Irish Hill Rd	Wet	U5716	44.37339064	-73.20515813
7243363	Irish Hill	None	None		VT0040700	Four-way Intersection	None	551-599 Irish Hill Rd	Dry	0000	44.37368787	-73.20251657
5921192	Irish Hill Rd	None	None		VT0040700	Four-way Intersection	None	6987 Spear St	Dry	U5720	44.37356282	-73.20242897
5923379	Irish Hill Rd	None	None		VT0040700	Four-way Intersection	None	6987 Spear St	Wet	U5720	44.37356282	-73.20242897
6313958	Irish Hill Rd	None	None		VT0040700			6987 Spear St		U5720	44.37356282	-73.20242897
5930987	Spear Street	None	None		VT0040700	Four-way Intersection	None	Irish Hill	Dry	U5716	44.37369891	-73.20241868
5926980	Irish Hill	None	None		VT0040700	Four-way Intersection	None	Spear Street	Dry	U5720	44.37369891	-73.20241868
7620397	Irish Hill Road	None	None		VT0040700	Four-way Intersection		Spear Street		U5720	44.37369891	-73.20241868
7628434		None	None		VT0040700	Not at a Junction	None	6713-6843 Spear St	Wet	0000	44.37535028	-73.20232782
5920664	Luke Street	None	None		VT0040700	Not at a Junction	None	Spear St.	Dry	S0572	44.37704232	-73.20227899
7167327	6623 Spear Street	None	None		VT0040700	Driveway	Other - Explain in Narrative	6623 Spear Street	Snow	U5720	44.37890073	-73.20213461
6601219	Spear Street And Irish Hill Road	None	None		VT0040700	Not at a Junction		6662 Spear Street	Dry	U5720	44.37920361	-73.20212329
7619290		None	None		VT0040700	Not at a Junction		7580-7726 Spear St		0000	44.36615117	-73.20092924
5919136	Thomas Rd	None	None		VT0040700	Not at a Junction	None	7588 Spear St	Dry	U5720	44.3655734	-73.20059
7581863	Falls Road And Spear St. Intersection. 4 Way Stop	None	None		VT0040700	Four-way Intersection	None	6987 Spear St	Dry	0000	44.36500144	-73.20023253
7625344	Heather Lane	None	None		VT0040700	Not at a Junction	None	1001-1205 Irish Hill Rd	Wet	0000	44.37198041	-73.19298733



Reported Crashes near Project Area, 2020 through 2024

Triangle Farm TIS, Shelburne VT

ObjectID	Mapped	Crash Date	City/Town	Address	AOT Route	Crash Type	Collision Direction	Weather	Road Group	Report Number	Reporting Agency	Road Group ID	AOT Actual Milepoint	Animal	Time of Day
5931218		November 9, 2021 at 12:30 PM	Shelburne	5462 Shelburne Rd	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	21SH07385	Shelburne PD.	10	1.77	None/Other	Day
5921484		October 17, 2020 at 12:40 PM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End		State Highway numbered route, State owned	20SH05774	Shelburne PD.	10	1.773	None/Other	Day
7622078		April 20, 2024 at 9:54 AM	Shelburne	5401-5511 Shelburne Rd	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	24SH000916	Shelburne PD.	10	1.773	None/Other	Day
5923624		July 12, 2021 at 3:28 PM	Shelburne	SHELBURNE RD	US-7				State Highway numbered route, State owned	21SH04892	Shelburne PD.	10	1.78		Day
5929274		October 22, 2021 at 4:54 AM	Shelburne	SHELBURNE RD	US-7				State Highway numbered route, State owned	21SH07057	Shelburne PD.	10	1.78		Night
5933280		August 20, 2021 at 2:06 PM	Shelburne	Opposite Shelburne Town Offices	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	21SH05790	Shelburne PD.	10	1.78	None/Other	Day
7018488		October 22, 2022 at 12:39 PM	Shelburne	5434-5460 Shelburne Rd	US-7	Injury	Other - Explain in Narrative		State Highway numbered route, State owned	22SH002370	Shelburne PD.	10	1.782	None/Other	Day
7546031		July 18, 2023 at 10:35 AM	Shelburne	5434-5460 Shelburne Rd	US-7	Injury	No Turns, Thru moves only, Broadside ^<	Clear	State Highway numbered route, State owned	23SH002264	Shelburne PD.	10	1.782	None/Other	Day
7625565		September 23, 2024 at 12:19 PM	Shelburne	Shelburne Rd	US-7	Injury	No Turns, Thru moves only, Broadside ^<	Cloudy	State Highway numbered route, State owned	24SH002765	Shelburne PD.	10	1.782	None/Other	Day
5922490		December 7, 2020 at 1:30 PM	Shelburne	Opposite Shelburne Town Offices	US-7	Property Damage Only			State Highway numbered route, State owned	20SH06892	Shelburne PD.	10	1.786	None/Other	Day
7623473		December 18, 2023 at 4:38 AM	Shelburne	5408-5432 Shelburne Rd	US-7	Property Damage Only	Rear End		State Highway numbered route, State owned	23SH003765	Shelburne PD.	10	1.792	None/Other	Day
5919649		October 15, 2020 at 7:36 AM	Shelburne	5420 Shelburne Road	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	20SH05734	Shelburne PD.	10	1.799	None/Other	Day
5921992		November 3, 2021 at 11:45 AM	Shelburne	Opposite Shelburne Town Offices	US-7	Property Damage Only			State Highway numbered route, State owned	21SH07294	Shelburne PD.	10	1.8	None/Other	Day
7564963		July 24, 2023 at 1:36 PM	Shelburne	5408-5432 Shelburne Rd	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	23SH002313	Shelburne PD.	10	1.806	None/Other	Day
7422753		May 27, 2023 at 7:53 AM	Shelburne	Thomason Janet DDS	US-7	Property Damage Only			State Highway numbered route, State owned	23SH001580	Shelburne PD.	10	1.825	None/Other	Day
6706237		June 24, 2022 at 1:25 PM	Shelburne	5404 SHELBURNE RD	US-7	Property Damage Only			State Highway numbered route, State owned	22SH001400	Shelburne PD.	10	1.83	None/Other	Day
7625273		August 20, 2024 at 11:34 AM	Shelburne	5349-5377 Shelburne Rd	US-7	Injury	Rear End	Cloudy	State Highway numbered route, State owned	24SH002114	Shelburne PD.	10	1.83	None/Other	Day
5924813		May 21, 2021 at 11:55 AM	Shelburne	5332 Shelburne Road	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	21SH03556	Shelburne PD.	10	1.91	None/Other	Day
6782661		July 21, 2022 at 9:36 AM	Shelburne	Harbor ROAD	US-7	Property Damage Only			State Highway numbered route, State owned	22SH001653	Shelburne PD.	10	1.936	None/Other	Day
4951419		January 15, 2020 at 9:30 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	20SH00241	Shelburne PD.	10	1.937	None/Other	Day
5791789		August 9, 2020 at 10:18 AM	Shelburne	5380 Shelburne Road	US-7	Injury	Rear End	Clear	State Highway numbered route, State owned	20SH04289	Shelburne PD.	10	1.937	None/Other	Day
7459765		June 6, 2023 at 9:20 AM	Shelburne	5289-5307 Shelburne Rd	US-7	Injury	Rear End	Clear	State Highway numbered route, State owned	23SH001720	Shelburne PD.	10	1.939	None/Other	Day
7621768		December 15, 2023 at 1:10 PM	Shelburne	Thomason Janet DDS	US-7	Property Damage Only			State Highway numbered route, State owned	23SH003737	Shelburne PD.	10	1.948	None/Other	Day
7041089		October 29, 2022 at 2:40 PM	Shelburne	5289-5307 Shelburne Rd	US-7	Property Damage Only			State Highway numbered route, State owned	22SH002428	Shelburne PD.	10	1.957	None/Other	Day
4981638		January 19, 2020 at 1:10 PM	Shelburne	5288 Shelburne Rd	US-7	Property Damage Only	Same Direction Sideswipe	Cloudy	State Highway numbered route, State owned	20SH00314	Shelburne PD.	10	1.96	None/Other	Day
5933046		October 29, 2021 at 9:46 PM	Shelburne	SHELBURNE RD	US-7	Property Damage Only	No Turns, Thru moves only, Broadside ^<		State Highway numbered route, State owned	21SH07219	Shelburne PD.	10	1.96	None/Other	Night
5934836		July 14, 2021 at 1:25 PM	Shelburne	5259-5287 Ethan Allen Hwy	US-7				State Highway numbered route, State owned	21SH04937	Shelburne PD.	10	1.96		Day
7091362		November 14, 2022 at 9:52 AM	Shelburne	5264-5286 Ethan Allen Hwy	US-7	Property Damage Only	No Turns, Thru moves only, Broadside ^<	Clear	State Highway numbered route, State owned	22SH002555	Shelburne PD.	10	1.96	None/Other	Day
6863611		August 20, 2022 at 10:23 AM	Shelburne	5259-5287 Ethan Allen Hwy	US-7	Property Damage Only	Same Direction Sideswipe	Clear	State Highway numbered route, State owned	22SH001918	Shelburne PD.	10	1.961	None/Other	Day
7620360		January 8, 2024 at 1:32 PM	Shelburne	5259-5287 Ethan Allen Hwy	US-7	Property Damage Only			State Highway numbered route, State owned	24SH000072	Shelburne PD.	10	1.961	None/Other	Day
5523960		May 24, 2020 at 2:06 PM	Shelburne	5252 Shelburne Road	US-7	Property Damage Only			State Highway numbered route, State owned	20SH02818	Shelburne PD.	10	1.963	None/Other	Day
5177567		March 4, 2020 at 6:05 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Same Direction Sideswipe	Cloudy	State Highway numbered route, State owned	20SH01135	Shelburne PD.	10	1.968	None/Other	Day
7623313		April 2, 2024 at 10:12 AM	Shelburne	5285-5299 Shelburne Rd	US-7	Property Damage Only	Other - Explain in Narrative	Clear	State Highway numbered route, State owned	24SH000756	Shelburne PD.	10	1.97	None/Other	Day
7622859		February 14, 2024 at 1:26 PM	Shelburne	Mobil	US-7	Property Damage Only			State Highway numbered route, State owned	24SH000334	Shelburne PD.	10	1.972	None/Other	Day
7344280		April 17, 2023 at 1:05 PM	Shelburne	5259-5287 Ethan Allen Hwy	US-7	Property Damage Only	Rear End	Rain	State Highway numbered route, State owned	23SH001121	Shelburne PD.	10	1.974	None/Other	Day
5930798		December 1, 2021 at 8:45 AM	Shelburne	5252 Shelburne Rd	US-7	Property Damage Only	Head On	Clear	State Highway numbered route, State owned	21SH07689	Shelburne PD.	10	1.98	None/Other	Day
6494121		April 5, 2022 at 1:45 PM	Shelburne	5252 US-7	US-7	Property Damage Only	Left Turn and Thru, Angle Broadside -->v--	Clear	State Highway numbered route, State owned	22SH000779	Shelburne PD.	10	1.98	None/Other	Day
6806714		July 29, 2022 at 1:00 PM	Shelburne	5252 US-7	US-7	Property Damage Only	Same Direction Sideswipe	Clear	State Highway numbered route, State owned	22SH001731	Shelburne PD.	10	1.98	None/Other	Day
5549799		June 3, 2020 at 6:07 PM	Shelburne	Shelburne Opposite Town Offices	US-7	Property Damage Only	Opp Direction Sideswipe	Clear	State Highway numbered route, State owned	20SH03021	Shelburne PD.	10	1.982	None/Other	Night
7163084		January 6, 2023 at 4:16 AM	Shelburne	5247-5257 Ethan Allen Hwy	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	23SH000062	Shelburne PD.	10	1.985	None/Other	Day
7525079		July 12, 2023 at 12:06 PM	Shelburne	5219-5245 Ethan Allen Hwy	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	23SH002203	Shelburne PD.	10	2.001	None/Other	Day
5411579		April 28, 2020 at 10:07 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	20SH02221	Shelburne PD.	10	2.002	None/Other	Day
5067516		February 12, 2020 at 4:10 PM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	20SH00764	Shelburne PD.	10	2.004	None/Other	Night
5923449		April 24, 2021 at 1:12 PM	Shelburne	5224 Shelburne Road	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	21SH02877	Shelburne PD.	10	2.01	None/Other	Day
5920290		November 10, 2020 at 6:51 AM	Shelburne	5203 Sheburne Road	US-7	Injury	Rear End	Clear	State Highway numbered route, State owned	20SH06266	Shelburne PD.	10	2.027	None/Other	Day
4891773		January 3, 2020 at 1:37 PM	Shelburne	5172 US-7	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	20SH00042	Shelburne PD.	10	2.06	None/Other	Day



Reported Crashes through HCL 343 (US-7 mm 1.77 - 2.07, incl. Falls Rd), 2020 through 2024

Triangle Farm TIS, Shelburne VT

ObjectID	Intersection With	Impairment	Involving	Non Reportable Address	Reporting Agency ID	Road Characteristics	Road Condition	Street Address	Surface Condition	AOT Route ID	Coordinates
5931218	Church St	None	None		VT0040700	Not at a Junction	None	5462 Shelburne Rd	Dry	0070	44.37802475078472,-73.22854603262078
5921484	Church Street	None	None		VT0040700	Not at a Junction	None	Shelburne Road	Not Reported	0070	44.37806667125564,-73.22853007504042
7622078	Church Street	None	None		VT0040700	T - Intersection	None	5401-5511 Shelburne Rd	Dry	0070	44.37806667125564,-73.22853007504042
5923624	CHURCH ST			CHURCH ST & SHELBURNE RD	VT0040700			SHELBURNE RD		0070	44.378164481456096,-73.22849284120026
5929274	CHURCH ST			SHELBURNE RD & CHURCH ST	VT0040700			SHELBURNE RD		0070	44.378164481456096,-73.22849284120026
5933280	Church Street	None	None		VT0040700	Four-way Intersection	None	Opposite Shelburne Town Offices	Dry	0070	44.378164481456096,-73.22849284120026
7018488	Church Street	None	Motorcycle		VT0040700	T - Intersection	None	5434-5460 Shelburne Rd	Dry	0070	44.378192429829426,-73.22848220409048
7546031	Church St	None	None		VT0040700	Other - Explain in Narrative	None	5434-5460 Shelburne Rd	Dry	0070	44.378192429829426,-73.22848220409048
7625565	Bay Road	None	None		VT0040700	Four-way Intersection	None	Shelburne Rd	Dry	0070	44.406072386669265,-73.21679843718599
5922490	Church St	None	None		VT0040700			Opposite Shelburne Town Offices		0070	44.378248063762385,-73.22846046582515
7623473	Shelburne Road / Church St	None	None		VT0040700	Not at a Junction		5408-5432 Shelburne Rd		0070	44.3783315167564,-73.22842785935755
5919649	Church Street	None	None		VT0040700	Other - Explain in Narrative	None	5420 Shelburne Road	Dry	0070	44.378428879277465,-73.22838981771862
5921992	Church St	None	None		VT0040700			Opposite Shelburne Town Offices		0070	44.37844278740806,-73.22838438261854
7564963		None	None		VT0040700	Not at a Junction	None	5408-5432 Shelburne Rd	Dry	0070	44.37852630845757,-73.22835212578285
7422753	U.S. RT.7	None	None		VT0040700	Four-way Intersection		Thomason Janet DDS		0070	44.378791171922096,-73.22825191649156
6706237	CHURCH STREET	None	None		VT0040700			5404 SHELBURNE RD		0070	44.37886087193603,-73.22822554453793
7625273		None	None		VT0040700	Not at a Junction	None	5349-5377 Shelburne Rd		0070	44.37886087193603,-73.22822554453793
5924813	Falls Road	None	None		VT0040700	Not at a Junction	None	5332 Shelburne Road	Dry	0070	44.379975474848884,-73.22780052662502
6782661	SHELBURNE ROAD	None	None		VT0040700	Driveway		Harbor ROAD		0070	44.38033727213916,-73.2276601298261
4951419	Falls Road	None	None		VT0040700	Four-way Intersection	None	Shelburne Road	Wet	0070	44.38035118843188,-73.22765473173772
5791789	South Of Falls Road	None	None		VT0040700	Not at a Junction	None	5380 Shelburne Road	Dry	0070	44.38035118843188,-73.22765473173772
7459765	Falls Road	None	Heavy Truck		VT0040700	Four-way Intersection	None	5289-5307 Shelburne Rd	Dry	0070	44.38037901822929,-73.22764393159738
7621768	Church Street	None	None		VT0040700	Not at a Junction		Thomason Janet DDS		0070	44.380504256522535,-73.2275953308935
7041089	Falls Road	None	None		VT0040700	Four-way Intersection		5289-5307 Shelburne Rd		0070	44.38062979162774,-73.22754825520269
4981638	Shelburne Rd	None	None		VT0040700	Four-way Intersection	None	5288 Shelburne Rd	Wet	0070	44.38067165353356,-73.22753263667211
5933046	Falls Rd	None	None		VT0040700	Four-way Intersection	Unknown	SHELBURNE RD	Dry	0070	44.38067165353356,-73.22753263667211
5934836	HARBOR RD			SHELBURNE RD & HARBOR RD	VT0040700	Four-way Intersection		5259-5287 Ethan Allen Hwy		0070	44.38067165353356,-73.22753263667211
7091362	Shelburne Road And Falls Road	None	None		VT0040700	Four-way Intersection		5264-5286 Ethan Allen Hwy	Dry	0070	44.38067165353356,-73.22753263667211
6863611	Falls Road	None	None		VT0040700	Not at a Junction	None	5259-5287 Ethan Allen Hwy	Dry	0070	44.380685640818015,-73.2275273511658
7620360	Shelburne Road An Falls Road	None	None		VT0040700	Four-way Intersection		5259-5287 Ethan Allen Hwy		0070	44.38068556047173,-73.22752738154277
5523960		None	None		VT0040700	Not at a Junction		5252 Shelburne Road		0070	44.38071361821078,-73.22751677821995
5177567	Falls Road	None	None		VT0040700	Four-way Intersection	None	Shelburne Road	Dry	0070	44.38078356166943,-73.22749034875288
7623313	Harbor Road	None	None		VT0040700	Four-way Intersection	None	5285-5299 Shelburne Rd	Dry	0070	44.38081073417723,-73.22748008148662
7622859	CHURCH STREET	None	None		VT0040700	Not at a Junction		Mobil		0070	44.38083855087277,-73.22746956925072
7344280	Harbor Rd	None	Heavy Truck		VT0040700	Four-way Intersection	Road Surface Condition(wet, icy, snow, slush, etc)	5259-5287 Ethan Allen Hwy	Wet	0070	44.38086636755479,-73.22745905896565
5930798	Falls Rd	None	None		VT0040700	Parking Lot	None	5252 Shelburne Rd	Dry	0070	44.380951424532306,-73.22742691854603
6494121	Shelburne Rd	None	None		VT0040700	Driveway	None	5252 US-7	Dry	0070	44.380951424532306,-73.22742691854603
6806714	5252 US-7, Shelburne, VT 05482	None	None		VT0040700	Four-way Intersection	None	5252 US-7	Dry	0070	44.380951424532306,-73.22742691854603
5549799	Falls Rd	None	None		VT0040700	Four-way Intersection	None	Shelburne Opposite Town Offices	Dry	0070	44.380979401915134,-73.22741634550603
7163084		None	None		VT0040700	Not at a Junction	None	5247-5257 Ethan Allen Hwy	Dry	0070	44.38102136798114,-73.22740048690775
7525079	HARBOR ROAD	None	None		VT0040700	Not at a Junction	None	5219-5245 Ethan Allen Hwy	Dry	0070	44.38124188711135,-73.227317157325
5411579	Harbor Road	None	None		VT0040700	Four-way Intersection	None	Shelburne Road	Dry	0070	44.381259172811106,-73.22731062432928
5067516	Harbor Road	None	None		VT0040700	Not at a Junction	None	Shelburne Road	Dry	0070	44.381287151576,-73.22730005315827
5923449	Harbor Rd	None	None		VT0040700	Not at a Junction	None	5224 Shelburne Road	Dry	0070	44.38137108226502,-73.22726833559497
5920290	Falls Rd	None	None		VT0040700	Not at a Junction	None	5203 Sheburne Road	Dry	0070	44.38160888837722,-73.2271784739416
4891773	Falls Rd	None	None		VT0040700	Not at a Junction	None	5172 US-7	Dry	0070	44.382070890070445,-73.22700600754598



Reported Crashes through HCL 343 (US-7 mm 1.77 - 2.07, incl. Falls Rd), 2020 through 2024

Triangle Farm TIS, Shelburne VT

ObjectID	Mapped	Crash Date	City/Town	Address	AOT Route	Crash Type	Collision Direction	Weather	Road Group	Report Number	Reporting Agency	Road Group ID	AOT Actual Milepoint	Animal
7582091		August 3, 2023 at 12:09 PM	Shelburne	6200-6260 Shelburne Rd	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	23SH002428	Shelburne PD.	10	0.993	None/Other
5930278		November 18, 2021 at 11:31 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End	Rain	State Highway numbered route, State owned	21SH07510	Shelburne PD.	10	1.01	None/Other
5921796		May 16, 2021 at 12:36 PM	Shelburne	Shelburne Road	US-7	Injury	Rear End	Clear	State Highway numbered route, State owned	21SH03444	Shelburne PD.	10	1.03	None/Other
6597919		May 8, 2022 at 12:50 PM	Shelburne	US Route 7	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	22SH001009	Shelburne PD.	10	1.05	None/Other
6601683		May 13, 2022 at 10:45 AM	Shelburne	US Route 7	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	22SH01041	Shelburne PD.	10	1.05	None/Other
7438118		May 31, 2023 at 8:10 AM	Shelburne	6058-6198 Shelburne Rd	US-7	Property Damage Only	Rear End		State Highway numbered route, State owned	23SH001637	Shelburne PD.	10	1.057	None/Other
7223548		March 10, 2023 at 3:04 PM	Shelburne	6057-6219 Shelburne Rd	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	23SH000673	Shelburne PD.	10	1.06	None/Other
7380973		April 30, 2023 at 2:14 PM	Shelburne	6057-6219 Shelburne Rd	US-7	Property Damage Only	Rear End	Rain	State Highway numbered route, State owned	23SH001245	Shelburne PD.	10	1.069	None/Other
7580792		August 5, 2023 at 8:11 PM	Shelburne	6057-6219 Shelburne Rd	US-7	Fatal	Single Vehicle Crash	Cloudy	State Highway numbered route, State owned	23SH002453	Shelburne PD.	10	1.089	None/Other
5920926		June 2, 2021 at 6:20 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	21SH03852	Shelburne PD.	10	1.09	None/Other
5701060		July 15, 2020 at 9:52 AM	Shelburne	6102 Shelburne Rd	US-7	Injury	Rear End	Clear	State Highway numbered route, State owned	20SH03754	Shelburne PD.	10	1.107	None/Other
7619103		November 13, 2023 at 2:13 PM	Shelburne	6058-6198 Shelburne Rd	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	23SH003449	Shelburne PD.	10	1.132	None/Other
7480053		July 1, 2023 at 7:57 PM	Shelburne	6057-6219 Shelburne Rd	US-7	Property Damage Only	Single Vehicle Crash	Rain	State Highway numbered route, State owned	23SH002067	Shelburne PD.	10	1.138	None/Other
5933246		October 2, 2021 at 9:27 AM	Shelburne	6069 Shelburne Rd	US-7	Injury	Rear End	Rain	State Highway numbered route, State owned	21SH06655	Shelburne PD.	10	1.14	None/Other
5893629		October 10, 2020 at 11:40 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Left Turn and Thru, Angle Broadside -->v--	Cloudy	State Highway numbered route, State owned	20SH05646	Shelburne PD.	10	1.15	None/Other
5924189		October 18, 2021 at 11:03 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	21SH06967	Shelburne PD.	10	1.15	None/Other
5924877		July 24, 2021 at 8:15 PM	Shelburne	Bostwick Rd	US-7	Property Damage Only	No Turns, Thru moves only, Broadside ^<	Cloudy	State Highway numbered route, State owned	21SH05198	Shelburne PD.	10	1.15	None/Other
5925339		April 26, 2021 at 10:05 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End		State Highway numbered route, State owned	21SH02935	Shelburne PD.	10	1.15	None/Other
5930884		November 23, 2021 at 4:26 AM	Shelburne	Shelburne Road	US-7	Property Damage Only		Cloudy	State Highway numbered route, State owned	21SH07581	Shelburne PD.	10	1.15	None/Other
6317413		February 1, 2022 at 4:45 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	22SH00285	Shelburne PD.	10	1.15	None/Other
6406176		March 8, 2022 at 5:46 AM	Shelburne	6069 Shelburne Rd	US-7	Property Damage Only	Left and Right Turns, Simultaneous Turn Crash --vv--	Clear	State Highway numbered route, State owned	22SH00565	Shelburne PD.	10	1.15	None/Other
7627054		August 26, 2024 at 9:00 AM	Shelburne	2-36 Marsett Rd	US-7	Injury	Rear End	Clear	State Highway numbered route, State owned	24SH002238	Shelburne PD.	10	1.154	None/Other
7622988		November 1, 2023 at 1:32 PM	Shelburne	5997-6055 Shelburne Rd	US-7	Injury	Left Turn and Thru, Angle Broadside -->v--	Cloudy	State Highway numbered route, State owned	23SH003331	Shelburne PD.	10	1.157	None/Other
5918485		January 20, 2021 at 10:00 AM	Shelburne	Us Route 7	US-7	Property Damage Only	Rear End	Freezing Precipitation	State Highway numbered route, State owned	21SH00516	Shelburne PD.	10	1.16	None/Other
5549800		June 4, 2020 at 10:07 AM	Shelburne	Shelburne Road	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	20SH03033	Shelburne PD.	10	1.163	None/Other
5924841		May 22, 2021 at 11:50 AM	Shelburne	Shelburne Museum	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	21SH03581	Shelburne PD.	10	1.17	None/Other
5932115		October 10, 2021 at 12:11 PM	Shelburne	Shelburne Rd At Marsett Rd	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	21SH06811	Shelburne PD.	10	1.17	None/Other
6900820		September 2, 2022 at 5:47 PM	Shelburne	5997-6055 Shelburne Rd	US-7	Injury	Rear End	Clear	State Highway numbered route, State owned	22SH002001	Shelburne PD.	10	1.174	None/Other
6317043		January 31, 2022 at 12:18 PM	Shelburne	6007 Shelburne Rd.	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	22SH000279	Shelburne PD.	10	1.18	None/Other
5919086		December 15, 2020 at 2:04 PM	Shelburne	Shelburne Rd at Marsett Rd	US-7	Injury	Rear End	Clear	State Highway numbered route, State owned	20SH07082	Shelburne PD.	10	1.181	None/Other
5925284		May 9, 2021 at 7:12 AM	Shelburne	6000 Shelburne Rd	US-7	Property Damage Only	Rear End	Cloudy	State Highway numbered route, State owned	21SH03253	Shelburne PD.	10	1.24	None/Other
7424361		May 26, 2023 at 3:44 PM	Shelburne	5867-5995 Shelburne Rd	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	23SH0001568	Shelburne PD.	10	1.241	None/Other
7620037		September 16, 2023 at 2:10 PM	Shelburne	5922-5948 Shelburne Rd	US-7	Property Damage Only	No Turns, Thru moves only, Broadside ^<	Cloudy	State Highway numbered route, State owned	23SH002918	Shelburne PD.	10	1.246	None/Other
7620924		April 25, 2024 at 3:52 PM	Shelburne	5885-5983 Shelburne Rd	US-7	Property Damage Only	Rear End	Clear	State Highway numbered route, State owned	24SH000971	Shelburne PD.	10	1.261	None/Other



Reported Crashes through HCL 700 (US-7 mm 0.97 - 1.27, incl. Bostwick Rd), 2020 through 2024

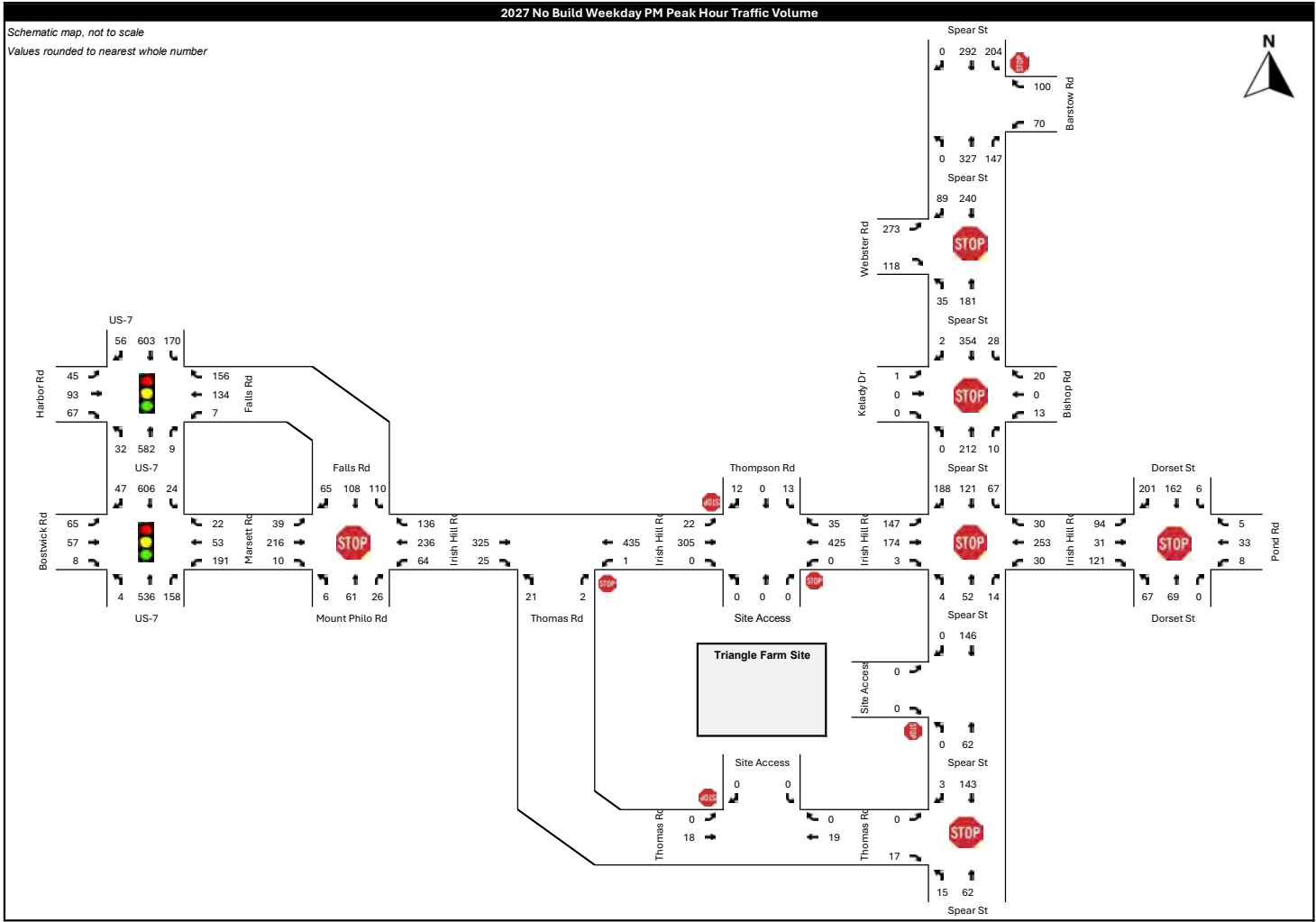
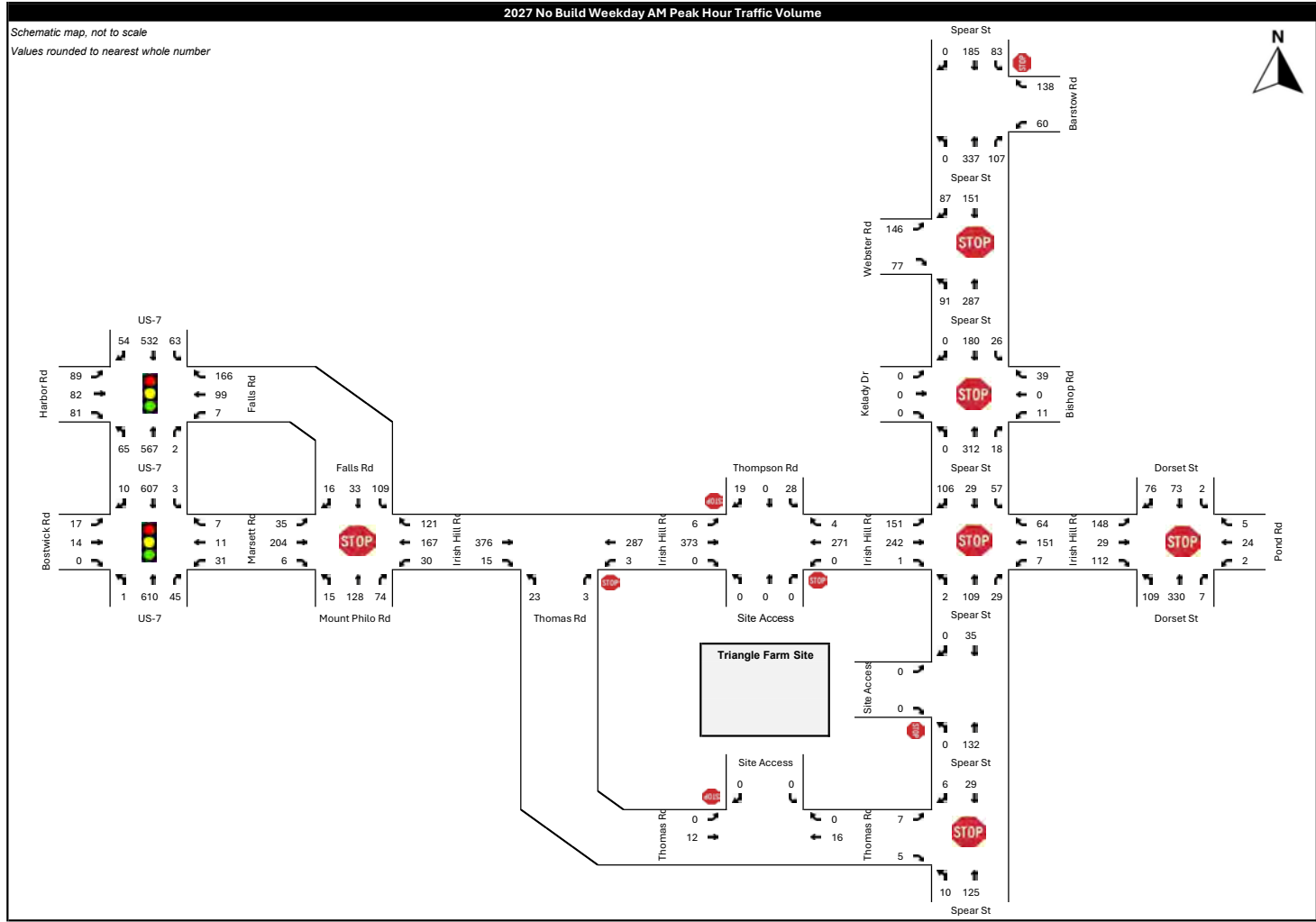
Triangle Farm TIS, Shelburne VT

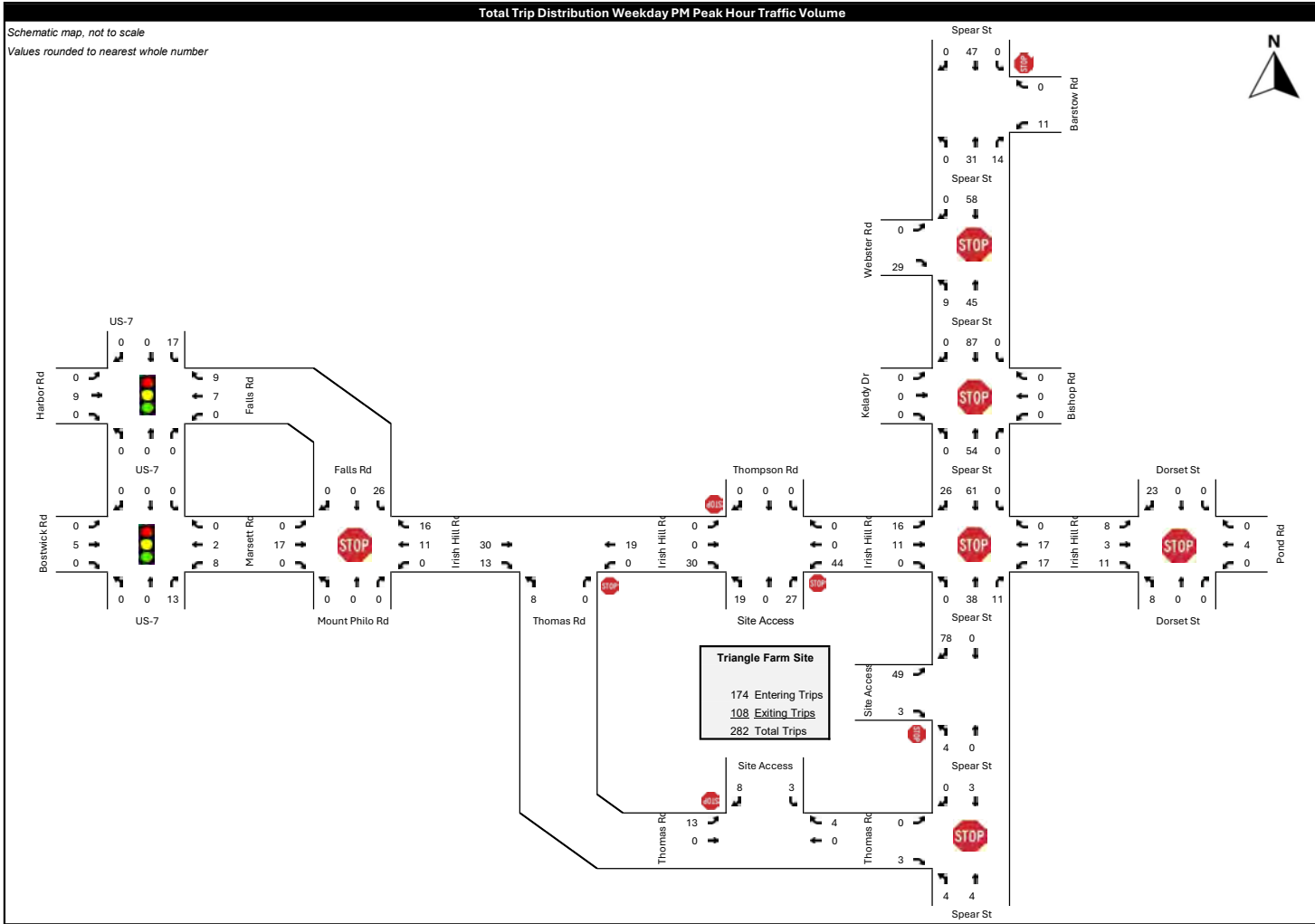
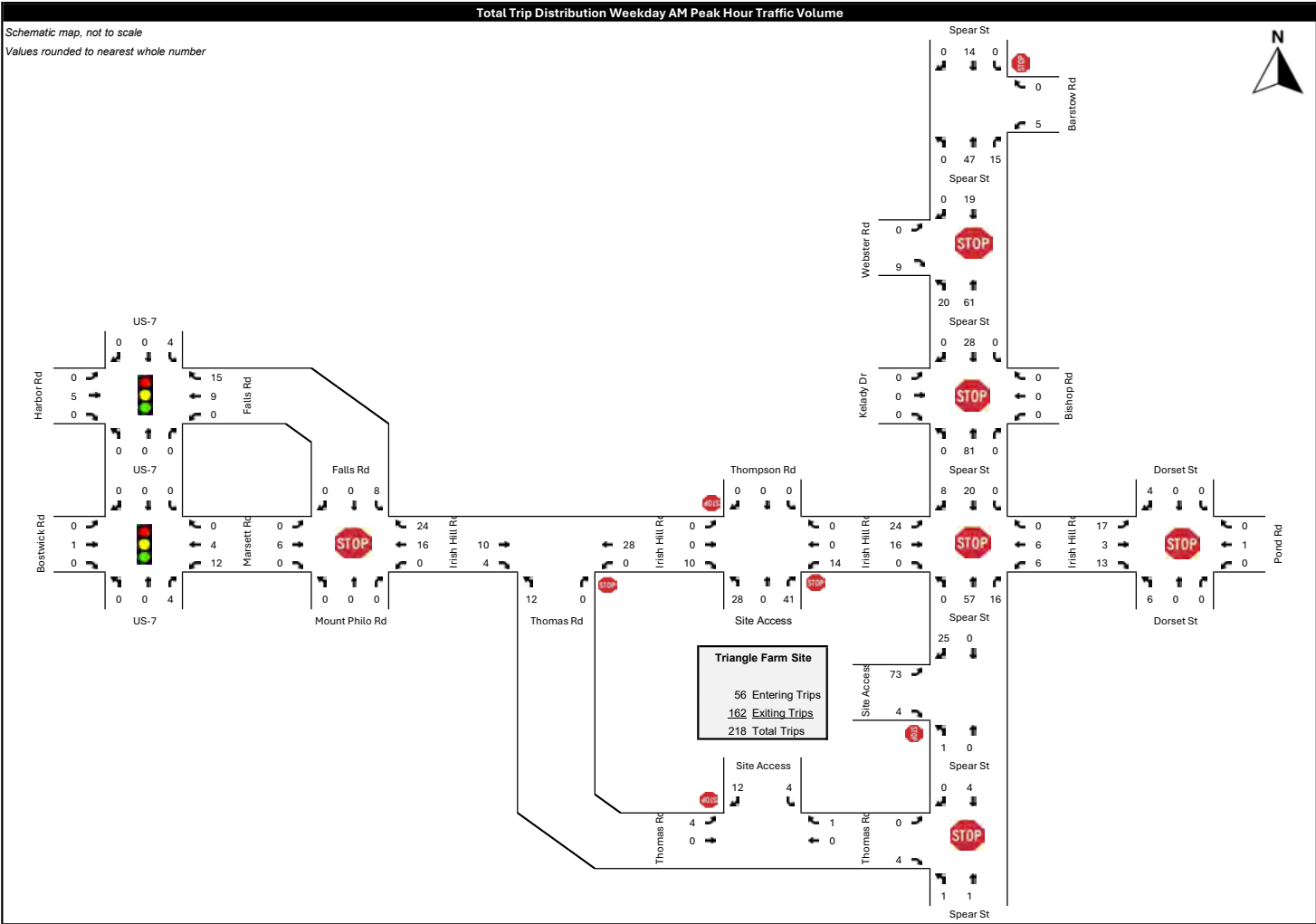
ObjectID	Time of Day	Intersection With	Impairment	Involving	Non Reportable Address	Reporting Agency ID	Road Characteristics	Road Condition	Street Address	Surface Condition	AOT Route ID	Coordinates
7582091	Day	Cynosure Drive	None	None		VT0040700	Not at a Junction	None	6200-6260 Shelburne Rd	Dry	0070	44.3671617148153,-73.23265275405765
5930278	Day	Cynosure Dr	None	None		VT0040700	Four-way Intersection		Shelburne Road	Wet	0070	44.36739438709932,-73.23253905737388
5921796	Day	Cynosure Dr	None	None		VT0040700	Not at a Junction	None	Shelburne Road	Dry	0070	44.367673655978855,-73.23243176458622
6597919	Day	Cynosure Drive	None	None		VT0040700	Not at a Junction	None	US Route 7	Dry	0070	44.367952324036345,-73.23232144244803
6601683	Day	Bostwick Road	None	None		VT0040700	Not at a Junction	None	US Route 7	Dry	0070	44.367952324036345,-73.23232144244803
7438118	Day	Cynosure Drive	None	None		VT0040700	Not at a Junction	None	6058-6198 Shelburne Rd	Dry	0070	44.3680498998999,-73.23228281459184
7223548	Night	Marsett Road	None	None		VT0040700	Not at a Junction	None	6057-6219 Shelburne Rd	Dry	0070	44.36809170638796,-73.23226630413893
7380973	Day	Cynosure Dr.	None	None		VT0040700	Not at a Junction	None	6057-6219 Shelburne Rd	Wet	0070	44.36821712586199,-73.23221676872109
7580792	Night	Cynosure Drive	None	Pedestrian		VT0040700	Not at a Junction	None	6057-6219 Shelburne Rd	Dry	0070	44.36849583570452,-73.23210669210079
5920926	Day	Marsett Road	None	None		VT0040700	Not at a Junction	None	Shelburne Road	Dry	0070	44.36850974441347,-73.23210119800495
5701060	Day	Bostwick Rd	None	None		VT0040700	Not at a Junction	None	6102 Shelburne Rd	Dry	0070	44.36874665614103,-73.23200762928846
7619103	Day	Marsett Rd	None	None		VT0040700	Four-way Intersection	None	6058-6198 Shelburne Rd	Dry	0070	44.3690950615041,-73.23187002084707
7480053	Night	Marsett Road	None	None		VT0040700	Not at a Junction	Road Surface Condition(wet, icy, snow, slush, etc)	6057-6219 Shelburne Rd	Water (standing / moving)	0070	44.36917867435097,-73.23183699876148
5933246	Day	Bostwick Rd	None	None		VT0040700	Four-way Intersection	Road Surface Condition(wet, icy, snow, slush, etc)	6069 Shelburne Rd	Wet	0070	44.36920654248553,-73.231825991344
5893629	Day	Bostwick Rd	None	None		VT0040700	Four-way Intersection	None	Shelburne Road	Dry	0070	44.36934595453697,-73.23177122356253
5924189	Day	Bostwick Road	None	None		VT0040700	Not at a Junction	None	Shelburne Road	Dry	0070	44.36934595453697,-73.23177122356253
5924877	Night	Route 7 North	None	None		VT0040700	Four-way Intersection	None	Bostwick Rd	Dry	0070	44.36934595453697,-73.23177122356253
5925339	Day	Bostwick Road	None	None		VT0040700	Four-way Intersection	None	Shelburne Road	Unknown	0070	44.36934595453697,-73.23177122356253
5930884	Day	Marsett Road	None	None		VT0040700	Not at a Junction	None	Shelburne Road	Dry	0070	44.36934595453697,-73.23177122356253
6317413	Day	Bostwick Road	None	Heavy Truck		VT0040700	Four-way Intersection	None	Shelburne Road	Dry	0070	44.36934595453697,-73.23177122356253
6406176	Day	Shelburne Rd @ Bostwick Road	None	Heavy Truck		VT0040700	Four-way Intersection	None	6069 Shelburne Rd	Dry	0070	44.36934595453697,-73.23177122356253
7627054	Day	Marsett Road	None	None		VT0040700	Four-way Intersection	None	2-36 Marsett Rd	Dry	0070	44.36940175234458,-73.23174947793187
7622988	Day	Marset Road	None	Pedestrian		VT0040700	Four-way Intersection	None	5997-6055 Shelburne Rd	Wet	0070	44.36944376620851,-73.2317339475417
5918485	Day	Marsett Rd	None	None		VT0040700	Four-way Intersection	Road Surface Condition(wet, icy, snow, slush, etc)	Us Route 7		0070	44.369485782882336,-73.2317184171647
5549800	Day	Bostwick Road	None	None		VT0040700	Four-way Intersection	None	Shelburne Road	Dry	0070	44.3695173803066,-73.2317067385688
5924841	Day	Marsett Road	None	None		VT0040700	Not at a Junction	None	Shelburne Museum	Dry	0070	44.369625605301316,-73.23166543401186
5932115	Day	Bostwick Rd	None	None		VT0040700	Not at a Junction	None	Shelburne Rd At Marsett Rd	Dry	0070	44.369625605301316,-73.23166543401186
6900820	Night	Marsett Road	None	None		VT0040700	Not at a Junction	None	5997-6055 Shelburne Rd	Dry	0070	44.369681508743845,-73.23164409725555
6317043	Day	Marsett Rd	None	None		VT0040700	Not at a Junction	None	6007 Shelburne Rd.	Dry	0070	44.36976536108122,-73.23161209299131
5919086	Day	Marsett Rd	None	None		VT0040700	Four-way Intersection	None	Shelburne Rd at Marsett Rd	Dry	0070	44.36977427986168,-73.23160868904864
5925284	Day	Shelburne Museum	None	None		VT0040700	Not at a Junction	None	6000 Shelburne Rd	Dry	0070	44.37060567353326,-73.23130134435475
7424361	Day	Shelburne Museum	None	None		VT0040700	Not at a Junction	None	5867-5995 Shelburne Rd	Dry	0070	44.37061969363347,-73.23129623550503
7620037	Day	Bostwick Road	None	None		VT0040700	Not at a Junction	None	5922-5948 Shelburne Rd	Dry	0070	44.37068979128107,-73.23127069706617
7620924	Day		None	None		VT0040700	Not at a Junction	None	5885-5983 Shelburne Rd	Dry	0070	44.370900069171846,-73.23119401062806

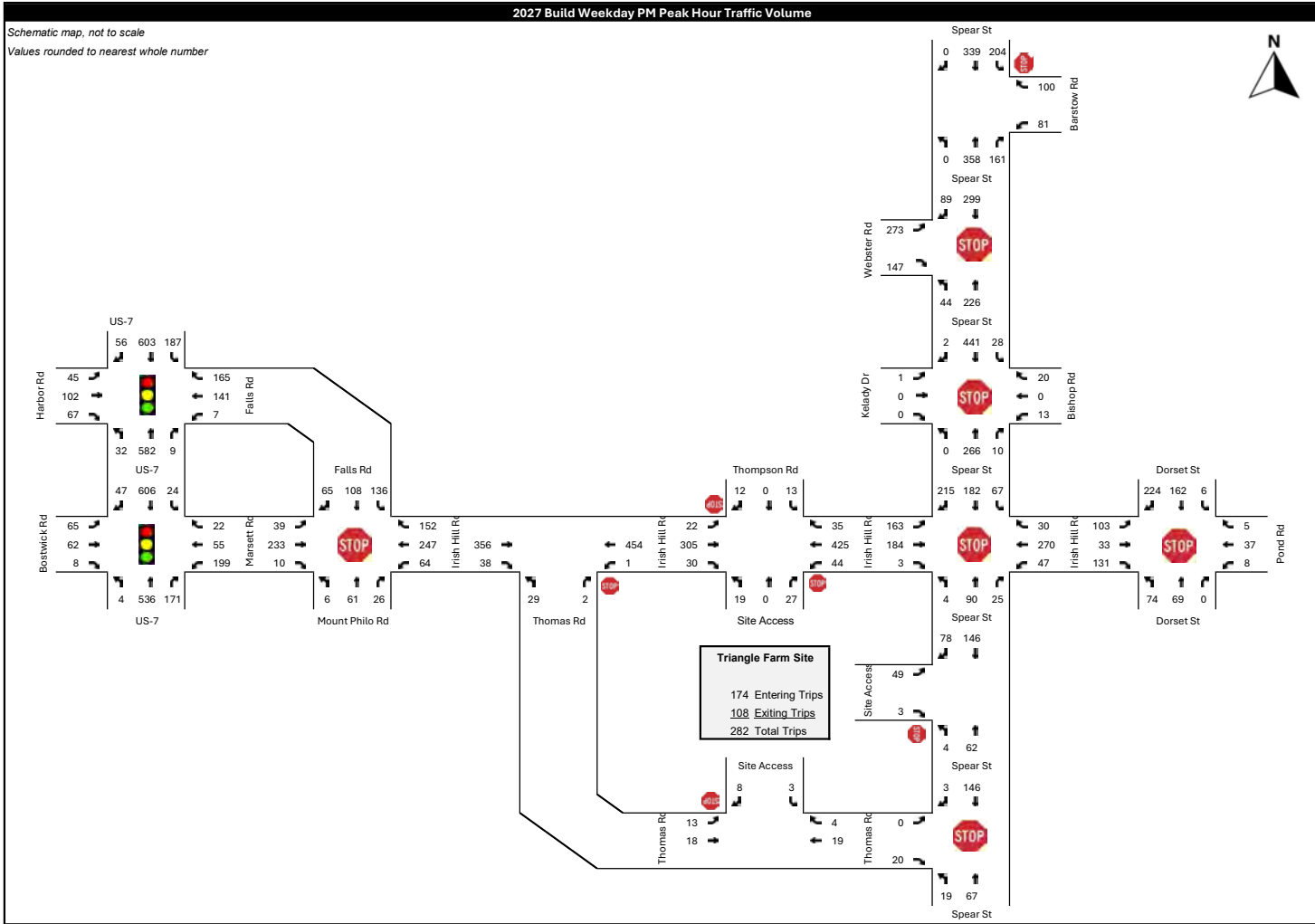
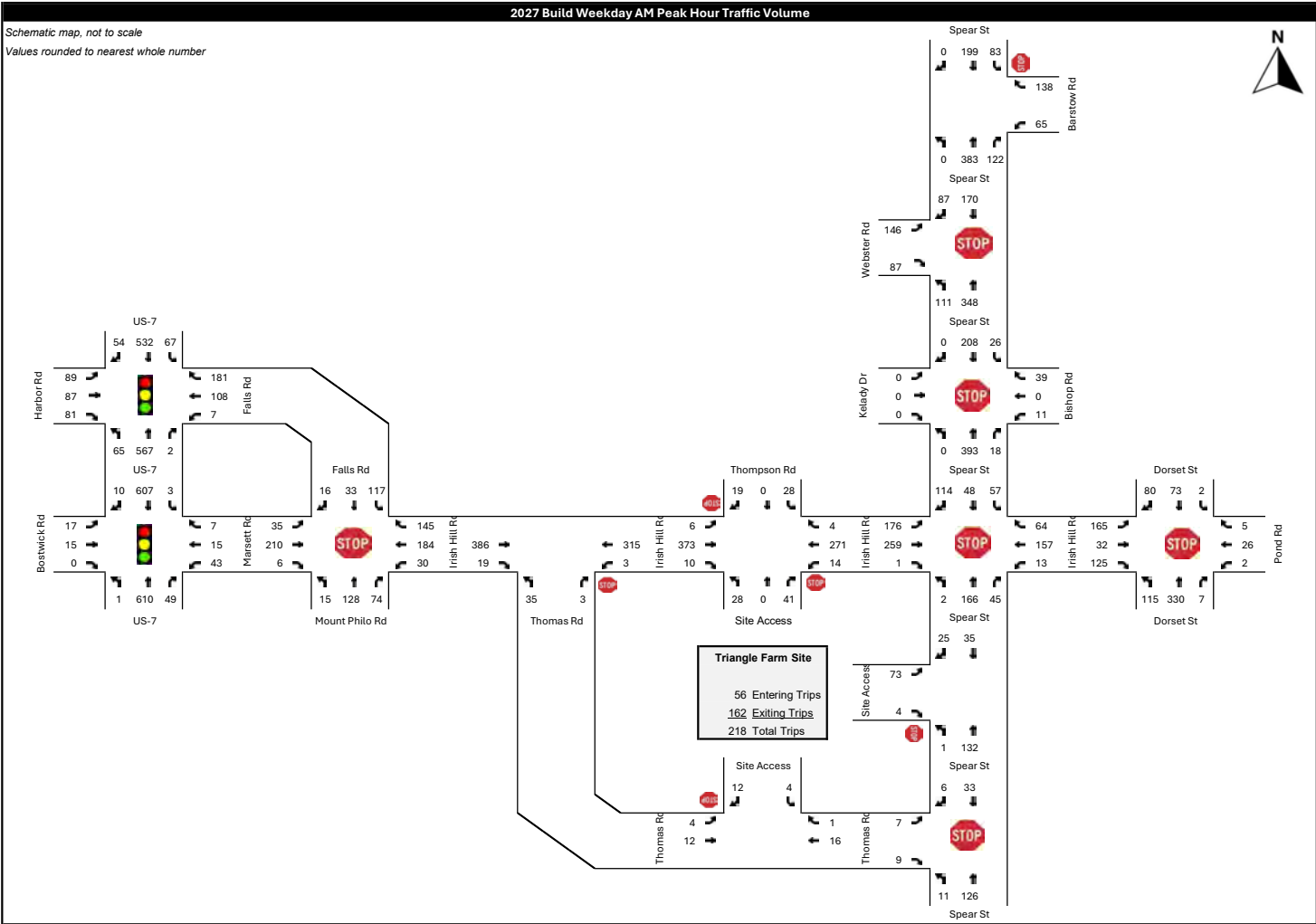


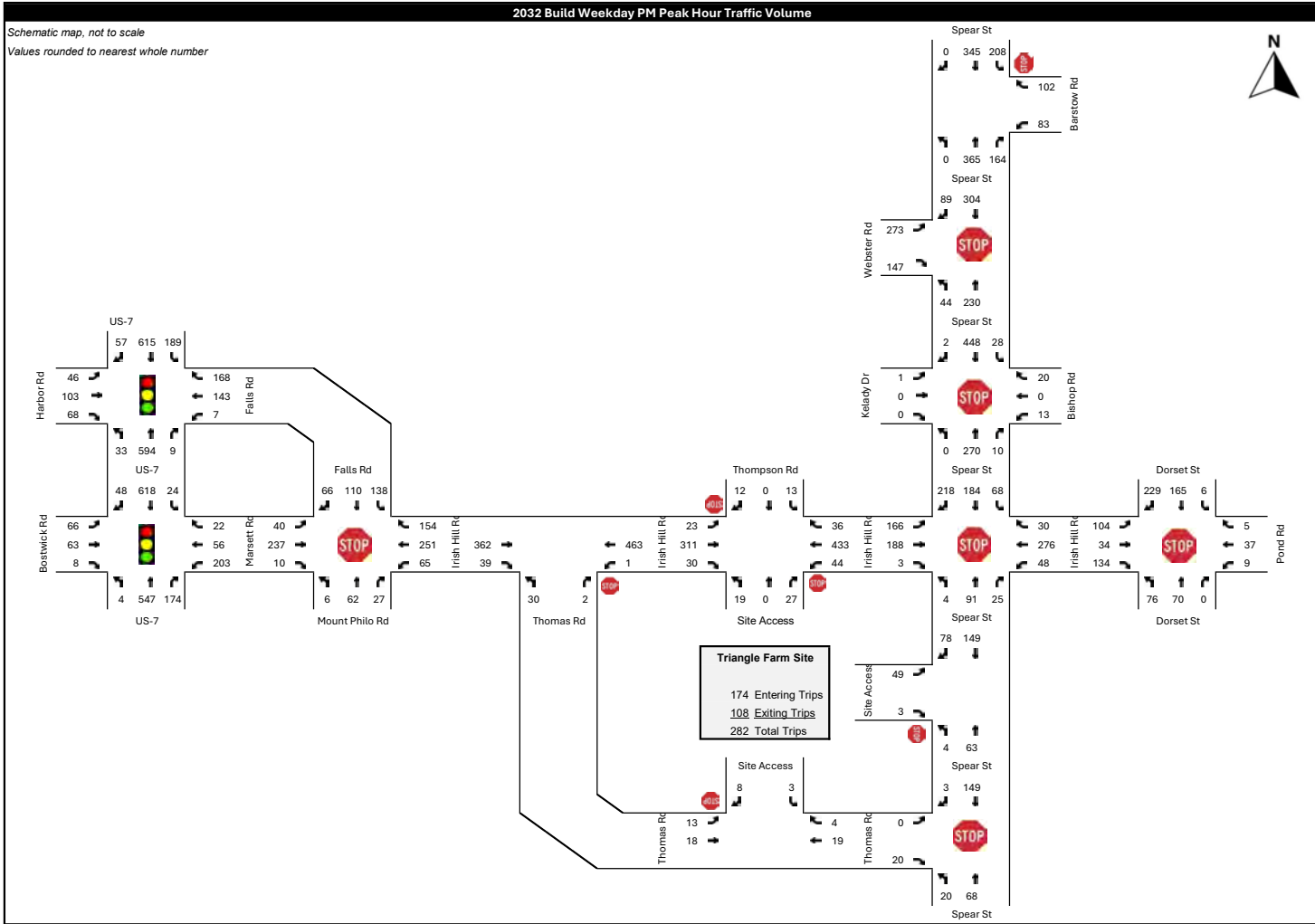
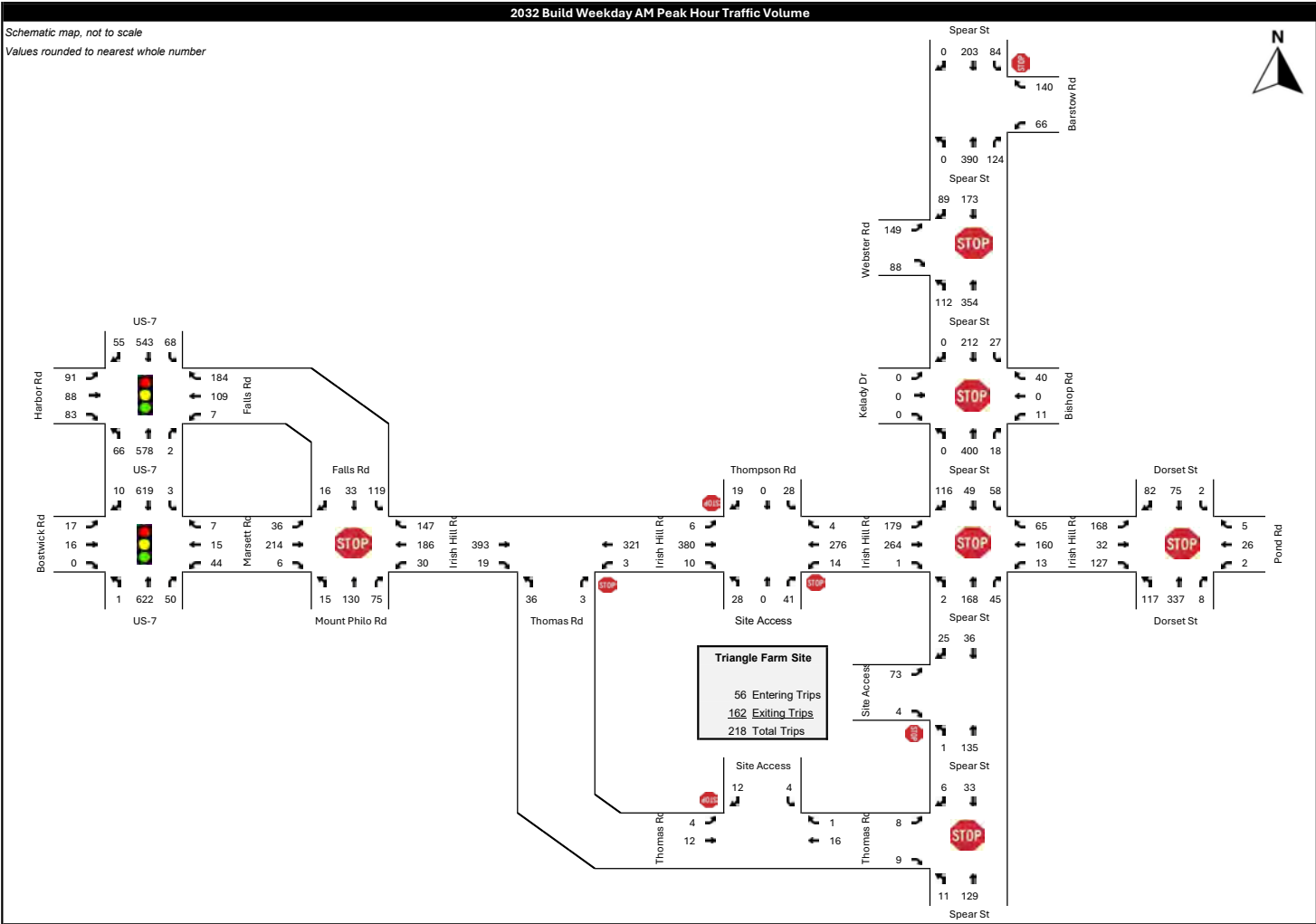
Reported Crashes through HCL 700 (US-7 mm 0.97 - 1.27, incl. Bostwick Rd), 2020 through 2024

Triangle Farm TIS, Shelburne VT









Node

Build

DATE: 09/16/202

PROJECT: 25-157

Figure D1

09/16/25 04:40 PM

Synchro
Node

Raw Count Data		DHV & Annual Adjustments (1) to 2027		DHV & Annual Adjustments (3) to 2027		Apply Adjustments	Adjusted Raw Counts	Balancing
						1 = Apply Adjustment 1 2 = Apply Adjustment 2 3 = Apply Adjustment 3		
1	Irish Hill Rd & M Phin Rd Shelburne VT 5/22/2025 4th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	37	60	6	104	Method	0
		T	204	223	58	102	DHV	600
		R	9	138	25	61	1017	2025-2027 Growth 1.004
2	Irish Hill Rd & Thomas Rd Shelburne VT 5/22/2025 4th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	0	1	20	0	Method	0
		T	307	411	0	0	DHV	600
		R	24	0	2	765	1017	2025-2027 Growth 1.004
3	Irish Hill Rd & Thompson Rd Shelburne VT 5/29/2025 5th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	21	0	0	12	Method	0
		T	304	385	0	0	DHV	600
		R	0	33	0	11	736	2025-2027 Growth 1.004
4	Irish Hill Rd & Spear St Shelburne VT 5/22/2025 4th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	139	28	4	63	Method	0
		T	164	228	0	0	DHV	600
		R	3	28	13	178	1022	2025-2027 Growth 1.004
5	Irish Hill Rd & Dorset St Shelburne VT 5/22/2025 4th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	89	8	63	6	Method	0
		T	29	31	59	135	DHV	600
		R	114	5	0	190	735	2025-2027 Growth 1.004
6	Thomson Rd & Rowser St Shelburne VT 5/22/2025 4th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	0	0	15	0	Method	0
		T	0	0	0	3	DHV	600
		R	17	0	0	3	229	2025-2027 Growth 1.004
7	Spear St & Bahcho St Shelburne VT 5/29/2025 4th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	1	13	0	28	Method	0
		T	0	0	200	334	DHV	600
		R	0	20	10	2	608	2025-2027 Growth 1.004
8	Spear St & Webster Rd Shelburne VT 5/29/2025 5th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	273	0	35	0	Method	0
		T	0	0	171	227	DHV	600
		R	118	0	0	89	913	2025-2027 Growth 1.004
9	Spear St & Barstow Rd Shelburne VT 5/29/2025 5th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	0	70	0	204	Method	0
		T	0	0	309	278	DHV	600
		R	0	100	147	0	1106	2025-2027 Growth 1.004
10	Spear St & Allen Rd Shelburne VT 5/29/2025 5th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	501	4	36	34	Method	0
		T	36	22	301	267	DHV	600
		R	67	156	9	56	1784	2025-2027 Growth 1.004
13	Site Access & Rowser St Shelburne VT	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	0	0	0	0	Method	0
		T	0	0	0	0	DHV	600
		R	0	0	0	0	1017	2025-2027 Growth 1.004
14	Site Access & Thomas Rd Shelburne VT	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2025 Analysis Year 2027 2025-2027 Growth 1.004
		L	0	0	0	0	Method	0
		T	0	0	0	0	DHV	600
		R	0	0	0	0	1017	2025-2027 Growth 1.004
15	US-7 & Falls Rd Shelburne VT 7/11/2024 2nd Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2024 Analysis Year 2027 2024-2027 Growth 1.004
		L	45	7	32	120	Method	0
		T	43	64	562	603	DHV	1,487
		R	67	156	9	56	1784	2024-2027 Growth 1.004
16	US-7 & Mesett Shelburne VT 5/22/2025 4th Thursday	EB	WB	NB	SB	ATR Station	DHV Calculations	Growth Rate 1.004 DHV Year 2024 Analysis Year 2027 2024-2027 Growth 1.004
		L	65	191	4	24	Method	0
		T	57	54	469	512	DHV	1,500
		R	8	22	158	47	1601	2024-2027 Growth 1.004

No Build

	EB	WB	NB	SB
L	22	0	0	13
T	216	236	61	108
R	10	138	25	65
Enter	265	435	94	283
Exit	337	456	0	29
Diff	0	0	0	0

	EB	WB	NB	SB
L	22	0	0	13
T	325	435	0	0
R	15	2	0	0
Enter	350	438	0	0
Exit	327	458	0	26
Diff	23	-20	0	-26

	EB	WB	NB	SB
L	22	0	0	13
T	305	425	0	0
R	10	35	0	0
Enter	317	460	0	24
Exit	318	437	57	0
Diff	0	23	-57	24

	EB	WB	NB	SB
L	147	35	4	67
T	174	213	52	121
R	3	30	14	18
Enter	254	312	70	136
Exit	248	446	229	154
Diff	6	-134	-159	-18

	EB	WB	NB	SB
L	94	8	67	6
T	121	5	212	84
R	121	5	212	84
Enter	241	467	136	370
Exit	288	481	290	797
Diff	-47	-114	-154	-427

	EB	WB	NB	SB
L	0	0	15	0
T	0	0	212	84
R	17	0	0	0
Enter	17	0	77	146
Exit	0	18	62	240
Diff	17	-18	15	-94

	EB	WB	NB	SB
L	1	13	10	13
T	0	0	212	84
R	1	0	0	0
Enter	38	2	233	307
Exit	0	2	233	307
Diff	38	0	0	0

	EB	WB	NB	SB
L	275	0	35	0
T	0	0	212	84
R	1	0	0	0
Enter	276	0	89	93
Exit	0	124	454	358
Diff	276	-124	-454	-265

	EB	WB	NB	SB
L	0	0	70	0
T	0	0	212	84
R	0	0	327	202
Enter	0	0	100	147
Exit	0	173	474	686
Diff	0	-173	-374	-539

	EB	WB	NB	SB
L	0	0	36	34
T	26	32	219	263
R	749	43	182	186
Enter	77	284	837	499
Exit	0	0	0	0
Diff	77	284	837	499

	EB	WB	NB	SB
L	0	0	62	146
T	0	0	212	84
R	0	0	62	146
Enter	0	0	62	146
Exit	0	0	62	146
Diff	0	0	0	0

	EB	WB	NB	SB
L	18	19	0	0
T	18	19	0	0
R	18	19	0	0
Enter	18	19	0	0
Exit	18	19	0	0
Diff	0	0	0	0

	EB	WB	NB	SB
L	45	7	32	107
T	805	214	682	803
R	67	158	9	56
Enter	272	222	738	977
Exit	0	0	0	0
Diff	272	222	738	977

	EB	WB	NB	SB
L	65	191	4	24
T	57	53	526	806
R	0	0	22	159
Enter	130	266	559	877
Exit	239	154	623	935
Diff	-109	-112	-64	-58

Trip Distribution (Primary)

		EB	WB	NB	SB	
L	T	10%	10%	10%	10%	10
Enter	Exit	10%	15%	0%	0%	0
		25%	10%	15%	0%	0
		EB	WB	NB	SB	
L	T	18%	18%	0%	0%	0
Enter	Exit	8%	25%	18%	0%	0
		20%	25%	10%	0%	0
		EB	WB	NB	SB	
L	T	18%	25%	43%	0%	0
Enter	Exit	18%	25%	43%	0%	0
		20%	25%	40%	0%	0
		EB	WB	NB	SB	
L	T	15%	10%	35%	35%	10
Enter	Exit	25%	20%	45%	45%	0
		20%	25%	50%	45%	0
		EB	WB	NB	SB	
L	T	8%	3%	3%	3%	0
Enter	Exit	20%	2%	4%	13%	0
		3%	3%	20%	8%	0
		EB	WB	NB	SB	
L	T	3%	3%	3%	3%	0
Enter	Exit	3%	0%	5%	3%	0
		3%	0%	3%	10%	0
		EB	WB	NB	SB	
L	T	0%	0%	50%	50%	0
Enter	Exit	0%	0%	50%	50%	0
		0%	0%	50%	50%	0
		EB	WB	NB	SB	
L	T	45%	0%	0%	34%	0
Enter	Exit	16%	0%	50%	34%	0
		0%	0%	42%	50%	0
		EB	WB	NB	SB	
L	T	18%	21%	21%	21%	0
Enter	Exit	13%	0%	42%	21%	0
		0%	6%	42%	21%	0
		EB	WB	NB	SB	
L	T	12%	0%	22%	15%	0
Enter	Exit	12%	0%	7%	22%	0
		45%	0%	7%	22%	0
		EB	WB	NB	SB	
L	T	45%	0%	0%	3%	0
Enter	Exit	48%	0%	45%	3%	0
		48%	0%	45%	3%	0
		EB	WB	NB	SB	
L	T	8%	3%	3%	3%	0
Enter	Exit	8%	3%	8%	10%	0
		3%	8%	10%	10%	0
		EB	WB	NB	SB	
L	T	5%	7%	7%	10%	0
Enter	Exit	15%	7%	8%	10%	0
		5%	7%	7%	10%	0
		EB	WB	NB	SB	
L	T	3%	8%	7%	8%	0
Enter	Exit	3%	10%	7%	8%	0
		10%	2%	0%	8%	0

Trip Generation (Primary)

		EB		WB	
L	T	17	11	16	16
Enter	Exit	17	27	27	27
Enter	Exit	44	11		
		EB		WB	
L	T	30	19		
L	T	13	14		
Enter	Exit	30	27		
		EB		WB	
L	T	16	17	44	44
L	T	30	14		
Enter	Exit	27	19		
		EB		WB	
L	T	16	17	17	17
L	T	30	14		
Enter	Exit	27	35		
		EB		WB	
L	T	8	3	4	4
L	T	11	3		
Enter	Exit	22	4		
Enter	Exit	3	35		
		EB		WB	
L	T	3			
L	T	3	0		
Enter	Exit	0	4		
		EB		WB	
L	T				
L	T	0	0		
Enter	Exit	0	0		
		EB		WB	
L	T	29			
L	T	46			
Enter	Exit	0	9		
		EB		WB	
L	T		11		
L	T	14	0		
Enter	Exit	14	0		
		EB		WB	
L	T	20			
L	T	46			
Enter	Exit	0	7		
		EB		WB	
L	T				
L	T	51	0	83	
Enter	Exit	0			
		EB		WB	
L	T	13			
L	T	13	4		
Enter	Exit	3	8		
		EB		WB	
L	T	9	7		
L	T	28	7		
Enter	Exit	9	16		
		EB		WB	
L	T		8		
L	T	5	2		
Enter	Exit	5	11		
Enter	Exit	17	2		

Build

EB		EB	
L	3	L	163
T	233	T	13
R	10	R	366
Enter	396	Enter	38
Exit	396	Exit	358
SB		EB	
L	0	L	22
T	71	T	305
R	0	R	33
Enter	0	Enter	358
Exit	0	Exit	348
SB		EB	
L	0	L	164
T	120	T	13
R	0	R	366
Enter	0	Enter	38
Exit	0	Exit	358
SB		EB	
L	61	L	103
T	28	T	13
R	197	R	366
Enter	87	Enter	351
Exit	87	Exit	276
SB		EB	
L	23	L	103
T	56	T	13
R	56	R	366
Enter	20	Enter	267
Exit	40	Exit	40
SB		EB	
L	3	L	1
T	14	T	0
R	5	R	20
Enter	0	Enter	20
Exit	0	Exit	20
SB		EB	
L	87	L	1
T	141	T	0
R	87	R	0
Enter	87	Enter	38
Exit	87	Exit	38
SB		EB	
L	58	L	151
T	141	T	173
R	87	R	141
Enter	87	Enter	247
Exit	87	Exit	0
SB		EB	
L	47	L	49
T	104	T	0
R	58	R	0
Enter	104	Enter	365
Exit	58	Exit	365
SB		EB	
L	27	L	1
T	78	T	0
R	47	R	0
Enter	47	Enter	0
Exit	47	Exit	0
SB		EB	
L	78	L	13
T	134	T	18
R	3	R	67
Enter	3	Enter	31
Exit	3	Exit	21
SB		EB	
L	3	L	13
T	28	T	18
R	0	R	67
Enter	0	Enter	31
Exit	0	Exit	21
SB		EB	
L	17	L	45
T	42	T	102
R	0	R	13
Enter	17	Enter	214
Exit	0	Exit	298
SB		EB	
L	0	L	65
T	28	T	67
R	8	R	135
Enter	0	Enter	135
Exit	0	Exit	226

Adjusted Raw Counts

1	108	1147	1147
252	181	1147	
NB	SB		
29	19		
0	0		
0	0		
31	0	881	
0	40	881	
NB	SB		
29	19		
0	0		
0	0		
77	12	931	
46	24	931	
NB	SB		
40	62		
95	218	1280	
118	483	1280	
283	232	1280	
NB	SB		
74	6		
69	162		
0	224	854	
143	393	854	
177	302	854	
NB	SB		
19	0		
26	16		
0	0	255	
85	149	255	
87	195	255	
NB	SB		
103	28		
26	11		
10	2	780	
276	474	780	
287	454	780	
NB	SB		
44	0		
208	19		
0	89	1077	
499	445	1077	
NB	SB		
0	204		
358	339		
161	0	1244	
619	453	1244	
458	421	1244	
NB	SB		
10	3		
343	310		
582	160		
453	51	1775	
861	546	1775	
NB	SB		
62	146		
0	78	342	
66	224	342	
111	149	342	
NB	SB		
0	3		
0	0		
0	0		
0	11	85	
17	0	85	
NB	SB		
32	187		
582	603		
171	0	1996	
623	846	1996	
792	687	1996	
NB	SB		
4	24		
536	606		
171	0	1799	
711	677	1799	
623	813	1799	

Balancing

		EB
		L 3
		T 10
02		R 120
02		Enter 359
		Exit 359
		EB
		L 73
02		T 332
02		R 26
02		Enter 332
		Exit 334
		EB
		L 23
02		T 308
02		R 0
02		Enter 351
		Exit 341
		EB
		L 150
02		T 177
02		R 13
02		Enter 331
		Exit 259
		EB
		L 96
02		T 39
02		R 123
02		Enter 281
		Exit 38
		EB
		L 0
02		T 0
02		R 17
02		Enter 17
		Exit 0
		EB
		L 1
02		T 0
02		R 0
02		Enter 38
		Exit 38
		EB
		L 173
02		T 754
02		R 123
02		Enter 391
		Exit 0
		EB
		L 0
02		T 0
02		R 0
02		Enter 0
		Exit 358
		EB
		L 511
02		T 37
02		R 216
02		Enter 754
		Exit 79
		EB
		L 0
02		T 0
02		R 0
02		Enter 0
		Exit 0
		EB
		L 0
02		T 18
02		R 0
02		Enter 18
		Exit 18
		EB
		L 46
02		T 44
02		R 68
02		Enter 158
		Exit 175
		EB
		L 66
02		T 58
02		R 6
02		Enter 133
		Exit 133
		EB
		L 244
02		T 0
02		R 0
02		Enter 0
		Exit 0

Balanced Adjusted Raw Counts

EB	WB	NB	SB		
L	40	65	6	112	T
T	220	240	62	110	R
R	10	138	27	66	1096
Enter	269	443	96	288	1096
Exit	339	461	0	30	826
Diff	0	0	0	0	0
NB	SB				
22	0	13			L
0	0				T
2	0				R
4	0	2	826		Enter
0	27	826			Exit
NB	SB				
22	0	13			L
0	0				T
2	0				R
4	0	25	795		Enter
58	0	795			Exit
NB	SB				
63	128				L
53	123				T
144	192	1104			R
71	383	1104			Enter
233	157	1104			Exit
NB	SB				
68	6				L
70	168				T
0	205	813			R
138	297	813			Enter
172	357	813			Exit
NB	SB				
15	0				L
0	0				T
0	3				R
79	149	245			Enter
64	163	245			Exit
NB	SB				
0	2				L
219	381				T
226	391	651			Enter
237	394	651			Exit
NB	SB				
35	0				L
0	268				T
0	185	245			R
0	89	945			Enter
458	363	945			Exit
NB	SB				
0	0				L
334	298				T
150	0	1163			R
484	506	1163			Enter
436	370	1163			Exit
NB	SB				
325	288				L
469	522				T
169	169	1731			R
854	509	1731			Enter
854	509	1731			Exit
NB	SB				
63	149				L
469	522				T
63	149	212			R
63	149	212			Enter
63	149	212			Exit
NB	SB				
0	0				L
0	0	38			T
0	0				R
0	0	38			Enter
0	0	38			Exit
NB	SB				
33	122				L
534	615				T
469	522	1820			R
636	795	1820			Enter
729	691	1820			Exit
NB	SB				
4	24				L
161	48	1633			T
635	595	1633			R
558	722	1633			Enter
558	722	1633			Exit

No Build

	WB	NB	SB	
				0
				-23
				1
	WB	NB	SB	
				0
				0
	WB	NB	SB	
				0
				7
				50
				14
				33
				14
				-6
	WB	NB	SB	
				0
				12
				8
				8
				0
				19
				16
	WB	NB	SB	
				0
				29
				29
				20
	WB	NB	SB	
				0
				0
				0
	WB	NB	SB	
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	WB	NB	SB	
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Build

EB					WB					NB					SB				
L	23	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	0	0	0
T	322	444	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enter	295	443	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit	334	466	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	150	30	0	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	0
T	117	258	53	4	68	0	0	0	68	0	0	0	0	0	0	0	0	0	0
R	10	30	14	0	192	0	0	0	192	0	0	0	0	0	0	0	0	0	0
Enter	331	319	71	71	383	0	0	0	383	0	0	0	0	0	0	0	0	0	0
Exit	259	455	233	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diff	72	-136	-122	-86	383	0	0	0	383	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	0	0	0	0	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0
T	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enter	0	18	54	3	69	0	0	0	69	0	0	0	0	0	0	0	0	0	0
Exit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diff	0	18	54	3	69	0	0	0	69	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	0	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	1	0	13	0	28	0	0	0	28	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	22	0	0	0	22	0	0	0	0	0	0	0	0	0	0
Enter	38	2	23	31	91	0	0	0	91	0	0	0	0	0	0	0	0	0	0
Exit	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diff	38	2	23	31	91	0	0	0	91	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	118	0	0	0	35	0	0	0	35	0	0	0	0	0	0	0	0	0	0
T	68	159	9	0	208	0	0	0	208	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	89	0	0	0	89	0	0	0	0	0	0	0	0	0	0
Enter	0	321	0	0	220	334	0	0	554	0	0	0	0	0	0	0	0	0	0
Exit	0	124	458	363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diff	0	207	-458	-363	220	334	0	0	554	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	0	0	0	0	71	0	0	0	71	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit	358	0	0	0	436	370	0	0	828	0	0	0	0	0	0	0	0	0	0
Diff	-358	0	0	0	-436	-370	0	0	-828	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	0	0	0	0	71	0	0	0	71	0	0	0	0	0	0	0	0	0	0
T	37	22	325	288	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	130	0	0	0	130	0	0	0	0	0	0	0	0	0	0
Enter	T	216	17	2	169	0	0	0	169	0	0	0	0	0	0	0	0	0	0
Exit	0	74	44	4	122	0	0	0	122	0	0	0	0	0	0	0	0	0	0
Diff	37	290	854	209	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	0	0	0	0	63	149	0	0	212	0	0	0	0	0	0	0	0	0	0
T	68	159	9	0	208	0	0	0	208	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	89	0	0	0	89	0	0	0	0	0	0	0	0	0	0
Enter	0	0	0	0	63	149	0	0	212	0	0	0	0	0	0	0	0	0	0
Exit	0	0	0	0	63	149	0	0	212	0	0	0	0	0	0	0	0	0	0
Diff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	18	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	68	159	9	0	208	0	0	0	208	0	0	0	0	0	0	0	0	0	0
R	18	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enter	18	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit	18	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	46	7	33	172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	94	135	594	615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	46	7	33	172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enter	208	302	630	645	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit	275	225	799	691	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diff	-67	77	-169	-46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EB					WB					NB					SB				
L	66	195	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	58	84	547	618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	8	22	161	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enter	133	271	712	691	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit	244	198	638	621	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diff	-111	73	74	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	204	6	30	167	121	15	128	74	109	33	16
Future Vol, veh/h	35	204	6	30	167	121	15	128	74	109	33	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	1	1	1	5	5	5
Mvmt Flow	35	204	6	30	167	121	15	128	74	109	33	16
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12	12.8	11.4	11.2
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	14%	9%	69%
Vol Thru, %	59%	83%	53%	21%
Vol Right, %	34%	2%	38%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	245	318	158
LT Vol	15	35	30	109
Through Vol	128	204	167	33
RT Vol	74	6	121	16
Lane Flow Rate	217	245	318	158
Geometry Grp	1	1	1	1
Degree of Util (X)	0.335	0.379	0.463	0.263
Departure Headway (Hd)	5.551	5.564	5.243	5.987
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	644	644	684	597
Service Time	3.612	3.623	3.297	4.053
HCM Lane V/C Ratio	0.337	0.38	0.465	0.265
HCM Control Delay, s/veh	11.4	12	12.8	11.2
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.5	1.8	2.5	1.1

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	376	15	3	287	23	3
Future Vol, veh/h	376	15	3	287	23	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	0	0
Mvmt Flow	376	15	3	287	23	3

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	391
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.13
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.227
Pot Cap-1 Maneuver	-	-	1162
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1162
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.08	13.71
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	439	-	-	19	-
HCM Lane V/C Ratio	0.059	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 7th TWSC
3: Irish Hill Rd & Thompson Rd

09/16/2025

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	373	0	0	271	4	0	0	0	28	0	19
Future Vol, veh/h	6	373	0	0	271	4	0	0	0	28	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	2	2	2
Mvmt Flow	6	373	0	0	271	4	0	0	0	28	0	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	275	0	0	373	0	0	656	660	373	658	658	273
Stage 1	-	-	-	-	-	-	385	385	-	273	273	-
Stage 2	-	-	-	-	-	-	271	275	-	385	385	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1288	-	-	1185	-	-	382	386	678	378	384	766
Stage 1	-	-	-	-	-	-	642	614	-	733	684	-
Stage 2	-	-	-	-	-	-	739	686	-	638	611	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1288	-	-	1185	-	-	370	383	678	375	382	766
Mov Cap-2 Maneuver	-	-	-	-	-	-	370	383	-	375	382	-
Stage 1	-	-	-	-	-	-	638	611	-	733	684	-
Stage 2	-	-	-	-	-	-	721	686	-	634	607	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.12	0	0	13.45
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	28	-	-	1185	-	-	473
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	0.099
HCM Ctrl Dly (s/v)	0	7.8	0	-	0	-	-	13.5
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.3

01 - 2027 AM No Build 4:15 pm 08/21/2025 Baseline

Synchro 12 Report
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Intersection

Intersection Delay, s/veh 12.9

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	151	242	1	7	151	64	2	109	29	57	29	106
Future Vol, veh/h	151	242	1	7	151	64	2	109	29	57	29	106
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	4	4	4
Mvmt Flow	151	242	1	7	151	64	2	109	29	57	29	106
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15.7	11.1	10.6	11.1
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	38%	3%	30%
Vol Thru, %	78%	61%	68%	15%
Vol Right, %	21%	0%	29%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	394	222	192
LT Vol	2	151	7	57
Through Vol	109	242	151	29
RT Vol	29	1	64	106
Lane Flow Rate	140	394	222	192
Geometry Grp	1	1	1	1
Degree of Util (X)	0.227	0.585	0.331	0.3
Departure Headway (Hd)	5.834	5.342	5.373	5.618
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	612	674	666	637
Service Time	3.898	3.387	3.428	3.676
HCM Lane V/C Ratio	0.229	0.585	0.333	0.301
HCM Control Delay, s/veh	10.6	15.7	11.1	11.1
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	0.9	3.8	1.4	1.3

Intersection

Intersection Delay, s/veh 13.9

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	148	29	112	2	24	5	109	330	7	2	73	76
Future Vol, veh/h	148	29	112	2	24	5	109	330	7	2	73	76
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	7	7	7	1	1	1	3	3	3
Mvmt Flow	148	29	112	2	24	5	109	330	7	2	73	76
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	2.7	9.4	16.5	9.7
HCM LOS	B	A	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	51%	6%	1%
Vol Thru, %	74%	10%	77%	48%
Vol Right, %	2%	39%	16%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	446	289	31	151
LT Vol	109	148	2	2
Through Vol	330	29	24	73
RT Vol	7	112	5	76
Lane Flow Rate	446	289	31	151
Geometry Grp	1	1	1	1
Degree of Util (X)	0.632	0.437	0.052	0.219
Departure Headway (Hd)	5.103	5.443	6.04	5.225
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	709	662	591	686
Service Time	3.134	3.479	4.092	3.265
HCM Lane V/C Ratio	0.629	0.437	0.052	0.22
HCM Control Delay, s/veh	16.5	12.7	9.4	9.7
HCM Lane LOS	C	B	A	A
HCM 95th-tile Q	4.5	2.2	0.2	0.8

Intersection

Intersection Delay, s/veh 7.6

Intersection LOS A

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 7 5 10 125 29 6

Future Vol, veh/h 7 5 10 125 29 6

Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00

Heavy Vehicles, % 8 8 2 2 6 6

Mvmt Flow 7 5 10 125 29 6

Number of Lanes 1 0 0 1 1 0

Approach EB NB SB

Opposing Approach SB NB

Opposing Lanes 0 1 1

Conflicting Approach Left SB EB

Conflicting Lanes Left 1 1 0

Conflicting Approach Right NB EB

Conflicting Lanes Right 1 0 1

HCM Control Delay, s/veh 7.3 7.7 7.2

HCM LOS A A A

Lane NBLn1 EBLn1 SBLn1

Vol Left, % 7% 58% 0%

Vol Thru, % 93% 0% 83%

Vol Right, % 0% 42% 17%

Sign Control Stop Stop Stop

Traffic Vol by Lane 135 12 35

LT Vol 10 7 0

Through Vol 125 0 29

RT Vol 0 5 6

Lane Flow Rate 135 12 35

Geometry Grp 1 1 1

Degree of Util (X) 0.15 0.014 0.039

Departure Headway (Hd) 3.996 4.195 4.021

Convergence, Y/N Yes Yes Yes

Cap 900 844 889

Service Time 2.009 2.268 2.052

HCM Lane V/C Ratio 0.15 0.014 0.039

HCM Control Delay, s/veh 7.7 7.3 7.2

HCM Lane LOS A A A

HCM 95th-tile Q 0.5 0 0.1

Intersection

Intersection Delay, s/veh 9.4

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	0	0	11	0	39	0	312	18	26	180	0
Future Vol, veh/h	0	0	0	11	0	39	0	312	18	26	180	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	9	9	9	2	2	2	3	3	3
Mvmt Flow	0	0	0	11	0	39	0	312	18	26	180	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0	8.2	9.9	8.9
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	22%	13%
Vol Thru, %	95%	100%	0%	87%
Vol Right, %	5%	0%	78%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	330	0	50	206
LT Vol	0	0	11	26
Through Vol	312	0	0	180
RT Vol	18	0	39	0
Lane Flow Rate	330	0	50	206
Geometry Grp	1	1	1	1
Degree of Util (X)	0.389	0	0.066	0.253
Departure Headway (Hd)	4.249	5.139	4.787	4.427
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	851	0	749	814
Service Time	2.249	3.17	2.813	2.442
HCM Lane V/C Ratio	0.388	0	0.067	0.253
HCM Control Delay, s/veh	9.9	8.2	8.2	8.9
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	1.9	0	0.2	1

Intersection

Intersection Delay, s/veh 11.7

Intersection LOS B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations 

Traffic Vol, veh/h	146	77	91	287	151	87
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Future Vol, veh/h	146	77	91	287	151	87
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Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
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Heavy Vehicles, %	5	5	3	3	3	3
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Mvmt Flow	146	77	91	287	151	87
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Number of Lanes	1	0	0	1	1	0
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Approach	EB	NB	SB
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Opposing Approach		SB	NB
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Opposing Lanes	0	1	1
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Conflicting Approach Left SB		EB	
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Conflicting Lanes Left	1	1	0
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Conflicting Approach Right NB			EB
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Conflicting Lanes Right	1	0	1
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HCM Control Delay, s/veh	11.1	13.1	10.1
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HCM LOS	B	B	B
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Lane	NBLn1	EBLn1	SBLn1
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Vol Left, %	24%	65%	0%
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Vol Thru, %	76%	0%	63%
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Vol Right, %	0%	35%	37%
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Sign Control	Stop	Stop	Stop
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Traffic Vol by Lane	378	223	238
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LT Vol	91	146	0
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Through Vol	287	0	151
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RT Vol	0	77	87
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Lane Flow Rate	378	223	238
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Geometry Grp	1	1	1
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Degree of Util (X)	0.513	0.33	0.317
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Departure Headway (Hd)	4.884	5.324	4.794
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Convergence, Y/N	Yes	Yes	Yes
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Cap	733	667	740
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Service Time	2.959	3.419	2.88
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HCM Lane V/C Ratio	0.516	0.334	0.322
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HCM Control Delay, s/veh	13.1	11.1	10.1
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HCM Lane LOS	B	B	B
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HCM 95th-tile Q	3	1.4	1.4
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Intersection

Int Delay, s/veh 4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	138	337	107	83	185
Future Vol, veh/h	60	138	337	107	83	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	138	337	107	83	185

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	742	391	0
Stage 1	391	-	-
Stage 2	351	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	383	658	-
Stage 1	684	-	-
Stage 2	713	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	352	658	-
Mov Cap-2 Maneuver	352	-	-
Stage 1	684	-	-
Stage 2	654	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	16.1	0	2.63
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	521	557
HCM Lane V/C Ratio	-	-	0.38	0.074
HCM Ctrl Dly (s/v)	-	-	16.1	8.5
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.8	0.2

HCM Signalized Intersection Capacity Analysis

10: Spear St & Allen Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	22	108	2	42	43	173	318	2	11	168	193
Future Volume (vph)	150	22	108	2	42	43	173	318	2	11	168	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.92		1.00	1.00		1.00	0.92	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1716	1531	1745	1674		1711	1799		1711	1656	
Flt Permitted		0.69	1.00	0.65	1.00		0.38	1.00		0.57	1.00	
Satd. Flow (perm)		1242	1531	1191	1674		691	1799		1020	1656	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	150	22	108	2	42	43	173	318	2	11	168	193
RTOR Reduction (vph)	0	0	78	0	28	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	172	30	2	57	0	173	320	0	11	330	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		20.2	20.2	20.2	20.2		40.5	34.4		30.3	29.3	
Effective Green, g (s)		20.2	20.2	20.2	20.2		40.5	34.4		30.3	29.3	
Actuated g/C Ratio		0.27	0.27	0.27	0.27		0.55	0.47		0.41	0.40	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		340	420	326	459		464	840		429	659	
v/s Ratio Prot					0.03		c0.03	c0.18		0.00	c0.20	
v/s Ratio Perm		c0.14	0.02	0.00			0.17			0.01		
v/c Ratio		0.51	0.07	0.01	0.12		0.37	0.38		0.03	0.50	
Uniform Delay, d1		22.5	19.8	19.4	20.1		9.1	12.7		12.8	16.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.1	0.0	0.1		0.5	1.3		0.0	2.7	
Delay (s)		23.7	19.8	19.4	20.2		9.6	14.0		12.8	19.4	
Level of Service		C	B	B	C		A	B		B	B	
Approach Delay (s/veh)		22.2			20.2			12.5			19.2	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			73.6			Sum of lost time (s)				27.0		
Intersection Capacity Utilization			61.4%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

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Intersection

Int Delay, s/veh 0

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 0 0 0 132 35 0

Future Vol, veh/h 0 0 0 132 35 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 0 0 0 132 35 0

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 167 35 35 0 - 0

Stage 1 35 - - - - -

Stage 2 132 - - - - -

Critical Hdwy 6.4 6.2 4.1 - - -

Critical Hdwy Stg 1 5.4 - - - - -

Critical Hdwy Stg 2 5.4 - - - - -

Follow-up Hdwy 3.5 3.3 2.2 - - -

Pot Cap-1 Maneuver 828 1044 1589 - - -

Stage 1 993 - - - - -

Stage 2 899 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 828 1044 1589 - - -

Mov Cap-2 Maneuver 828 - - - - -

Stage 1 993 - - - - -

Stage 2 899 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 0 0 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1589 - - - -

HCM Lane V/C Ratio - - - -

HCM Ctrl Dly (s/v) 0 - 0 - -

HCM Lane LOS A - A - -

HCM 95th %tile Q(veh) 0 - - - -

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	16	0	0	0
Future Vol, veh/h	0	12	16	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	12	16	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	16	0	0 28 16
Stage 1	-	-	- 16 -
Stage 2	-	-	- 12 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1615	-	- 992 1069
Stage 1	-	-	- 1012 -
Stage 2	-	-	- 1016 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1615	-	- 992 1069
Mov Cap-2 Maneuver	-	-	- 992 -
Stage 1	-	-	- 1012 -
Stage 2	-	-	- 1016 -

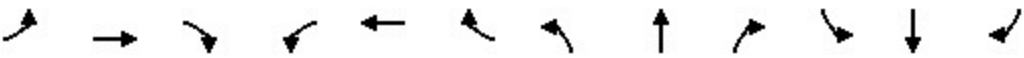
Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1615	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM Signalized Intersection Capacity Analysis

15: US-7 & Harbor Rd/Falls Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	89	82	81	7	99	166	65	567	2	63	532	54
Future Volume (vph)	89	82	81	7	99	166	65	567	2	63	532	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1640			1760	1477	1558	1639		1544	1599	
Flt Permitted		0.98			1.00	1.00	0.13	1.00		0.15	1.00	
Satd. Flow (perm)		1640			1760	1477	210	1639		251	1599	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	89	82	81	7	99	166	65	567	2	63	532	54
RTOR Reduction (vph)	0	15	0	0	0	138	0	0	0	0	3	0
Lane Group Flow (vph)	0	237	0	0	106	28	65	569	0	63	583	0
Confl. Peds. (#/hr)	2		5	5		2	1					1
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	12%	12%	12%	13%	13%	13%
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases						8	2			6		
Actuated Green, G (s)		17.8			10.1	17.7	40.9	36.3		46.9	39.3	
Effective Green, g (s)		17.8			10.1	17.7	40.9	36.3		46.9	39.3	
Actuated g/C Ratio		0.17			0.10	0.17	0.39	0.35		0.45	0.37	
Clearance Time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		277			168	248	140	565		205	597	
v/s Ratio Prot		c0.14			c0.06	0.01	0.02	0.35		c0.02	c0.36	
v/s Ratio Perm						0.01	0.16			0.11		
v/c Ratio		0.86			0.63	0.11	0.46	1.01		0.31	0.98	
Uniform Delay, d1		42.5			45.8	37.1	42.4	34.4		36.8	32.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		21.2			5.6	0.1	0.9	39.6		0.3	31.5	
Delay (s)		63.7			51.3	37.2	43.3	74.1		37.1	63.9	
Level of Service		E			D	D	D	E		D	E	
Approach Delay (s/veh)		63.7			42.7			70.9			61.3	
Approach LOS		E			D			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			62.2									HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			105.2									Sum of lost time (s) 32.0
Intersection Capacity Utilization			73.1%									ICU Level of Service D
Analysis Period (min)			15									

c Critical Lane Group

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HCM Signalized Intersection Capacity Analysis

16: US-7 & Bostwick Rd/Marsett St

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	14	0	31	11	7	1	610	45	3	607	10
Future Volume (vph)	17	14	0	31	11	7	1	610	45	3	607	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.98			0.99			1.00	
Flt Protected	0.95	1.00			0.97			1.00			1.00	
Satd. Flow (prot)	1694	1783			1679			1685			1636	
Flt Permitted	1.00	1.00			0.96			1.00			1.00	
Satd. Flow (perm)	1783	1783			1663			1684			1633	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	14	0	31	11	7	1	610	45	3	607	10
RTOR Reduction (vph)	0	0	0	0	7	0	0	2	0	0	1	0
Lane Group Flow (vph)	17	14	0	0	42	0	0	654	0	0	619	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	8%	8%	8%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	3.4	3.4			3.4			43.7			43.7	
Effective Green, g (s)	3.4	3.4			3.4			43.7			43.7	
Actuated g/C Ratio	0.06	0.06			0.06			0.74			0.74	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	102	102			95			1245			1207	
v/s Ratio Prot		0.01										
v/s Ratio Perm	0.01				c0.03			c0.39			0.38	
v/c Ratio	0.17	0.14			0.45			0.53			0.51	
Uniform Delay, d1	26.5	26.5			26.9			3.3			3.2	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.8	0.6			3.3			1.6			1.6	
Delay (s)	27.3	27.1			30.3			4.9			4.8	
Level of Service	C	C			C			A			A	
Approach Delay (s/veh)		27.2			30.3			4.9			4.8	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			6.3									
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			59.1									
Intersection Capacity Utilization			54.9%									
Analysis Period (min)			15									
c Critical Lane Group												

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Intersection

Intersection Delay, s/veh 15.1

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	216	10	64	236	136	6	61	26	110	108	65
Future Vol, veh/h	39	216	10	64	236	136	6	61	26	110	108	65
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	39	216	10	64	236	136	6	61	26	110	108	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	13.2	17.9	10.6	14.1
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	15%	15%	39%
Vol Thru, %	66%	82%	54%	38%
Vol Right, %	28%	4%	31%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	265	436	283
LT Vol	6	39	64	110
Through Vol	61	216	236	108
RT Vol	26	10	136	65
Lane Flow Rate	93	265	436	283
Geometry Grp	1	1	1	1
Degree of Util (X)	0.165	0.426	0.648	0.466
Departure Headway (Hd)	6.386	5.785	5.349	5.926
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	565	617	671	603
Service Time	4.386	3.874	3.427	4.012
HCM Lane V/C Ratio	0.165	0.429	0.65	0.469
HCM Control Delay, s/veh	10.6	13.2	17.9	14.1
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	2.1	4.7	2.5

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	325	25	1	435	21	2
Future Vol, veh/h	325	25	1	435	21	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	0	0	0	0
Mvmt Flow	325	25	1	435	21	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	350
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1220
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1220
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.02	14.94
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	385	-	-	4	-
HCM Lane V/C Ratio	0.06	-	-	0.001	-
HCM Ctrl Dly (s/v)	14.9	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	305	0	0	425	35	0	0	0	13	0	12
Future Vol, veh/h	22	305	0	0	425	35	0	0	0	13	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	305	0	0	425	35	0	0	0	13	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	460	0	0	305	0	0	774	809	305	792	792	443
Stage 1	-	-	-	-	-	-	349	349	-	443	443	-
Stage 2	-	-	-	-	-	-	425	460	-	349	349	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1106	-	-	1267	-	-	318	317	740	310	324	619
Stage 1	-	-	-	-	-	-	671	637	-	598	579	-
Stage 2	-	-	-	-	-	-	611	569	-	671	637	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1106	-	-	1267	-	-	304	309	740	302	316	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	304	309	-	302	316	-
Stage 1	-	-	-	-	-	-	655	622	-	598	579	-
Stage 2	-	-	-	-	-	-	599	569	-	655	622	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.56	0	0	14.58
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	121	-	-	1267	-	-	401
HCM Lane V/C Ratio	-	0.02	-	-	-	-	-	0.062
HCM Ctrl Dly (s/v)	0	8.3	0	-	0	-	-	14.6
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.2

Intersection

Intersection Delay, s/veh 15.1

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	147	174	3	30	253	30	4	52	14	67	121	188
Future Vol, veh/h	147	174	3	30	253	30	4	52	14	67	121	188
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	0	0	0	2	2	2	0	0	0
Mvmt Flow	147	174	3	30	253	30	4	52	14	67	121	188
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15.5	14.5	10.5	16.2
HCM LOS	C	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	45%	10%	18%
Vol Thru, %	74%	54%	81%	32%
Vol Right, %	20%	1%	10%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	324	313	376
LT Vol	4	147	30	67
Through Vol	52	174	253	121
RT Vol	14	3	30	188
Lane Flow Rate	70	324	313	376
Geometry Grp	1	1	1	1
Degree of Util (X)	0.127	0.529	0.5	0.582
Departure Headway (Hd)	6.551	5.881	5.754	5.577
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	551	609	620	643
Service Time	4.551	3.967	3.841	3.66
HCM Lane V/C Ratio	0.127	0.532	0.505	0.585
HCM Control Delay, s/veh	10.5	15.5	14.5	16.2
HCM Lane LOS	B	C	B	C
HCM 95th-tile Q	0.4	3.1	2.8	3.8

Intersection

Intersection Delay, s/veh 10.7

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	94	31	121	8	33	5	67	69	0	6	162	201
Future Vol, veh/h	94	31	121	8	33	5	67	69	0	6	162	201
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	0	0	0	1	1	1	0	0	0
Mvmt Flow	94	31	121	8	33	5	67	69	0	6	162	201
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0.6	8.9	9.6	11.4
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	49%	38%	17%	2%
Vol Thru, %	51%	13%	72%	44%
Vol Right, %	0%	49%	11%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	136	246	46	369
LT Vol	67	94	8	6
Through Vol	69	31	33	162
RT Vol	0	121	5	201
Lane Flow Rate	136	246	46	369
Geometry Grp	1	1	1	1
Degree of Util (X)	0.196	0.337	0.07	0.46
Departure Headway (Hd)	5.181	4.934	5.499	4.487
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	684	721	656	797
Service Time	3.274	3.021	3.499	2.557
HCM Lane V/C Ratio	0.199	0.341	0.07	0.463
HCM Control Delay, s/veh	9.6	10.6	8.9	11.4
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.7	1.5	0.2	2.4

Intersection

Intersection Delay, s/veh 7.6

Intersection LOS A

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 0 17 15 62 143 3

Future Vol, veh/h 0 17 15 62 143 3

Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00

Heavy Vehicles, % 0 0 1 1 0 0

Mvmt Flow 0 17 15 62 143 3

Number of Lanes 1 0 0 1 1 0

Approach EB NB SB

Opposing Approach SB NB

Opposing Lanes 0 1 1

Conflicting Approach Left SB EB

Conflicting Lanes Left 1 1 0

Conflicting Approach Right NB EB

Conflicting Lanes Right 1 0 1

HCM Control Delay, s/veh 6.8 7.5 7.8

HCM LOS A A A

Lane NBLn1 EBLn1 SBLn1

Vol Left, % 19% 0% 0%

Vol Thru, % 81% 0% 98%

Vol Right, % 0% 100% 2%

Sign Control Stop Stop Stop

Traffic Vol by Lane 77 17 146

LT Vol 15 0 0

Through Vol 62 0 143

RT Vol 0 17 3

Lane Flow Rate 77 17 146

Geometry Grp 1 1 1

Degree of Util (X) 0.088 0.017 0.161

Departure Headway (Hd) 4.095 3.679 3.974

Convergence, Y/N Yes Yes Yes

Cap 874 954 904

Service Time 2.125 1.774 1.995

HCM Lane V/C Ratio 0.088 0.018 0.162

HCM Control Delay, s/veh 7.5 6.8 7.8

HCM Lane LOS A A A

HCM 95th-tile Q 0.3 0.1 0.6

Intersection

Intersection Delay, s/veh 9.9

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	1	0	0	13	0	20	0	212	10	28	354	2
Future Vol, veh/h	1	0	0	13	0	20	0	212	10	28	354	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	3	3	3	0	0	0	1	1	1
Mvmt Flow	1	0	0	13	0	20	0	212	10	28	354	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.2	8.9	10.6
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	39%	7%
Vol Thru, %	95%	0%	0%	92%
Vol Right, %	5%	0%	61%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	1	33	384
LT Vol	0	1	13	28
Through Vol	212	0	0	354
RT Vol	10	0	20	2
Lane Flow Rate	222	1	33	384
Geometry Grp	1	1	1	1
Degree of Util (X)	0.267	0.002	0.045	0.443
Departure Headway (Hd)	4.336	5.455	4.963	4.154
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	833	658	724	852
Service Time	2.343	3.469	2.976	2.248
HCM Lane V/C Ratio	0.267	0.002	0.046	0.451
HCM Control Delay, s/veh	8.9	8.5	8.2	10.6
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1.1	0	0.1	2.3

Intersection

Intersection Delay, s/veh 13.6

Intersection LOS B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	273	118	35	181	240	89
Future Vol, veh/h	273	118	35	181	240	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	273	118	35	181	240	89
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	5.4	11.4	12.9
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	16%	70%	0%
Vol Thru, %	84%	0%	73%
Vol Right, %	0%	30%	27%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	216	391	329
LT Vol	35	273	0
Through Vol	181	0	240
RT Vol	0	118	89
Lane Flow Rate	216	391	329
Geometry Grp	1	1	1
Degree of Util (X)	0.335	0.577	0.475
Departure Headway (Hd)	5.577	5.313	5.198
Convergence, Y/N	Yes	Yes	Yes
Cap	644	680	694
Service Time	3.618	3.348	3.235
HCM Lane V/C Ratio	0.335	0.575	0.474
HCM Control Delay, s/veh	11.4	15.4	12.9
HCM Lane LOS	B	C	B
HCM 95th-tile Q	1.5	3.7	2.6

Intersection						
Int Delay, s/veh	5.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	100	327	147	204	292
Future Vol, veh/h	70	100	327	147	204	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	70	100	327	147	204	292

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1101	401	0
Stage 1	401	-	-
Stage 2	700	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	236	652	-
Stage 1	679	-	-
Stage 2	494	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	183	652	-
Mov Cap-2 Maneuver	183	-	-
Stage 1	679	-	-
Stage 2	384	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	28.68	0	3.72
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	317	740
HCM Lane V/C Ratio	-	-	0.535	0.187
HCM Ctrl Dly (s/v)	-	-	28.7	9
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	3	0.7

HCM Signalized Intersection Capacity Analysis

10: Spear St & Allen Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	501	36	212	4	22	17	96	319	7	34	283	166
Future Volume (vph)	501	36	212	4	22	17	96	319	7	34	283	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00		1.00	0.94	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730	1546	1745	1698		1745	1831		1745	1735	
Flt Permitted		0.71	1.00	0.27	1.00		0.23	1.00		0.45	1.00	
Satd. Flow (perm)		1289	1546	493	1698		431	1831		826	1735	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	501	36	212	4	22	17	96	319	7	34	283	166
RTOR Reduction (vph)	0	0	74	0	10	0	0	1	0	0	18	0
Lane Group Flow (vph)	0	537	138	4	29	0	96	325	0	34	431	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		34.1	34.1	34.1	34.1		31.1	26.4		28.7	25.2	
Effective Green, g (s)		34.1	34.1	34.1	34.1		31.1	26.4		28.7	25.2	
Actuated g/C Ratio		0.42	0.42	0.42	0.42		0.38	0.32		0.35	0.31	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		536	642	205	706		238	589		328	533	
v/s Ratio Prot					0.02		c0.02	0.18		0.00	c0.25	
v/s Ratio Perm		c0.42	0.09	0.01			0.13			0.03		
v/c Ratio		1.00	0.22	0.02	0.04		0.40	0.55		0.10	0.81	
Uniform Delay, d1		24.0	15.4	14.1	14.2		18.1	22.9		17.8	26.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		39.3	0.2	0.0	0.0		1.1	3.7		0.1	12.5	
Delay (s)		63.3	15.5	14.1	14.3		19.2	26.6		18.0	38.6	
Level of Service		E	B	B	B		B	C		B	D	
Approach Delay (s/veh)		49.8			14.2			24.9			37.2	
Approach LOS		D			B			C			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			39.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			82.0				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			81.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

02 - 2027 PM No Build 4:17 pm 08/21/2025 Baseline

Synchro 12 Report
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Intersection

Int Delay, s/veh 0

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 0 0 0 62 146 0

Future Vol, veh/h 0 0 0 62 146 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 0 0 0 62 146 0

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 208 146 146 0 - 0

Stage 1 146 - - - - -

Stage 2 62 - - - - -

Critical Hdwy 6.4 6.2 4.1 - - -

Critical Hdwy Stg 1 5.4 - - - - -

Critical Hdwy Stg 2 5.4 - - - - -

Follow-up Hdwy 3.5 3.3 2.2 - - -

Pot Cap-1 Maneuver 785 906 1448 - - -

Stage 1 886 - - - - -

Stage 2 966 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 785 906 1448 - - -

Mov Cap-2 Maneuver 785 - - - - -

Stage 1 886 - - - - -

Stage 2 966 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 0 0 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1448 - - - -

HCM Lane V/C Ratio - - - - -

HCM Ctrl Dly (s/v) 0 - 0 - -

HCM Lane LOS A - A - -

HCM 95th %tile Q(veh) 0 - - - -

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	18	19	0	0	0
Future Vol, veh/h	0	18	19	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	19	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	19	0	37
Stage 1	-	-	19
Stage 2	-	-	18
Critical Hdwy	4.1	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	1611	-	981
Stage 1	-	-	1009
Stage 2	-	-	1010
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1611	-	981
Mov Cap-2 Maneuver	-	-	981
Stage 1	-	-	1009
Stage 2	-	-	1010

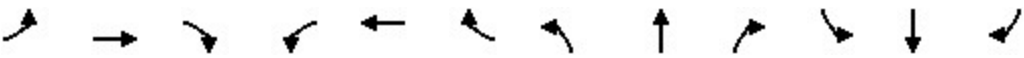
Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1611	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM Signalized Intersection Capacity Analysis

15: US-7 & Harbor Rd/Falls Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	45	93	67	7	134	156	32	582	9	170	603	56
Future Volume (vph)	45	93	67	7	134	156	32	582	9	170	603	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.99			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1671			1814	1498	1631	1713		1646	1706	
Flt Permitted		0.99			1.00	1.00	0.11	1.00		0.14	1.00	
Satd. Flow (perm)		1671			1814	1498	189	1713		248	1706	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	93	67	7	134	156	32	582	9	170	603	56
RTOR Reduction (vph)	0	16	0	0	0	123	0	1	0	0	2	0
Lane Group Flow (vph)	0	189	0	0	141	33	32	590	0	170	657	0
Confl. Peds. (#/hr)	10		2	2		10	2					2
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	7%	7%	7%	6%	6%	6%
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases						8	2			6		
Actuated Green, G (s)		14.8			10.9	22.6	40.9	36.3		54.0	43.4	
Effective Green, g (s)		14.8			10.9	22.6	40.9	36.3		54.0	43.4	
Actuated g/C Ratio		0.14			0.10	0.21	0.38	0.34		0.50	0.41	
Clearance Time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		230			184	316	134	580		277	691	
v/s Ratio Prot		c0.11			c0.08	0.01	0.01	0.34		c0.07	c0.38	
v/s Ratio Perm						0.01	0.08			0.24		
v/c Ratio		0.82			0.77	0.10	0.24	1.02		0.61	0.95	
Uniform Delay, d1		44.9			46.9	34.1	45.1	35.4		37.1	30.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		19.8			15.6	0.1	0.3	41.9		2.8	24.0	
Delay (s)		64.7			62.5	34.1	45.4	77.3		39.9	54.8	
Level of Service		E			E	C	D	E		D	D	
Approach Delay (s/veh)		64.7			47.6			75.7			51.8	
Approach LOS		E			D			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)		60.1			HCM 2000 Level of Service					E		
HCM 2000 Volume to Capacity ratio		0.88										
Actuated Cycle Length (s)		107.1			Sum of lost time (s)					32.0		
Intersection Capacity Utilization		82.0%			ICU Level of Service					D		
Analysis Period (min)		15										

c Critical Lane Group

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HCM Signalized Intersection Capacity Analysis

16: US-7 & Bostwick Rd/Marsett St

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	57	8	191	53	22	4	536	158	24	606	47
Future Volume (vph)	65	57	8	191	53	22	4	536	158	24	606	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.99			0.97			0.99	
Flt Protected	0.95	1.00			0.97			1.00			1.00	
Satd. Flow (prot)	1745	1803			1753			1695			1730	
Flt Permitted	0.65	1.00			0.75			1.00			0.97	
Satd. Flow (perm)	1187	1803			1355			1690			1675	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	65	57	8	191	53	22	4	536	158	24	606	47
RTOR Reduction (vph)	0	6	0	0	5	0	0	15	0	0	4	0
Lane Group Flow (vph)	65	59	0	0	261	0	0	683	0	0	673	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.1	16.1			16.1			35.4			35.4	
Effective Green, g (s)	16.1	16.1			16.1			35.4			35.4	
Actuated g/C Ratio	0.25	0.25			0.25			0.56			0.56	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	300	457			343			942			933	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.05				c0.19			c0.40			0.40	
v/c Ratio	0.22	0.13			0.76			0.73			0.72	
Uniform Delay, d1	18.7	18.3			21.9			10.4			10.4	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	0.1			9.5			4.9			4.8	
Delay (s)	19.1	18.4			31.5			15.3			15.2	
Level of Service	B	B			C			B			B	
Approach Delay (s/veh)		18.8			31.5			15.3			15.2	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			18.0									
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			63.5									
Intersection Capacity Utilization			82.9%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh 12.8

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	210	6	30	184	145	15	128	74	117	33	16
Future Vol, veh/h	35	210	6	30	184	145	15	128	74	117	33	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	1	1	1	5	5	5
Mvmt Flow	35	210	6	30	184	145	15	128	74	117	33	16
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.5	14.2	11.8	11.7
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	14%	8%	70%
Vol Thru, %	59%	84%	51%	20%
Vol Right, %	34%	2%	40%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	251	359	166
LT Vol	15	35	30	117
Through Vol	128	210	184	33
RT Vol	74	6	145	16
Lane Flow Rate	217	251	359	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.345	0.397	0.528	0.284
Departure Headway (Hd)	5.725	5.694	5.299	6.157
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	625	627	675	579
Service Time	3.799	3.765	3.365	4.236
HCM Lane V/C Ratio	0.347	0.4	0.532	0.287
HCM Control Delay, s/veh	11.8	12.5	14.2	11.7
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.5	1.9	3.1	1.2

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	386	19	3	315	35	3
Future Vol, veh/h	386	19	3	315	35	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	0	0
Mvmt Flow	386	19	3	315	35	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	405	0	717
Stage 1	-	-	-	-	396
Stage 2	-	-	-	-	321
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1148	-	400
Stage 1	-	-	-	-	685
Stage 2	-	-	-	-	740
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1148	-	398
Mov Cap-2 Maneuver	-	-	-	-	398
Stage 1	-	-	-	-	685
Stage 2	-	-	-	-	737

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.08	14.65
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	411	-	-	17	-
HCM Lane V/C Ratio	0.092	-	-	0.003	-
HCM Ctrl Dly (s/v)	14.6	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	373	10	14	271	4	28	0	41	28	0	19
Future Vol, veh/h	6	373	10	14	271	4	28	0	41	28	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	2	2	2
Mvmt Flow	6	373	10	14	271	4	28	0	41	28	0	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	275	0	0	383	0	0	689	693	378	686	696	273
Stage 1	-	-	-	-	-	-	390	390	-	301	301	-
Stage 2	-	-	-	-	-	-	299	303	-	385	395	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1288	-	-	1175	-	-	363	369	673	362	365	766
Stage 1	-	-	-	-	-	-	638	611	-	708	665	-
Stage 2	-	-	-	-	-	-	714	667	-	638	605	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1288	-	-	1175	-	-	347	362	673	333	358	766
Mov Cap-2 Maneuver	-	-	-	-	-	-	347	362	-	333	358	-
Stage 1	-	-	-	-	-	-	634	608	-	698	656	-
Stage 2	-	-	-	-	-	-	687	658	-	596	601	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.12			0.39			13.61			14.36		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	487	28	-	-	87	-	-	431
HCM Lane V/C Ratio	0.142	0.005	-	-	0.012	-	-	0.109
HCM Ctrl Dly (s/v)	13.6	7.8	0	-	8.1	0	-	14.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.4

Intersection

Intersection Delay, s/veh 16.8

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	176	259	1	13	157	64	2	166	45	57	48	114
Future Vol, veh/h	176	259	1	13	157	64	2	166	45	57	48	114
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	4	4	4
Mvmt Flow	176	259	1	13	157	64	2	166	45	57	48	114
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	22.5	13	13.2	13.1
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	40%	6%	26%
Vol Thru, %	78%	59%	67%	22%
Vol Right, %	21%	0%	27%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	436	234	219
LT Vol	2	176	13	57
Through Vol	166	259	157	48
RT Vol	45	1	64	114
Lane Flow Rate	213	436	234	219
Geometry Grp	1	1	1	1
Degree of Util (X)	0.375	0.717	0.393	0.379
Departure Headway (Hd)	6.332	5.923	6.052	6.223
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	567	615	592	576
Service Time	4.39	3.923	4.106	4.279
HCM Lane V/C Ratio	0.376	0.709	0.395	0.38
HCM Control Delay, s/veh	13.2	22.5	13	13.1
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	1.7	6	1.9	1.8

Intersection

Intersection Delay, s/veh 14.9

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	165	32	125	2	26	5	115	330	7	2	73	80
Future Vol, veh/h	165	32	125	2	26	5	115	330	7	2	73	80
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	7	7	7	1	1	1	3	3	3
Mvmt Flow	165	32	125	2	26	5	115	330	7	2	73	80
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	3.8	9.6	17.8	10
HCM LOS	B	A	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	51%	6%	1%
Vol Thru, %	73%	10%	79%	47%
Vol Right, %	2%	39%	15%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	452	322	33	155
LT Vol	115	165	2	2
Through Vol	330	32	26	73
RT Vol	7	125	5	80
Lane Flow Rate	452	322	33	155
Geometry Grp	1	1	1	1
Degree of Util (X)	0.657	0.493	0.057	0.231
Departure Headway (Hd)	5.234	5.507	6.184	5.37
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	692	654	577	666
Service Time	3.272	3.55	4.25	3.421
HCM Lane V/C Ratio	0.653	0.492	0.057	0.233
HCM Control Delay, s/veh	17.8	13.8	9.6	10
HCM Lane LOS	C	B	A	A
HCM 95th-tile Q	4.9	2.7	0.2	0.9

Intersection

Intersection Delay, s/veh 7.6

Intersection LOS A

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations

Traffic Vol, veh/h 7 9 11 126 33 6

Future Vol, veh/h 7 9 11 126 33 6

Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00

Heavy Vehicles, % 8 8 2 2 6 6

Mvmt Flow 7 9 11 126 33 6

Number of Lanes 1 0 0 1 1 0

Approach EB NB SB

Opposing Approach SB NB

Opposing Lanes 0 1 1

Conflicting Approach Left SB EB

Conflicting Lanes Left 1 1 0

Conflicting Approach Right NB EB

Conflicting Lanes Right 1 0 1

HCM Control Delay, s/veh 7.2 7.7 7.3

HCM LOS A A A

Lane NBLn1 EBLn1 SBLn1

Vol Left, % 8% 44% 0%

Vol Thru, % 92% 0% 85%

Vol Right, % 0% 56% 15%

Sign Control Stop Stop Stop

Traffic Vol by Lane 137 16 39

LT Vol 11 7 0

Through Vol 126 0 33

RT Vol 0 9 6

Lane Flow Rate 137 16 39

Geometry Grp 1 1 1

Degree of Util (X) 0.152 0.018 0.044

Departure Headway (Hd) 4.007 4.089 4.04

Convergence, Y/N Yes Yes Yes

Cap 897 865 885

Service Time 2.023 2.164 2.073

HCM Lane V/C Ratio 0.153 0.018 0.044

HCM Control Delay, s/veh 7.7 7.2 7.3

HCM Lane LOS A A A

HCM 95th-tile Q 0.5 0.1 0.1

Intersection

Intersection Delay, s/veh 10.5

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	0	0	11	0	39	0	393	18	26	208	0
Future Vol, veh/h	0	0	0	11	0	39	0	393	18	26	208	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	9	9	9	2	2	2	3	3	3
Mvmt Flow	0	0	0	11	0	39	0	393	18	26	208	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0	8.4	11.3	9.4
HCM LOS	-	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	22%	11%
Vol Thru, %	96%	100%	0%	89%
Vol Right, %	4%	0%	78%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	411	0	50	234
LT Vol	0	0	11	26
Through Vol	393	0	0	208
RT Vol	18	0	39	0
Lane Flow Rate	411	0	50	234
Geometry Grp	1	1	1	1
Degree of Util (X)	0.489	0	0.07	0.293
Departure Headway (Hd)	4.28	5.38	5.018	4.511
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	843	0	713	798
Service Time	2.298	3.426	3.055	2.533
HCM Lane V/C Ratio	0.488	0	0.07	0.293
HCM Control Delay, s/veh	11.3	8.4	8.4	9.4
HCM Lane LOS	B	N	A	A
HCM 95th-tile Q	2.7	0	0.2	1.2

Intersection

Intersection Delay, s/veh 14.1

Intersection LOS B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	146	87	111	348	170	87
Future Vol, veh/h	146	87	111	348	170	87
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	5	5	3	3	3	3
Mvmt Flow	146	87	111	348	170	87
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh 12		16.9	11
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	24%	63%	0%
Vol Thru, %	76%	0%	66%
Vol Right, %	0%	37%	34%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	459	233	257
LT Vol	111	146	0
Through Vol	348	0	170
RT Vol	0	87	87
Lane Flow Rate	459	233	257
Geometry Grp	1	1	1
Degree of Util (X)	0.648	0.366	0.362
Departure Headway (Hd)	5.08	5.662	5.076
Convergence, Y/N	Yes	Yes	Yes
Cap	716	636	709
Service Time	3.08	3.698	3.108
HCM Lane V/C Ratio	0.641	0.366	0.362
HCM Control Delay, s/veh	16.9	12	11
HCM Lane LOS	C	B	B
HCM 95th-tile Q	4.8	1.7	1.7

Intersection

Int Delay, s/veh 4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	138	383	122	83	199
Future Vol, veh/h	65	138	383	122	83	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	138	383	122	83	199

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	809	444	0
Stage 1	444	-	-
Stage 2	365	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	350	614	-
Stage 1	646	-	-
Stage 2	702	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	319	614	-
Mov Cap-2 Maneuver	319	-	-
Stage 1	646	-	-
Stage 2	640	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	18.18	0	2.56
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	474	530
HCM Lane V/C Ratio	-	-	0.429	0.078
HCM Ctrl Dly (s/v)	-	-	18.2	8.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.1	0.3

HCM Signalized Intersection Capacity Analysis

10: Spear St & Allen Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	22	113	2	42	43	189	348	2	11	177	193
Future Volume (vph)	150	22	113	2	42	43	189	348	2	11	177	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.92		1.00	1.00		1.00	0.92	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1716	1531	1745	1674		1711	1799		1711	1660	
Flt Permitted		0.69	1.00	0.65	1.00		0.38	1.00		0.55	1.00	
Satd. Flow (perm)		1242	1531	1191	1674		675	1799		993	1660	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	150	22	113	2	42	43	189	348	2	11	177	193
RTOR Reduction (vph)	0	0	82	0	28	0	0	0	0	0	29	0
Lane Group Flow (vph)	0	172	31	2	57	0	189	350	0	11	341	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		20.2	20.2	20.2	20.2		40.5	34.4		30.3	29.3	
Effective Green, g (s)		20.2	20.2	20.2	20.2		40.5	34.4		30.3	29.3	
Actuated g/C Ratio		0.27	0.27	0.27	0.27		0.55	0.47		0.41	0.40	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		340	420	326	459		457	840		418	660	
v/s Ratio Prot					0.03		c0.03	0.19		0.00	c0.21	
v/s Ratio Perm		c0.14	0.02	0.00			0.19			0.01		
v/c Ratio		0.51	0.07	0.01	0.12		0.41	0.42		0.03	0.52	
Uniform Delay, d1		22.5	19.8	19.4	20.1		9.3	13.0		12.8	16.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.1	0.0	0.1		0.6	1.5		0.0	2.9	
Delay (s)		23.7	19.8	19.4	20.2		9.9	14.5		12.8	19.6	
Level of Service		C	B	B	C		A	B		B	B	
Approach Delay (s/veh)		22.2			20.2			12.9			19.5	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.4			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			73.6			Sum of lost time (s)				27.0		
Intersection Capacity Utilization			62.7%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Intersection

Int Delay, s/veh 2.8

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 73 4 1 132 35 25

Future Vol, veh/h 73 4 1 132 35 25

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 73 4 1 132 35 25

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 182 48 60 0 - 0

Stage 1 48 - - - - -

Stage 2 134 - - - - -

Critical Hdwy 6.4 6.2 4.1 - - -

Critical Hdwy Stg 1 5.4 - - - - -

Critical Hdwy Stg 2 5.4 - - - - -

Follow-up Hdwy 3.5 3.3 2.2 - - -

Pot Cap-1 Maneuver 813 1027 1556 - - -

Stage 1 980 - - - - -

Stage 2 897 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 812 1027 1556 - - -

Mov Cap-2 Maneuver 812 - - - - -

Stage 1 979 - - - - -

Stage 2 897 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 9.84 0.05 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 14 - 821 - -

HCM Lane V/C Ratio 0.001 - 0.094 - -

HCM Ctrl Dly (s/v) 7.3 0 9.8 - -

HCM Lane LOS A A A - -

HCM 95th %tile Q(veh) 0 - 0.3 - -

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	12	16	1	4	12
Future Vol, veh/h	4	12	16	1	4	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	12	16	1	4	12

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	17	0	0 37 17
Stage 1	-	-	- 17 -
Stage 2	-	-	- 20 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1613	-	- 981 1068
Stage 1	-	-	- 1011 -
Stage 2	-	-	- 1008 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1613	-	- 979 1068
Mov Cap-2 Maneuver	-	-	- 979 -
Stage 1	-	-	- 1009 -
Stage 2	-	-	- 1008 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.81	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	450	-	-	-	1044
HCM Lane V/C Ratio	0.002	-	-	-	0.015
HCM Ctrl Dly (s/v)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM Signalized Intersection Capacity Analysis

15: US-7 & Harbor Rd/Falls Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	87	81	7	108	181	65	567	2	67	532	54
Future Volume (vph)	89	87	81	7	108	181	65	567	2	67	532	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1642			1761	1476	1558	1639		1544	1599	
Flt Permitted		0.98			1.00	1.00	0.12	1.00		0.15	1.00	
Satd. Flow (perm)		1642			1761	1476	203	1639		244	1599	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	89	87	81	7	108	181	65	567	2	67	532	54
RTOR Reduction (vph)	0	14	0	0	0	150	0	0	0	0	3	0
Lane Group Flow (vph)	0	243	0	0	115	31	65	569	0	67	583	0
Confl. Peds. (#/hr)	2		5	5		2	1					1
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	12%	12%	12%	13%	13%	13%
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases						8	2			6		
Actuated Green, G (s)		18.1			10.4	18.0	41.0	36.3		46.8	39.2	
Effective Green, g (s)		18.1			10.4	18.0	41.0	36.3		46.8	39.2	
Actuated g/C Ratio		0.17			0.10	0.17	0.39	0.34		0.44	0.37	
Clearance Time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		280			173	251	138	562		201	592	
v/s Ratio Prot		c0.15			c0.07	0.01	0.02	0.35		c0.02	c0.36	
v/s Ratio Perm						0.01	0.16			0.12		
v/c Ratio		0.87			0.66	0.12	0.47	1.01		0.33	0.98	
Uniform Delay, d1		42.7			46.0	37.2	42.9	34.7		37.7	33.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		22.8			7.2	0.1	0.9	41.1		0.4	33.4	
Delay (s)		65.5			53.3	37.3	43.9	75.9		38.1	66.4	
Level of Service		E			D	D	D	E		D	E	
Approach Delay (s/veh)		65.5			43.5			72.6			63.5	
Approach LOS		E			D			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)		63.7										
HCM 2000 Volume to Capacity ratio		0.86										
Actuated Cycle Length (s)		105.8										
Intersection Capacity Utilization		73.4%										
Analysis Period (min)		15										
c Critical Lane Group												

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Synchro 12 Report
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HCM Signalized Intersection Capacity Analysis

16: US-7 & Bostwick Rd/Marsett St

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	15	0	43	15	7	1	610	49	3	607	10
Future Volume (vph)	17	15	0	43	15	7	1	610	49	3	607	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.99			0.99			1.00	
Flt Protected	0.95	1.00			0.97			1.00			1.00	
Satd. Flow (prot)	1694	1783			1685			1683			1636	
Flt Permitted	0.75	1.00			0.79			1.00			1.00	
Satd. Flow (perm)	1346	1783			1378			1683			1633	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	15	0	43	15	7	1	610	49	3	607	10
RTOR Reduction (vph)	0	0	0	0	6	0	0	3	0	0	1	0
Lane Group Flow (vph)	17	15	0	0	59	0	0	657	0	0	619	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	8%	8%	8%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	5.3	5.3			5.3			42.4			42.4	
Effective Green, g (s)	5.3	5.3			5.3			42.4			42.4	
Actuated g/C Ratio	0.09	0.09			0.09			0.71			0.71	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	119	158			122			1195			1159	
v/s Ratio Prot		0.01										
v/s Ratio Perm	0.01				0.04			0.39			0.38	
v/c Ratio	0.14	0.09			0.48			0.55			0.53	
Uniform Delay, d1	25.1	25.0			25.9			4.1			4.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.3			3.0			1.8			1.8	
Delay (s)	25.7	25.3			28.9			5.9			5.8	
Level of Service	C	C			C			A			A	
Approach Delay (s/veh)		25.5			28.9			5.9			5.8	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			7.4									
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			59.7									
Intersection Capacity Utilization			56.0%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh 17.7

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	233	10	64	247	152	6	61	26	136	108	65
Future Vol, veh/h	39	233	10	64	247	152	6	61	26	136	108	65
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	39	233	10	64	247	152	6	61	26	136	108	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.6	22	11.2	16.2
HCM LOS	B	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	14%	14%	44%
Vol Thru, %	66%	83%	53%	35%
Vol Right, %	28%	4%	33%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	282	463	309
LT Vol	6	39	64	136
Through Vol	61	233	247	108
RT Vol	26	10	152	65
Lane Flow Rate	93	282	463	309
Geometry Grp	1	1	1	1
Degree of Util (X)	0.173	0.477	0.725	0.534
Departure Headway (Hd)	6.69	6.087	5.636	6.218
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	534	589	644	578
Service Time	4.76	4.138	3.636	4.27
HCM Lane V/C Ratio	0.174	0.479	0.719	0.535
HCM Control Delay, s/veh	11.2	14.6	22	16.2
HCM Lane LOS	B	B	C	C
HCM 95th-tile Q	0.6	2.6	6.2	3.1

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	356	38	1	454	29	2
Future Vol, veh/h	356	38	1	454	29	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	0	0	0	0
Mvmt Flow	356	38	1	454	29	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	394
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1176
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1176
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.02	16.17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	353	-	-	4	-
HCM Lane V/C Ratio	0.088	-	-	0.001	-
HCM Ctrl Dly (s/v)	16.2	-	-	8.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	305	30	44	425	35	19	0	27	13	0	12
Future Vol, veh/h	22	305	30	44	425	35	19	0	27	13	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	305	30	44	425	35	19	0	27	13	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	460	0	0	335	0	0	877	912	320	880	910	443
Stage 1	-	-	-	-	-	-	364	364	-	531	531	-
Stage 2	-	-	-	-	-	-	513	548	-	349	379	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1106	-	-	1236	-	-	271	276	725	270	277	619
Stage 1	-	-	-	-	-	-	659	627	-	536	530	-
Stage 2	-	-	-	-	-	-	548	520	-	671	618	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1106	-	-	1236	-	-	247	256	725	241	257	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	256	-	241	257	-
Stage 1	-	-	-	-	-	-	643	612	-	510	504	-
Stage 2	-	-	-	-	-	-	511	495	-	631	603	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.51	0.7	15.09	16.38
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	403	109	-	-	155	-	-	341
HCM Lane V/C Ratio	0.114	0.02	-	-	0.036	-	-	0.073
HCM Ctrl Dly (s/v)	15.1	8.3	0	-	8	0	-	16.4
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2

Intersection

Intersection Delay, s/veh 24.6

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	163	184	3	47	270	30	4	90	25	67	182	215
Future Vol, veh/h	163	184	3	47	270	30	4	90	25	67	182	215
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	0	0	0	2	2	2	0	0	0
Mvmt Flow	163	184	3	47	270	30	4	90	25	67	182	215
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	23	21.8	13.1	30.9
HCM LOS	C	C	B	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	47%	14%	14%
Vol Thru, %	76%	53%	78%	39%
Vol Right, %	21%	1%	9%	46%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	350	347	464
LT Vol	4	163	47	67
Through Vol	90	184	270	182
RT Vol	25	3	30	215
Lane Flow Rate	119	350	347	464
Geometry Grp	1	1	1	1
Degree of Util (X)	0.249	0.672	0.655	0.808
Departure Headway (Hd)	7.54	6.916	6.792	6.398
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	476	525	534	571
Service Time	5.59	4.932	4.807	4.398
HCM Lane V/C Ratio	0.25	0.667	0.65	0.813
HCM Control Delay, s/veh	13.1	23	21.8	30.9
HCM Lane LOS	B	C	C	D
HCM 95th-tile Q	1	5	4.7	7.9

Intersection

Intersection Delay, s/veh 11.4

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	103	33	131	8	37	5	74	69	0	6	162	224
Future Vol, veh/h	103	33	131	8	37	5	74	69	0	6	162	224
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	0	0	0	1	1	1	0	0	0
Mvmt Flow	103	33	131	8	37	5	74	69	0	6	162	224
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	1.3	9.2	9.9	12.4
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	52%	39%	16%	2%
Vol Thru, %	48%	12%	74%	41%
Vol Right, %	0%	49%	10%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	267	50	392
LT Vol	74	103	8	6
Through Vol	69	33	37	162
RT Vol	0	131	5	224
Lane Flow Rate	143	267	50	392
Geometry Grp	1	1	1	1
Degree of Util (X)	0.215	0.38	0.078	0.508
Departure Headway (Hd)	5.406	5.122	5.645	4.662
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	664	702	634	776
Service Time	3.438	3.154	3.689	2.662
HCM Lane V/C Ratio	0.215	0.38	0.079	0.505
HCM Control Delay, s/veh	9.9	11.3	9.2	12.4
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.8	1.8	0.3	2.9

Intersection

Intersection Delay, s/veh 7.7

Intersection LOS A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	20	19	67	146	3
Future Vol, veh/h	0	20	19	67	146	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	0	20	19	67	146	3
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	6.9	7.6	7.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	22%	0%	0%
Vol Thru, %	78%	0%	98%
Vol Right, %	0%	100%	2%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	86	20	149
LT Vol	19	0	0
Through Vol	67	0	146
RT Vol	0	20	3
Lane Flow Rate	86	20	149
Geometry Grp	1	1	1
Degree of Util (X)	0.098	0.021	0.165
Departure Headway (Hd)	4.108	3.8	3.987
Convergence, Y/N	Yes	Yes	Yes
Cap	870	948	900
Service Time	2.142	1.8	2.012
HCM Lane V/C Ratio	0.099	0.021	0.166
HCM Control Delay, s/veh	7.6	6.9	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.1	0.6

Intersection

Intersection Delay, s/veh 11.5

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	13	0	20	0	266	10	28	441	2
Future Vol, veh/h	1	0	0	13	0	20	0	266	10	28	441	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	3	3	3	0	0	0	1	1	1
Mvmt Flow	1	0	0	13	0	20	0	266	10	28	441	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.8	8.6	9.7	12.7
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	39%	6%
Vol Thru, %	96%	0%	0%	94%
Vol Right, %	4%	0%	61%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	276	1	33	471
LT Vol	0	1	13	28
Through Vol	266	0	0	441
RT Vol	10	0	20	2
Lane Flow Rate	276	1	33	471
Geometry Grp	1	1	1	1
Degree of Util (X)	0.34	0.002	0.048	0.562
Departure Headway (Hd)	4.435	5.76	5.259	4.297
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	811	620	679	843
Service Time	2.456	3.807	3.301	2.315
HCM Lane V/C Ratio	0.34	0.002	0.049	0.559
HCM Control Delay, s/veh	9.7	8.8	8.6	12.7
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1.5	0	0.2	3.6

Intersection

Intersection Delay, s/veh 16.5

Intersection LOS C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	273	147	44	226	299	89
Future Vol, veh/h	273	147	44	226	299	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	273	147	44	226	299	89
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.8	13.5	16.2
HCM LOS	C	B	C

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	16%	65%	0%
Vol Thru, %	84%	0%	77%
Vol Right, %	0%	35%	23%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	270	420	388
LT Vol	44	273	0
Through Vol	226	0	299
RT Vol	0	147	89
Lane Flow Rate	270	420	388
Geometry Grp	1	1	1
Degree of Util (X)	0.439	0.655	0.591
Departure Headway (Hd)	5.85	5.614	5.48
Convergence, Y/N	Yes	Yes	Yes
Cap	613	643	656
Service Time	3.917	3.67	3.54
HCM Lane V/C Ratio	0.44	0.653	0.591
HCM Control Delay, s/veh	13.5	18.8	16.2
HCM Lane LOS	B	C	C
HCM 95th-tile Q	2.2	4.8	3.9

Intersection						
Int Delay, s/veh	7.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	81	100	358	161	204	339
Future Vol, veh/h	81	100	358	161	204	339
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	81	100	358	161	204	339

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1186	439	0
Stage 1	439	-	-
Stage 2	747	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	210	620	-
Stage 1	652	-	-
Stage 2	470	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	160	620	-
Mov Cap-2 Maneuver	160	-	-
Stage 1	652	-	-
Stage 2	358	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	41.55	0	3.47
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	271	676
HCM Lane V/C Ratio	-	-	0.669	0.194
HCM Ctrl Dly (s/v)	-	-	41.6	9.2
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	4.4	0.7

HCM Signalized Intersection Capacity Analysis

10: Spear St & Allen Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	501	36	232	4	22	17	103	343	7	34	310	166
Future Volume (vph)	501	36	232	4	22	17	103	343	7	34	310	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00		1.00	0.95	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730	1546	1745	1698		1745	1831		1745	1741	
Flt Permitted		0.71	1.00	0.27	1.00		0.20	1.00		0.42	1.00	
Satd. Flow (perm)		1289	1546	493	1698		368	1831		762	1741	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	501	36	232	4	22	17	103	343	7	34	310	166
RTOR Reduction (vph)	0	0	78	0	10	0	0	1	0	0	17	0
Lane Group Flow (vph)	0	537	154	4	29	0	103	349	0	34	459	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		34.1	34.1	34.1	34.1		31.1	26.4		28.7	25.2	
Effective Green, g (s)		34.1	34.1	34.1	34.1		31.1	26.4		28.7	25.2	
Actuated g/C Ratio		0.42	0.42	0.42	0.42		0.38	0.32		0.35	0.31	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		536	642	205	706		218	589		308	535	
v/s Ratio Prot					0.02		c0.03	0.19		0.00	c0.26	
v/s Ratio Perm		c0.42	0.10	0.01			0.15			0.03		
v/c Ratio		1.00	0.24	0.02	0.04		0.47	0.59		0.11	0.86	
Uniform Delay, d1		24.0	15.5	14.1	14.2		18.5	23.3		17.9	26.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		39.3	0.2	0.0	0.0		1.6	4.4		0.2	16.3	
Delay (s)		63.3	15.7	14.1	14.3		20.1	27.6		18.1	43.0	
Level of Service		E	B	B	B		C	C		B	D	
Approach Delay (s/veh)		48.9			14.2			25.9			41.3	
Approach LOS		D			B			C			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			40.0				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			82.0				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			83.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

04 - 2027 PM Build 4:21 pm 08/21/2025 Baseline

Synchro 12 Report
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Intersection

Int Delay, s/veh 1.6

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 49 3 4 62 146 78

Future Vol, veh/h 49 3 4 62 146 78

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 49 3 4 62 146 78

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 255 185 224 0 - 0

Stage 1 185 - - - - -

Stage 2 70 - - - - -

Critical Hdwy 6.4 6.2 4.1 - - -

Critical Hdwy Stg 1 5.4 - - - - -

Critical Hdwy Stg 2 5.4 - - - - -

Follow-up Hdwy 3.5 3.3 2.2 - - -

Pot Cap-1 Maneuver 738 862 1357 - - -

Stage 1 852 - - - - -

Stage 2 958 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 736 862 1357 - - -

Mov Cap-2 Maneuver 736 - - - - -

Stage 1 849 - - - - -

Stage 2 958 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 10.22 0.46 0

HCM LOS B

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 109 - 742 - -

HCM Lane V/C Ratio 0.003 - 0.07 - -

HCM Ctrl Dly (s/v) 7.7 0 10.2 - -

HCM Lane LOS A A B - -

HCM 95th %tile Q(veh) 0 - 0.2 - -

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	18	19	4	3	8
Future Vol, veh/h	13	18	19	4	3	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	18	19	4	3	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	23	0	0 65 21
Stage 1	-	-	- 21 -
Stage 2	-	-	- 44 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1605	-	- 946 1062
Stage 1	-	-	- 1007 -
Stage 2	-	-	- 984 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1605	-	- 938 1062
Mov Cap-2 Maneuver	-	-	- 938 -
Stage 1	-	-	- 999 -
Stage 2	-	-	- 984 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.04	0	8.55
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	755	-	-	-	1025
HCM Lane V/C Ratio	0.008	-	-	-	0.011
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM Signalized Intersection Capacity Analysis

15: US-7 & Harbor Rd/Falls Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	45	102	67	7	141	165	32	582	9	187	603	56
Future Volume (vph)	45	102	67	7	141	165	32	582	9	187	603	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.99			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1675			1814	1497	1631	1713		1646	1706	
Flt Permitted		0.99			1.00	1.00	0.11	1.00		0.14	1.00	
Satd. Flow (perm)		1675			1814	1497	189	1713		241	1706	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	102	67	7	141	165	32	582	9	187	603	56
RTOR Reduction (vph)	0	15	0	0	0	130	0	1	0	0	2	0
Lane Group Flow (vph)	0	199	0	0	148	35	32	590	0	187	657	0
Confl. Peds. (#/hr)	10		2	2		10	2					2
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	7%	7%	7%	6%	6%	6%
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases						8	2			6		
Actuated Green, G (s)		15.4			11.1	22.7	40.9	36.3		53.9	43.3	
Effective Green, g (s)		15.4			11.1	22.7	40.9	36.3		53.9	43.3	
Actuated g/C Ratio		0.14			0.10	0.21	0.38	0.34		0.50	0.40	
Clearance Time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		239			186	315	133	576		271	685	
v/s Ratio Prot		c0.12			c0.08	0.01	0.01	0.34		c0.07	c0.38	
v/s Ratio Perm						0.01	0.08			0.27		
v/c Ratio		0.83			0.80	0.11	0.24	1.02		0.69	0.96	
Uniform Delay, d1		45.0			47.2	34.4	45.8	35.8		38.1	31.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		20.6			19.3	0.1	0.3	44.0		6.0	25.6	
Delay (s)		65.6			66.6	34.4	46.1	79.7		44.0	57.0	
Level of Service		E			E	C	D	E		D	E	
Approach Delay (s/veh)		65.6			49.6			78.0			54.1	
Approach LOS		E			D			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			62.1									HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			107.8							32.0		
Intersection Capacity Utilization			83.6%									ICU Level of Service E
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

16: US-7 & Bostwick Rd/Marsett St

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	62	8	199	55	22	4	536	171	24	606	47
Future Volume (vph)	65	62	8	199	55	22	4	536	171	24	606	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.99			0.97			0.99	
Flt Protected	0.95	1.00			0.97			1.00			1.00	
Satd. Flow (prot)	1745	1805			1754			1692			1730	
Flt Permitted	0.64	1.00			0.74			1.00			0.97	
Satd. Flow (perm)	1182	1805			1348			1687			1673	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	65	62	8	199	55	22	4	536	171	24	606	47
RTOR Reduction (vph)	0	6	0	0	5	0	0	16	0	0	4	0
Lane Group Flow (vph)	65	64	0	0	271	0	0	695	0	0	673	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.5	16.5			16.5			35.2			35.2	
Effective Green, g (s)	16.5	16.5			16.5			35.2			35.2	
Actuated g/C Ratio	0.26	0.26			0.26			0.55			0.55	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	306	467			349			932			924	
v/s Ratio Prot		0.04										
v/s Ratio Perm	0.05				c0.20			c0.41			0.40	
v/c Ratio	0.21	0.14			0.78			0.75			0.73	
Uniform Delay, d1	18.5	18.1			21.9			10.8			10.7	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.1			10.3			5.4			5.0	
Delay (s)	18.9	18.3			32.2			16.2			15.7	
Level of Service	B	B			C			B			B	
Approach Delay (s/veh)		18.5			32.2			16.2			15.7	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			18.7									
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			63.7									
Intersection Capacity Utilization			83.5%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	36	208	6	30	170	123	15	130	75	111	33	16
Future Vol, veh/h	36	208	6	30	170	123	15	130	75	111	33	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	1	1	1	5	5	5
Mvmt Flow	36	208	6	30	170	123	15	130	75	111	33	16
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.2	13	11.6	11.3
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	14%	9%	69%
Vol Thru, %	59%	83%	53%	21%
Vol Right, %	34%	2%	38%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	220	250	323	160
LT Vol	15	36	30	111
Through Vol	130	208	170	33
RT Vol	75	6	123	16
Lane Flow Rate	220	250	323	160
Geometry Grp	1	1	1	1
Degree of Util (X)	0.342	0.389	0.473	0.268
Departure Headway (Hd)	5.595	5.6	5.276	6.036
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	640	640	678	592
Service Time	3.657	3.66	3.333	4.103
HCM Lane V/C Ratio	0.344	0.391	0.476	0.27
HCM Control Delay, s/veh	11.6	12.2	13	11.3
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.5	1.8	2.5	1.1

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	383	15	3	293	24	3
Future Vol, veh/h	383	15	3	293	24	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	0	0
Mvmt Flow	383	15	3	293	24	3

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	398
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.13
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.227
Pot Cap-1 Maneuver	-	-	1155
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1155
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.08	13.91
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	431	-	-	18	-
HCM Lane V/C Ratio	0.063	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.9	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	380	0	0	276	4	0	0	0	28	0	19
Future Vol, veh/h	6	380	0	0	276	4	0	0	0	28	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	2	2	2
Mvmt Flow	6	380	0	0	276	4	0	0	0	28	0	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	280	0	0	380	0	0	668	672	380	670	670	278
Stage 1	-	-	-	-	-	-	392	392	-	278	278	-
Stage 2	-	-	-	-	-	-	276	280	-	392	392	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1283	-	-	1178	-	-	375	380	671	371	378	761
Stage 1	-	-	-	-	-	-	637	610	-	728	680	-
Stage 2	-	-	-	-	-	-	735	683	-	633	606	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1283	-	-	1178	-	-	363	377	671	368	376	761
Mov Cap-2 Maneuver	-	-	-	-	-	-	363	377	-	368	376	-
Stage 1	-	-	-	-	-	-	633	606	-	728	680	-
Stage 2	-	-	-	-	-	-	716	683	-	629	603	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.12	0	0	13.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	28	-	-	1178	-	-	465
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	0.101
HCM Ctrl Dly (s/v)	0	7.8	0	-	0	-	-	13.6
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.3

Intersection

Intersection Delay, s/veh 13.2

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	154	247	1	8	154	65	2	111	29	58	29	108
Future Vol, veh/h	154	247	1	8	154	65	2	111	29	58	29	108
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	4	4	4
Mvmt Flow	154	247	1	8	154	65	2	111	29	58	29	108
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16.2	11.3	10.7	11.2
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	38%	4%	30%
Vol Thru, %	78%	61%	68%	15%
Vol Right, %	20%	0%	29%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	402	227	195
LT Vol	2	154	8	58
Through Vol	111	247	154	29
RT Vol	29	1	65	108
Lane Flow Rate	142	402	227	195
Geometry Grp	1	1	1	1
Degree of Util (X)	0.232	0.6	0.342	0.307
Departure Headway (Hd)	5.89	5.376	5.417	5.667
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	606	671	661	632
Service Time	3.959	3.424	3.473	3.73
HCM Lane V/C Ratio	0.234	0.599	0.343	0.309
HCM Control Delay, s/veh	10.7	16.2	11.3	11.2
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	0.9	4	1.5	1.3

Intersection

Intersection Delay, s/veh 14.5

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	151	29	115	2	25	5	111	337	8	2	75	78
Future Vol, veh/h	151	29	115	2	25	5	111	337	8	2	75	78
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	7	7	7	1	1	1	3	3	3
Mvmt Flow	151	29	115	2	25	5	111	337	8	2	75	78
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh 13		9.5	17.3	9.9
HCM LOS	B	A	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	51%	6%	1%
Vol Thru, %	74%	10%	78%	48%
Vol Right, %	2%	39%	16%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	456	295	32	155
LT Vol	111	151	2	2
Through Vol	337	29	25	75
RT Vol	8	115	5	78
Lane Flow Rate	456	295	32	155
Geometry Grp	1	1	1	1
Degree of Util (X)	0.651	0.45	0.054	0.227
Departure Headway (Hd)	5.14	5.491	6.112	5.277
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	702	655	584	679
Service Time	3.171	3.528	4.168	3.319
HCM Lane V/C Ratio	0.65	0.45	0.055	0.228
HCM Control Delay, s/veh	17.3	13	9.5	9.9
HCM Lane LOS	C	B	A	A
HCM 95th-tile Q	4.8	2.3	0.2	0.9

Intersection

Intersection Delay, s/veh 7.6

Intersection LOS A

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 8 5 10 127 29 6

Future Vol, veh/h 8 5 10 127 29 6

Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00

Heavy Vehicles, % 8 8 2 2 6 6

Mvmt Flow 8 5 10 127 29 6

Number of Lanes 1 0 0 1 1 0

Approach EB NB SB

Opposing Approach SB NB

Opposing Lanes 0 1 1

Conflicting Approach Left SB EB

Conflicting Lanes Left 1 1 0

Conflicting Approach Right NB EB

Conflicting Lanes Right 1 0 1

HCM Control Delay, s/veh 7.4 7.7 7.2

HCM LOS A A A

Lane NBLn1 EBLn1 SBLn1

Vol Left, % 7% 62% 0%

Vol Thru, % 93% 0% 83%

Vol Right, % 0% 38% 17%

Sign Control Stop Stop Stop

Traffic Vol by Lane 137 13 35

LT Vol 10 8 0

Through Vol 127 0 29

RT Vol 0 5 6

Lane Flow Rate 137 13 35

Geometry Grp 1 1 1

Degree of Util (X) 0.152 0.015 0.039

Departure Headway (Hd) 3.998 4.225 4.025

Convergence, Y/N Yes Yes Yes

Cap 900 838 888

Service Time 2.011 2.297 2.056

HCM Lane V/C Ratio 0.152 0.016 0.039

HCM Control Delay, s/veh 7.7 7.4 7.2

HCM Lane LOS A A A

HCM 95th-tile Q 0.5 0 0.1

Intersection

Intersection Delay, s/veh 9.6

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	0	0	11	0	40	0	319	18	27	184	0
Future Vol, veh/h	0	0	0	11	0	40	0	319	18	27	184	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	9	9	9	2	2	2	3	3	3
Mvmt Flow	0	0	0	11	0	40	0	319	18	27	184	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0	8.2	10.1	9
HCM LOS	-	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	22%	13%
Vol Thru, %	95%	100%	0%	87%
Vol Right, %	5%	0%	78%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	337	0	51	211
LT Vol	0	0	11	27
Through Vol	319	0	0	184
RT Vol	18	0	40	0
Lane Flow Rate	337	0	51	211
Geometry Grp	1	1	1	1
Degree of Util (X)	0.399	0	0.068	0.26
Departure Headway (Hd)	4.26	5.168	4.809	4.438
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	849	0	745	810
Service Time	2.26	3.203	2.839	2.455
HCM Lane V/C Ratio	0.397	0	0.068	0.26
HCM Control Delay, s/veh	10.1	8.2	8.2	9
HCM Lane LOS	B	N	A	A
HCM 95th-tile Q	1.9	0	0.2	1

Intersection

Intersection Delay, s/veh 11.9

Intersection LOS B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	149	79	93	293	154	89
Future Vol, veh/h	149	79	93	293	154	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	5	5	3	3	3	3
Mvmt Flow	149	79	93	293	154	89
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	11.2	13.4	10.3
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	24%	65%	0%
Vol Thru, %	76%	0%	63%
Vol Right, %	0%	35%	37%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	386	228	243
LT Vol	93	149	0
Through Vol	293	0	154
RT Vol	0	79	89
Lane Flow Rate	386	228	243
Geometry Grp	1	1	1
Degree of Util (X)	0.526	0.339	0.326
Departure Headway (Hd)	4.907	5.356	4.823
Convergence, Y/N	Yes	Yes	Yes
Cap	730	663	736
Service Time	2.987	3.455	2.912
HCM Lane V/C Ratio	0.529	0.344	0.33
HCM Control Delay, s/veh	13.4	11.2	10.3
HCM Lane LOS	B	B	B
HCM 95th-tile Q	3.1	1.5	1.4

Intersection

Int Delay, s/veh 4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	140	344	109	84	189
Future Vol, veh/h	62	140	344	109	84	189
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	140	344	109	84	189

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	756	399	0
Stage 1	399	-	-
Stage 2	357	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	376	651	-
Stage 1	678	-	-
Stage 2	708	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	344	651	-
Mov Cap-2 Maneuver	344	-	-
Stage 1	678	-	-
Stage 2	648	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	16.56	0	2.62
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	511	554
HCM Lane V/C Ratio	-	-	0.395	0.076
HCM Ctrl Dly (s/v)	-	-	16.6	8.5
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.9	0.2

HCM Signalized Intersection Capacity Analysis

10: Spear St & Allen Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	23	110	2	43	44	176	324	2	11	172	197
Future Volume (vph)	153	23	110	2	43	44	176	324	2	11	172	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.92		1.00	1.00		1.00	0.92	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1716	1531	1745	1674		1711	1799		1711	1656	
Flt Permitted		0.69	1.00	0.65	1.00		0.37	1.00		0.56	1.00	
Satd. Flow (perm)		1241	1531	1187	1674		673	1799		1015	1656	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	153	23	110	2	43	44	176	324	2	11	172	197
RTOR Reduction (vph)	0	0	79	0	28	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	176	31	2	59	0	176	326	0	11	338	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		20.7	20.7	20.7	20.7		40.5	34.4		30.3	29.3	
Effective Green, g (s)		20.7	20.7	20.7	20.7		40.5	34.4		30.3	29.3	
Actuated g/C Ratio		0.28	0.28	0.28	0.28		0.55	0.46		0.41	0.40	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		346	427	331	467		453	835		424	654	
v/s Ratio Prot					0.04		c0.03	0.18		0.00	c0.20	
v/s Ratio Perm		c0.14	0.02	0.00			0.18			0.01		
v/c Ratio		0.51	0.07	0.01	0.13		0.39	0.39		0.03	0.52	
Uniform Delay, d1		22.4	19.6	19.3	19.9		9.4	13.0		13.0	17.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.1	0.0	0.1		0.6	1.4		0.0	2.9	
Delay (s)		23.6	19.7	19.3	20.1		10.0	14.4		13.1	19.9	
Level of Service		C	B	B	C		A	B		B	B	
Approach Delay (s/veh)		22.1			20.0			12.8			19.7	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.5				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			74.1				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			62.2%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Intersection

Int Delay, s/veh 0

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 0 0 0 135 36 0

Future Vol, veh/h 0 0 0 135 36 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 0 0 0 135 36 0

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 171 36 36 0 - 0

Stage 1 36 - - - - -

Stage 2 135 - - - - -

Critical Hdwy 6.4 6.2 4.1 - - -

Critical Hdwy Stg 1 5.4 - - - - -

Critical Hdwy Stg 2 5.4 - - - - -

Follow-up Hdwy 3.5 3.3 2.2 - - -

Pot Cap-1 Maneuver 824 1042 1588 - - -

Stage 1 992 - - - - -

Stage 2 896 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 824 1042 1588 - - -

Mov Cap-2 Maneuver 824 - - - - -

Stage 1 992 - - - - -

Stage 2 896 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 0 0 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1588 - - - -

HCM Lane V/C Ratio - - - - -

HCM Ctrl Dly (s/v) 0 - 0 - -

HCM Lane LOS A - A - -

HCM 95th %tile Q(veh) 0 - - - -

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	16	0	0	0
Future Vol, veh/h	0	12	16	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	12	16	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	16	0	0 28 16
Stage 1	-	-	- 16 -
Stage 2	-	-	- 12 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1615	-	- 992 1069
Stage 1	-	-	- 1012 -
Stage 2	-	-	- 1016 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1615	-	- 992 1069
Mov Cap-2 Maneuver	-	-	- 992 -
Stage 1	-	-	- 1012 -
Stage 2	-	-	- 1016 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1615	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM Signalized Intersection Capacity Analysis

15: US-7 & Harbor Rd/Falls Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	83	83	7	100	169	66	578	2	64	543	55
Future Volume (vph)	91	83	83	7	100	169	66	578	2	64	543	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1639			1760	1476	1558	1639		1544	1599	
Flt Permitted		0.98			1.00	1.00	0.11	1.00		0.14	1.00	
Satd. Flow (perm)		1639			1760	1476	187	1639		229	1599	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	91	83	83	7	100	169	66	578	2	64	543	55
RTOR Reduction (vph)	0	15	0	0	0	141	0	0	0	0	3	0
Lane Group Flow (vph)	0	242	0	0	107	28	66	580	0	64	595	0
Confl. Peds. (#/hr)	2		5	5		2	1					1
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	12%	12%	12%	13%	13%	13%
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases						8	2			6		
Actuated Green, G (s)		18.0			10.1	17.6	40.9	36.3		46.7	39.2	
Effective Green, g (s)		18.0			10.1	17.6	40.9	36.3		46.7	39.2	
Actuated g/C Ratio		0.17			0.10	0.17	0.39	0.34		0.44	0.37	
Clearance Time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		280			168	246	132	565		195	595	
v/s Ratio Prot		c0.15			c0.06	0.01	0.02	0.35		c0.02	c0.37	
v/s Ratio Perm						0.01	0.17			0.12		
v/c Ratio		0.86			0.64	0.11	0.50	1.03		0.33	1.00	
Uniform Delay, d1		42.5			45.8	37.2	43.6	34.5		38.0	33.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		22.4			5.7	0.1	1.1	44.8		0.4	36.8	
Delay (s)		64.9			51.5	37.3	44.7	79.3		38.3	69.9	
Level of Service		E			D	D	D	E		D	E	
Approach Delay (s/veh)		64.9			42.8			75.8			66.8	
Approach LOS		E			D			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)		66.1										
HCM 2000 Volume to Capacity ratio		0.87										
Actuated Cycle Length (s)		105.3										
Intersection Capacity Utilization		74.1%										
Analysis Period (min)		15										
c Critical Lane Group												

11 - 2032 AM No Build 4:03 pm 08/21/2025 Baseline

Synchro 12 Report
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HCM Signalized Intersection Capacity Analysis

16: US-7 & Bostwick Rd/Marsett St

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	14	0	32	11	7	1	622	46	3	619	10
Future Volume (vph)	17	14	0	32	11	7	1	622	46	3	619	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.98			0.99			1.00	
Flt Protected	0.95	1.00			0.97			1.00			1.00	
Satd. Flow (prot)	1694	1783			1679			1685			1636	
Flt Permitted	1.00	1.00			0.96			1.00			1.00	
Satd. Flow (perm)	1783	1783			1671			1684			1633	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	14	0	32	11	7	1	622	46	3	619	10
RTOR Reduction (vph)	0	0	0	0	7	0	0	2	0	0	1	0
Lane Group Flow (vph)	17	14	0	0	43	0	0	667	0	0	631	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	8%	8%	8%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	3.4	3.4			3.4			43.6			43.6	
Effective Green, g (s)	3.4	3.4			3.4			43.6			43.6	
Actuated g/C Ratio	0.06	0.06			0.06			0.74			0.74	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	102	102			96			1244			1206	
v/s Ratio Prot		0.01										
v/s Ratio Perm	0.01				c0.03			c0.40			0.39	
v/c Ratio	0.17	0.14			0.45			0.54			0.52	
Uniform Delay, d1	26.5	26.4			26.9			3.3			3.3	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.8	0.6			3.4			1.7			1.6	
Delay (s)	27.2	27.0			30.3			5.0			4.9	
Level of Service	C	C			C			A			A	
Approach Delay (s/veh)		27.1			30.3			5.0			4.9	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			6.4									
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			59.0									
Intersection Capacity Utilization			55.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh 15.6

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	220	10	65	240	138	6	62	27	112	110	66
Future Vol, veh/h	40	220	10	65	240	138	6	62	27	112	110	66
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	40	220	10	65	240	138	6	62	27	112	110	66
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	13.5	18.6	10.8	14.5
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	15%	15%	39%
Vol Thru, %	65%	81%	54%	38%
Vol Right, %	28%	4%	31%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	95	270	443	288
LT Vol	6	40	65	112
Through Vol	62	220	240	110
RT Vol	27	10	138	66
Lane Flow Rate	95	270	443	288
Geometry Grp	1	1	1	1
Degree of Util (X)	0.17	0.438	0.664	0.478
Departure Headway (Hd)	6.458	5.835	5.393	5.976
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	559	610	664	596
Service Time	4.458	3.931	3.477	4.069
HCM Lane V/C Ratio	0.17	0.443	0.667	0.483
HCM Control Delay, s/veh	10.8	13.5	18.6	14.5
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	2.2	5	2.6

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	332	26	1	444	22	2
Future Vol, veh/h	332	26	1	444	22	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	0	0	0	0
Mvmt Flow	332	26	1	444	22	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	358
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1212
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1212
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.02	15.22
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	376	-	-	4	-
HCM Lane V/C Ratio	0.064	-	-	0.001	-
HCM Ctrl Dly (s/v)	15.2	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 7th TWSC
3: Irish Hill Rd & Thompson Rd

09/16/2025

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	311	0	0	433	36	0	0	0	13	0	12
Future Vol, veh/h	23	311	0	0	433	36	0	0	0	13	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	311	0	0	433	36	0	0	0	13	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	469	0	0	311	0	0	790	826	311	808	808	451
Stage 1	-	-	-	-	-	-	357	357	-	451	451	-
Stage 2	-	-	-	-	-	-	433	469	-	357	357	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1098	-	-	1261	-	-	310	310	734	302	317	613
Stage 1	-	-	-	-	-	-	665	632	-	592	574	-
Stage 2	-	-	-	-	-	-	605	564	-	665	632	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1098	-	-	1261	-	-	296	302	734	294	309	613
Mov Cap-2 Maneuver	-	-	-	-	-	-	296	302	-	294	309	-
Stage 1	-	-	-	-	-	-	648	616	-	592	574	-
Stage 2	-	-	-	-	-	-	593	564	-	648	616	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.57	0	0	14.81
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	124	-	-	1261	-	-	392
HCM Lane V/C Ratio	-	0.021	-	-	-	-	-	0.064
HCM Ctrl Dly (s/v)	0	8.3	0	-	0	-	-	14.8
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.2

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Intersection

Intersection Delay, s/veh 15.6

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	150	177	3	30	258	30	4	53	14	68	123	192
Future Vol, veh/h	150	177	3	30	258	30	4	53	14	68	123	192
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	0	0	0	2	2	2	0	0	0
Mvmt Flow	150	177	3	30	258	30	4	53	14	68	123	192
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16	15	10.6	16.8
HCM LOS	C	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	45%	9%	18%
Vol Thru, %	75%	54%	81%	32%
Vol Right, %	20%	1%	9%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	71	330	318	383
LT Vol	4	150	30	68
Through Vol	53	177	258	123
RT Vol	14	3	30	192
Lane Flow Rate	71	330	318	383
Geometry Grp	1	1	1	1
Degree of Util (X)	0.131	0.544	0.513	0.598
Departure Headway (Hd)	6.638	5.931	5.807	5.622
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	543	604	614	636
Service Time	4.638	4.026	3.903	3.713
HCM Lane V/C Ratio	0.131	0.546	0.518	0.602
HCM Control Delay, s/veh	10.6	16	15	16.8
HCM Lane LOS	B	C	B	C
HCM 95th-tile Q	0.4	3.3	2.9	4

Intersection

Intersection Delay, s/veh 10.8

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	96	31	123	9	33	5	68	70	0	6	165	205
Future Vol, veh/h	96	31	123	9	33	5	68	70	0	6	165	205
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	0	0	0	1	1	1	0	0	0
Mvmt Flow	96	31	123	9	33	5	68	70	0	6	165	205
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0.7	9	9.6	11.6
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	49%	38%	19%	2%
Vol Thru, %	51%	12%	70%	44%
Vol Right, %	0%	49%	11%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	138	250	47	376
LT Vol	68	96	9	6
Through Vol	70	31	33	165
RT Vol	0	123	5	205
Lane Flow Rate	138	250	47	376
Geometry Grp	1	1	1	1
Degree of Util (X)	0.2	0.344	0.072	0.471
Departure Headway (Hd)	5.207	4.959	5.542	4.505
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	680	718	650	793
Service Time	3.304	3.051	3.542	2.579
HCM Lane V/C Ratio	0.203	0.348	0.072	0.474
HCM Control Delay, s/veh	9.6	10.7	9	11.6
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.7	1.5	0.2	2.5

Intersection

Intersection Delay, s/veh 7.6

Intersection LOS A

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 0 17 15 64 146 3

Future Vol, veh/h 0 17 15 64 146 3

Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00

Heavy Vehicles, % 0 0 1 1 0 0

Mvmt Flow 0 17 15 64 146 3

Number of Lanes 1 0 0 1 1 0

Approach EB NB SB

Opposing Approach SB NB

Opposing Lanes 0 1 1

Conflicting Approach Left SB EB

Conflicting Lanes Left 1 1 0

Conflicting Approach Right NB EB

Conflicting Lanes Right 1 0 1

HCM Control Delay, s/veh 6.9 7.5 7.8

HCM LOS A A A

Lane NBLn1 EBLn1 SBLn1

Vol Left, % 19% 0% 0%

Vol Thru, % 81% 0% 98%

Vol Right, % 0% 100% 2%

Sign Control Stop Stop Stop

Traffic Vol by Lane 79 17 149

LT Vol 15 0 0

Through Vol 64 0 146

RT Vol 0 17 3

Lane Flow Rate 79 17 149

Geometry Grp 1 1 1

Degree of Util (X) 0.09 0.017 0.165

Departure Headway (Hd) 4.095 3.686 3.976

Convergence, Y/N Yes Yes Yes

Cap 874 951 903

Service Time 2.127 1.785 1.997

HCM Lane V/C Ratio 0.09 0.018 0.165

HCM Control Delay, s/veh 7.5 6.9 7.8

HCM Lane LOS A A A

HCM 95th-tile Q 0.3 0.1 0.6

Intersection

Intersection Delay, s/veh 10

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	13	0	20	0	216	10	28	361	2
Future Vol, veh/h	1	0	0	13	0	20	0	216	10	28	361	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	3	3	3	0	0	0	1	1	1
Mvmt Flow	1	0	0	13	0	20	0	216	10	28	361	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.2	9	10.7
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	39%	7%
Vol Thru, %	96%	0%	0%	92%
Vol Right, %	4%	0%	61%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	226	1	33	391
LT Vol	0	1	13	28
Through Vol	216	0	0	361
RT Vol	10	0	20	2
Lane Flow Rate	226	1	33	391
Geometry Grp	1	1	1	1
Degree of Util (X)	0.273	0.002	0.046	0.451
Departure Headway (Hd)	4.344	5.478	4.985	4.157
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	832	655	720	852
Service Time	2.352	3.495	3	2.255
HCM Lane V/C Ratio	0.272	0.002	0.046	0.459
HCM Control Delay, s/veh	9	8.5	8.2	10.7
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1.1	0	0.1	2.4

Intersection

Intersection Delay, s/veh 13.7

Intersection LOS B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	273	118	35	185	245	89
Future Vol, veh/h	273	118	35	185	245	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	273	118	35	185	245	89
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	11.5	11.5	13.1
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	16%	70%	0%
Vol Thru, %	84%	0%	73%
Vol Right, %	0%	30%	27%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	220	391	334
LT Vol	35	273	0
Through Vol	185	0	245
RT Vol	0	118	89
Lane Flow Rate	220	391	334
Geometry Grp	1	1	1
Degree of Util (X)	0.342	0.58	0.484
Departure Headway (Hd)	5.59	5.34	5.212
Convergence, Y/N	Yes	Yes	Yes
Cap	642	676	691
Service Time	3.634	3.375	3.251
HCM Lane V/C Ratio	0.343	0.578	0.483
HCM Control Delay, s/veh	11.5	15.5	13.1
HCM Lane LOS	B	C	B
HCM 95th-tile Q	1.5	3.7	2.7

Intersection

Int Delay, s/veh 6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	71	102	334	150	208	298
Future Vol, veh/h	71	102	334	150	208	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	71	102	334	150	208	298

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1123	409	0
Stage 1	409	-	-
Stage 2	714	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	229	645	-
Stage 1	673	-	-
Stage 2	487	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	176	645	-
Mov Cap-2 Maneuver	176	-	-
Stage 1	673	-	-
Stage 2	375	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	30.68	0	3.74
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	308	740
HCM Lane V/C Ratio	-	-	0.562	0.192
HCM Ctrl Dly (s/v)	-	-	30.7	9.1
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	3.2	0.7

HCM Signalized Intersection Capacity Analysis

10: Spear St & Allen Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	37	216	4	22	17	98	325	7	35	288	169
Future Volume (vph)	511	37	216	4	22	17	98	325	7	35	288	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00		1.00	0.94	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730	1546	1745	1698		1745	1831		1745	1735	
Flt Permitted		0.71	1.00	0.26	1.00		0.22	1.00		0.44	1.00	
Satd. Flow (perm)		1289	1546	473	1698		413	1831		810	1735	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	511	37	216	4	22	17	98	325	7	35	288	169
RTOR Reduction (vph)	0	0	74	0	10	0	0	1	0	0	18	0
Lane Group Flow (vph)	0	548	142	4	29	0	98	331	0	35	439	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		34.1	34.1	34.1	34.1		31.1	26.4		28.7	25.2	
Effective Green, g (s)		34.1	34.1	34.1	34.1		31.1	26.4		28.7	25.2	
Actuated g/C Ratio		0.42	0.42	0.42	0.42		0.38	0.32		0.35	0.31	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		536	642	196	706		232	589		323	533	
v/s Ratio Prot					0.02		c0.02	0.18		0.00	c0.25	
v/s Ratio Perm		c0.43	0.09	0.01			0.14			0.03		
v/c Ratio		1.02	0.22	0.02	0.04		0.42	0.56		0.11	0.82	
Uniform Delay, d1		24.0	15.4	14.1	14.2		18.2	23.0		17.9	26.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		44.7	0.2	0.0	0.0		1.2	3.9		0.1	13.5	
Delay (s)		68.6	15.6	14.2	14.3		19.4	26.9		18.0	39.8	
Level of Service		E	B	B	B		B	C		B	D	
Approach Delay (s/veh)		53.6			14.2			25.2			38.3	
Approach LOS		D			B			C			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			41.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			82.0				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			82.8%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

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Intersection

Int Delay, s/veh 0

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 0 0 0 63 149 0

Future Vol, veh/h 0 0 0 63 149 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 0 0 0 63 149 0

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 212 149 149 0 - 0

Stage 1 149 - - - - -

Stage 2 63 - - - - -

Critical Hdwy 6.4 6.2 4.1 - - -

Critical Hdwy Stg 1 5.4 - - - - -

Critical Hdwy Stg 2 5.4 - - - - -

Follow-up Hdwy 3.5 3.3 2.2 - - -

Pot Cap-1 Maneuver 781 903 1445 - - -

Stage 1 884 - - - - -

Stage 2 965 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 781 903 1445 - - -

Mov Cap-2 Maneuver 781 - - - - -

Stage 1 884 - - - - -

Stage 2 965 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 0 0 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1445 - - - -

HCM Lane V/C Ratio - - - - -

HCM Ctrl Dly (s/v) 0 - 0 - -

HCM Lane LOS A - A - -

HCM 95th %tile Q(veh) 0 - - - -

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	18	19	0	0	0
Future Vol, veh/h	0	18	19	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	19	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	19	0	37
Stage 1	-	-	19
Stage 2	-	-	18
Critical Hdwy	4.1	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	1611	-	981
Stage 1	-	-	1009
Stage 2	-	-	1010
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1611	-	981
Mov Cap-2 Maneuver	-	-	981
Stage 1	-	-	1009
Stage 2	-	-	1010

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1611	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM Signalized Intersection Capacity Analysis

15: US-7 & Harbor Rd/Falls Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	94	68	7	135	159	33	594	9	172	615	57
Future Volume (vph)	46	94	68	7	135	159	33	594	9	172	615	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.99			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1671			1814	1498	1631	1713		1646	1706	
Flt Permitted		0.99			1.00	1.00	0.11	1.00		0.13	1.00	
Satd. Flow (perm)		1671			1814	1498	189	1713		225	1706	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	46	94	68	7	135	159	33	594	9	172	615	57
RTOR Reduction (vph)	0	15	0	0	0	126	0	1	0	0	2	0
Lane Group Flow (vph)	0	193	0	0	142	33	33	602	0	172	670	0
Confl. Peds. (#/hr)	10		2	2		10	2					2
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	7%	7%	7%	6%	6%	6%
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases						8	2			6		
Actuated Green, G (s)		15.0			10.9	22.5	40.9	36.3		53.9	43.3	
Effective Green, g (s)		15.0			10.9	22.5	40.9	36.3		53.9	43.3	
Actuated g/C Ratio		0.14			0.10	0.21	0.38	0.34		0.50	0.40	
Clearance Time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		233			184	314	133	580		266	689	
v/s Ratio Prot		c0.12			c0.08	0.01	0.01	0.35		c0.07	c0.39	
v/s Ratio Perm						0.01	0.08			0.25		
v/c Ratio		0.83			0.77	0.11	0.25	1.04		0.65	0.97	
Uniform Delay, d1		44.8			46.9	34.2	46.1	35.5		38.0	31.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		19.8			16.5	0.1	0.4	47.7		4.0	28.1	
Delay (s)		64.6			63.5	34.3	46.4	83.2		42.0	59.4	
Level of Service		E			E	C	D	F		D	E	
Approach Delay (s/veh)		64.6			48.0			81.3			55.9	
Approach LOS		E			D			F			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)		63.7										
HCM 2000 Volume to Capacity ratio		0.90										
Actuated Cycle Length (s)		107.2										
Intersection Capacity Utilization		82.9%										
Analysis Period (min)		15										
c Critical Lane Group												

12 - 2032 PM No Build 4:00 pm 08/21/2025 Baseline

Synchro 12 Report

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HCM Signalized Intersection Capacity Analysis

16: US-7 & Bostwick Rd/Marsett St

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	58	8	195	54	22	4	547	161	24	618	48
Future Volume (vph)	66	58	8	195	54	22	4	547	161	24	618	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.99			0.97			0.99	
Flt Protected	0.95	1.00			0.97			1.00			1.00	
Satd. Flow (prot)	1745	1803			1753			1695			1730	
Flt Permitted	0.64	1.00			0.74			1.00			0.97	
Satd. Flow (perm)	1184	1803			1353			1690			1674	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	66	58	8	195	54	22	4	547	161	24	618	48
RTOR Reduction (vph)	0	6	0	0	5	0	0	15	0	0	4	0
Lane Group Flow (vph)	66	60	0	0	266	0	0	697	0	0	686	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.3	16.3			16.3			35.3			35.3	
Effective Green, g (s)	16.3	16.3			16.3			35.3			35.3	
Actuated g/C Ratio	0.26	0.26			0.26			0.56			0.56	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	303	462			346			938			929	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.06				c0.20			c0.41			0.41	
v/c Ratio	0.22	0.13			0.77			0.74			0.74	
Uniform Delay, d1	18.6	18.2			21.9			10.7			10.7	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	0.1			9.8			5.3			5.2	
Delay (s)	19.0	18.3			31.7			16.0			15.9	
Level of Service	B	B			C			B			B	
Approach Delay (s/veh)		18.7			31.7			16.0			15.9	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			18.5									B
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			63.6								12.0	
Intersection Capacity Utilization			83.9%								E	
ICU Level of Service												
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh 13

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	36	214	6	30	186	147	15	130	75	119	33	16
Future Vol, veh/h	36	214	6	30	186	147	15	130	75	119	33	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	1	1	1	5	5	5
Mvmt Flow	36	214	6	30	186	147	15	130	75	119	33	16
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.7	14.5	12	11.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	14%	8%	71%
Vol Thru, %	59%	84%	51%	20%
Vol Right, %	34%	2%	40%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	220	256	363	168
LT Vol	15	36	30	119
Through Vol	130	214	186	33
RT Vol	75	6	147	16
Lane Flow Rate	220	256	363	168
Geometry Grp	1	1	1	1
Degree of Util (X)	0.352	0.407	0.538	0.289
Departure Headway (Hd)	5.766	5.729	5.335	6.203
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	620	625	672	575
Service Time	3.844	3.803	3.4	4.286
HCM Lane V/C Ratio	0.355	0.41	0.54	0.292
HCM Control Delay, s/veh	12	12.7	14.5	11.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.6	2	3.2	1.2

Intersection

Int Delay, s/veh 0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	393	19	3	321	36	3
Future Vol, veh/h	393	19	3	321	36	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	0	0
Mvmt Flow	393	19	3	321	36	3

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	412
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.13
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.227
Pot Cap-1 Maneuver	-	-	1142
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1142
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.08	14.87
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	404	-	-	17	-
HCM Lane V/C Ratio	0.097	-	-	0.003	-
HCM Ctrl Dly (s/v)	14.9	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	380	10	14	276	4	28	0	41	28	0	19
Future Vol, veh/h	6	380	10	14	276	4	28	0	41	28	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	2	2	2
Mvmt Flow	6	380	10	14	276	4	28	0	41	28	0	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	280	0	0	390	0	0	701	705	385	698	708	278
Stage 1	-	-	-	-	-	-	397	397	-	306	306	-
Stage 2	-	-	-	-	-	-	304	308	-	392	402	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1283	-	-	1169	-	-	356	363	667	355	360	761
Stage 1	-	-	-	-	-	-	633	607	-	704	662	-
Stage 2	-	-	-	-	-	-	710	664	-	633	600	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1283	-	-	1169	-	-	340	356	667	326	352	761
Mov Cap-2 Maneuver	-	-	-	-	-	-	340	356	-	326	352	-
Stage 1	-	-	-	-	-	-	629	603	-	694	652	-
Stage 2	-	-	-	-	-	-	682	654	-	590	597	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.12			0.39			13.76			14.54		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	480	27	-	-	85	-	-	424
HCM Lane V/C Ratio	0.144	0.005	-	-	0.012	-	-	0.111
HCM Ctrl Dly (s/v)	13.8	7.8	0	-	8.1	0	-	14.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.4

Intersection

Intersection Delay, s/veh 17.4

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	179	264	1	13	160	65	2	168	45	58	49	116
Future Vol, veh/h	179	264	1	13	160	65	2	168	45	58	49	116
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	4	4	4
Mvmt Flow	179	264	1	13	160	65	2	168	45	58	49	116
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	23.5	13.3	13.4	13.3
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	40%	5%	26%
Vol Thru, %	78%	59%	67%	22%
Vol Right, %	21%	0%	27%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	444	238	223
LT Vol	2	179	13	58
Through Vol	168	264	160	49
RT Vol	45	1	65	116
Lane Flow Rate	215	444	238	223
Geometry Grp	1	1	1	1
Degree of Util (X)	0.383	0.732	0.404	0.39
Departure Headway (Hd)	6.405	5.932	6.116	6.289
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	561	608	588	571
Service Time	4.459	3.975	4.169	4.343
HCM Lane V/C Ratio	0.383	0.73	0.405	0.391
HCM Control Delay, s/veh	13.4	23.5	13.3	13.3
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	1.8	6.3	1.9	1.8

Intersection

Intersection Delay, s/veh 15.4

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	168	32	127	2	26	5	117	337	8	2	75	82
Future Vol, veh/h	168	32	127	2	26	5	117	337	8	2	75	82
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	7	7	7	1	1	1	3	3	3
Mvmt Flow	168	32	127	2	26	5	117	337	8	2	75	82
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	4.1	9.7	18.6	10.2
HCM LOS	B	A	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	51%	6%	1%
Vol Thru, %	73%	10%	79%	47%
Vol Right, %	2%	39%	15%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	462	327	33	159
LT Vol	117	168	2	2
Through Vol	337	32	26	75
RT Vol	8	127	5	82
Lane Flow Rate	462	327	33	159
Geometry Grp	1	1	1	1
Degree of Util (X)	0.676	0.504	0.057	0.239
Departure Headway (Hd)	5.264	5.553	6.254	5.414
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	684	647	570	661
Service Time	3.302	3.598	4.322	3.466
HCM Lane V/C Ratio	0.675	0.505	0.058	0.241
HCM Control Delay, s/veh	18.6	14.1	9.7	10.2
HCM Lane LOS	C	B	A	B
HCM 95th-tile Q	5.3	2.8	0.2	0.9

Intersection

Intersection Delay, s/veh 7.7

Intersection LOS A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	9	11	129	33	6
Future Vol, veh/h	8	9	11	129	33	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	8	8	2	2	6	6
Mvmt Flow	8	9	11	129	33	6
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	7.3	7.8	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	8%	47%	0%
Vol Thru, %	92%	0%	85%
Vol Right, %	0%	53%	15%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	140	17	39
LT Vol	11	8	0
Through Vol	129	0	33
RT Vol	0	9	6
Lane Flow Rate	140	17	39
Geometry Grp	1	1	1
Degree of Util (X)	0.156	0.019	0.044
Departure Headway (Hd)	4.009	4.12	4.043
Convergence, Y/N	Yes	Yes	Yes
Cap	897	858	883
Service Time	2.024	2.198	2.078
HCM Lane V/C Ratio	0.156	0.02	0.044
HCM Control Delay, s/veh	7.8	7.3	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.1	0.1

Intersection

Intersection Delay, s/veh 10.6

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	0	0	11	0	40	0	400	18	27	212	0
Future Vol, veh/h	0	0	0	11	0	40	0	400	18	27	212	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	9	9	9	2	2	2	3	3	3
Mvmt Flow	0	0	0	11	0	40	0	400	18	27	212	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0	8.5	11.5	9.5
HCM LOS	-	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	22%	11%
Vol Thru, %	96%	100%	0%	89%
Vol Right, %	4%	0%	78%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	418	0	51	239
LT Vol	0	0	11	27
Through Vol	400	0	0	212
RT Vol	18	0	40	0
Lane Flow Rate	418	0	51	239
Geometry Grp	1	1	1	1
Degree of Util (X)	0.498	0	0.071	0.3
Departure Headway (Hd)	4.291	5.411	5.041	4.524
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	840	0	709	796
Service Time	2.307	3.455	3.079	2.544
HCM Lane V/C Ratio	0.498	0	0.072	0.3
HCM Control Delay, s/veh	11.5	8.5	8.5	9.5
HCM Lane LOS	B	N	A	A
HCM 95th-tile Q	2.8	0	0.2	1.3

Intersection

Intersection Delay, s/veh 14.5

Intersection LOS B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	149	88	112	354	173	89
Future Vol, veh/h	149	88	112	354	173	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	5	5	3	3	3	3
Mvmt Flow	149	88	112	354	173	89
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	12.1	17.5	11.2
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	24%	63%	0%
Vol Thru, %	76%	0%	66%
Vol Right, %	0%	37%	34%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	466	237	262
LT Vol	112	149	0
Through Vol	354	0	173
RT Vol	0	88	89
Lane Flow Rate	466	237	262
Geometry Grp	1	1	1
Degree of Util (X)	0.661	0.375	0.372
Departure Headway (Hd)	5.109	5.696	5.107
Convergence, Y/N	Yes	Yes	Yes
Cap	713	630	705
Service Time	3.109	3.737	3.141
HCM Lane V/C Ratio	0.654	0.376	0.372
HCM Control Delay, s/veh	17.5	12.1	11.2
HCM Lane LOS	C	B	B
HCM 95th-tile Q	5	1.7	1.7

Intersection

Int Delay, s/veh 4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	140	390	124	84	203
Future Vol, veh/h	66	140	390	124	84	203
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	140	390	124	84	203

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	823	452	0
Stage 1	452	-	-
Stage 2	371	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	343	608	-
Stage 1	641	-	-
Stage 2	698	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	312	608	-
Mov Cap-2 Maneuver	312	-	-
Stage 1	641	-	-
Stage 2	635	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	18.69	0	2.55
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	466	527
HCM Lane V/C Ratio	-	-	0.442	0.08
HCM Ctrl Dly (s/v)	-	-	18.7	8.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.2	0.3

HCM Signalized Intersection Capacity Analysis

10: Spear St & Allen Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	23	116	2	43	44	193	354	2	11	180	197
Future Volume (vph)	153	23	116	2	43	44	193	354	2	11	180	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.92		1.00	1.00		1.00	0.92	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1716	1531	1745	1674		1711	1799		1711	1660	
Flt Permitted		0.69	1.00	0.65	1.00		0.37	1.00		0.55	1.00	
Satd. Flow (perm)		1241	1531	1187	1674		660	1799		987	1660	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	153	23	116	2	43	44	193	354	2	11	180	197
RTOR Reduction (vph)	0	0	84	0	28	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	176	32	2	59	0	193	356	0	11	347	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		20.7	20.7	20.7	20.7		40.5	34.4		30.3	29.3	
Effective Green, g (s)		20.7	20.7	20.7	20.7		40.5	34.4		30.3	29.3	
Actuated g/C Ratio		0.28	0.28	0.28	0.28		0.55	0.46		0.41	0.40	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		346	427	331	467		447	835		413	656	
v/s Ratio Prot					0.04		c0.04	0.20		0.00	c0.21	
v/s Ratio Perm		c0.14	0.02	0.00			0.20			0.01		
v/c Ratio		0.51	0.08	0.01	0.13		0.43	0.43		0.03	0.53	
Uniform Delay, d1		22.4	19.7	19.3	19.9		9.6	13.3		13.0	17.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.1	0.0	0.1		0.7	1.6		0.0	3.0	
Delay (s)		23.6	19.7	19.3	20.1		10.3	14.9		13.1	20.2	
Level of Service		C	B	B	C		B	B		B	C	
Approach Delay (s/veh)		22.1			20.0			13.2			20.0	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			74.1				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			63.6%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Intersection

Int Delay, s/veh 2.8

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 73 4 1 135 36 25

Future Vol, veh/h 73 4 1 135 36 25

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 73 4 1 135 36 25

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 186 49 61 0 - 0

Stage 1 49 - - - - -

Stage 2 137 - - - - -

Critical Hdwy 6.4 6.2 4.1 - - -

Critical Hdwy Stg 1 5.4 - - - - -

Critical Hdwy Stg 2 5.4 - - - - -

Follow-up Hdwy 3.5 3.3 2.2 - - -

Pot Cap-1 Maneuver 808 1026 1555 - - -

Stage 1 979 - - - - -

Stage 2 895 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 808 1026 1555 - - -

Mov Cap-2 Maneuver 808 - - - - -

Stage 1 978 - - - - -

Stage 2 895 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 9.87 0.05 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 13 - 817 - -

HCM Lane V/C Ratio 0.001 - 0.094 - -

HCM Ctrl Dly (s/v) 7.3 0 9.9 - -

HCM Lane LOS A A A - -

HCM 95th %tile Q(veh) 0 - 0.3 - -

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	12	16	1	4	12
Future Vol, veh/h	4	12	16	1	4	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	12	16	1	4	12

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	17	0	0 37 17
Stage 1	-	-	- 17 -
Stage 2	-	-	- 20 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1613	-	- 981 1068
Stage 1	-	-	- 1011 -
Stage 2	-	-	- 1008 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1613	-	- 979 1068
Mov Cap-2 Maneuver	-	-	- 979 -
Stage 1	-	-	- 1009 -
Stage 2	-	-	- 1008 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.81	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	450	-	-	-	1044
HCM Lane V/C Ratio	0.002	-	-	-	0.015
HCM Ctrl Dly (s/v)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM Signalized Intersection Capacity Analysis

15: US-7 & Harbor Rd/Falls Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	88	83	7	109	184	66	578	2	68	543	55
Future Volume (vph)	91	88	83	7	109	184	66	578	2	68	543	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1641			1761	1476	1558	1639		1544	1599	
Flt Permitted		0.98			1.00	1.00	0.11	1.00		0.14	1.00	
Satd. Flow (perm)		1641			1761	1476	181	1639		223	1599	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	91	88	83	7	109	184	66	578	2	68	543	55
RTOR Reduction (vph)	0	14	0	0	0	153	0	0	0	0	3	0
Lane Group Flow (vph)	0	248	0	0	116	31	66	580	0	68	595	0
Confl. Peds. (#/hr)	2		5	5		2	1					1
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	12%	12%	12%	13%	13%	13%
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases						8	2			6		
Actuated Green, G (s)		18.3			10.4	18.0	41.0	36.3		46.8	39.2	
Effective Green, g (s)		18.3			10.4	18.0	41.0	36.3		46.8	39.2	
Actuated g/C Ratio		0.17			0.10	0.17	0.39	0.34		0.44	0.37	
Clearance Time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		283			172	250	131	561		193	591	
v/s Ratio Prot		c0.15			c0.07	0.01	0.02	0.35		c0.03	c0.37	
v/s Ratio Perm						0.01	0.17			0.13		
v/c Ratio		0.88			0.67	0.12	0.50	1.03		0.35	1.01	
Uniform Delay, d1		42.7			46.2	37.3	44.1	34.9		38.8	33.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		24.1			7.9	0.1	1.1	47.0		0.4	38.6	
Delay (s)		66.8			54.1	37.4	45.2	81.9		39.2	72.0	
Level of Service		E			D	D	D	F		D	E	
Approach Delay (s/veh)		66.8			43.9			78.1			68.7	
Approach LOS		E			D			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)		67.7										
HCM 2000 Volume to Capacity ratio		0.88										
Actuated Cycle Length (s)		106.0										
Intersection Capacity Utilization		74.3%										
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

16: US-7 & Bostwick Rd/Marsett St

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	16	0	44	15	7	1	622	50	3	619	10
Future Volume (vph)	17	16	0	44	15	7	1	622	50	3	619	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.99			0.99			1.00	
Flt Protected	0.95	1.00			0.97			1.00			1.00	
Satd. Flow (prot)	1694	1783			1685			1683			1636	
Flt Permitted	0.74	1.00			0.79			1.00			1.00	
Satd. Flow (perm)	1321	1783			1375			1683			1633	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	16	0	44	15	7	1	622	50	3	619	10
RTOR Reduction (vph)	0	0	0	0	6	0	0	3	0	0	1	0
Lane Group Flow (vph)	17	16	0	0	60	0	0	670	0	0	631	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	8%	8%	8%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	5.4	5.4			5.4			42.2			42.2	
Effective Green, g (s)	5.4	5.4			5.4			42.2			42.2	
Actuated g/C Ratio	0.09	0.09			0.09			0.71			0.71	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	119	161			124			1191			1156	
v/s Ratio Prot		0.01										
v/s Ratio Perm	0.01				0.04			0.40			0.39	
v/c Ratio	0.14	0.10			0.48			0.56			0.55	
Uniform Delay, d1	25.0	24.9			25.8			4.2			4.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.3			2.9			1.9			1.9	
Delay (s)	25.5	25.1			28.7			6.2			6.0	
Level of Service	C	C			C			A			A	
Approach Delay (s/veh)		25.3			28.7			6.2			6.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			7.6									
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			59.6									
Intersection Capacity Utilization			56.8%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh 18.5

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	40	237	10	65	251	154	6	62	27	138	110	66
Future Vol, veh/h	40	237	10	65	251	154	6	62	27	138	110	66
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	40	237	10	65	251	154	6	62	27	138	110	66
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15	23.4	11.3	16.7
HCM LOS	B	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	14%	14%	44%
Vol Thru, %	65%	83%	53%	35%
Vol Right, %	28%	3%	33%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	95	287	470	314
LT Vol	6	40	65	138
Through Vol	62	237	251	110
RT Vol	27	10	154	66
Lane Flow Rate	95	287	470	314
Geometry Grp	1	1	1	1
Degree of Util (X)	0.179	0.49	0.744	0.548
Departure Headway (Hd)	6.772	6.152	5.695	6.28
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	527	585	639	571
Service Time	4.847	4.207	3.695	4.336
HCM Lane V/C Ratio	0.18	0.491	0.736	0.55
HCM Control Delay, s/veh	11.3	15	23.4	16.7
HCM Lane LOS	B	B	C	C
HCM 95th-tile Q	0.6	2.7	6.6	3.3

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	362	39	1	463	30	2
Future Vol, veh/h	362	39	1	463	30	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	0	0	0	0
Mvmt Flow	362	39	1	463	30	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	401	0	847	382
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	465	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1169	-	335	670
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	636	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1169	-	335	670
Mov Cap-2 Maneuver	-	-	-	-	335	-
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	636	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0.02		16.48	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	346	-	-	4	-	
HCM Lane V/C Ratio	0.093	-	-	0.001	-	
HCM Ctrl Dly (s/v)	16.5	-	-	8.1	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	311	30	44	433	36	19	0	27	13	0	12
Future Vol, veh/h	23	311	30	44	433	36	19	0	27	13	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	311	30	44	433	36	19	0	27	13	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	469	0	0	341	0	0	893	929	326	896	926	451
Stage 1	-	-	-	-	-	-	372	372	-	539	539	-
Stage 2	-	-	-	-	-	-	521	557	-	357	387	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1098	-	-	1229	-	-	264	270	720	263	271	613
Stage 1	-	-	-	-	-	-	653	622	-	530	525	-
Stage 2	-	-	-	-	-	-	542	515	-	665	613	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1098	-	-	1229	-	-	240	250	720	235	251	613
Mov Cap-2 Maneuver	-	-	-	-	-	-	240	250	-	235	251	-
Stage 1	-	-	-	-	-	-	636	606	-	504	499	-
Stage 2	-	-	-	-	-	-	506	490	-	623	597	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.53			0.69			15.33			16.67		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	395	112	-	-	152	-	-	333
HCM Lane V/C Ratio	0.117	0.021	-	-	0.036	-	-	0.075
HCM Ctrl Dly (s/v)	15.3	8.3	0	-	8	0	-	16.7
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2

Intersection

Intersection Delay, s/veh 27.1

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	166	188	3	48	276	30	4	91	25	68	184	218
Future Vol, veh/h	166	188	3	48	276	30	4	91	25	68	184	218
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	0	0	0	2	2	2	0	0	0
Mvmt Flow	166	188	3	48	276	30	4	91	25	68	184	218
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	24.6	23.2	13.4	35.5
HCM LOS	C	C	B	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	46%	14%	14%
Vol Thru, %	76%	53%	78%	39%
Vol Right, %	21%	1%	8%	46%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	120	357	354	470
LT Vol	4	166	48	68
Through Vol	91	188	276	184
RT Vol	25	3	30	218
Lane Flow Rate	120	357	354	470
Geometry Grp	1	1	1	1
Degree of Util (X)	0.256	0.694	0.676	0.847
Departure Headway (Hd)	7.684	7	6.877	6.487
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	466	514	524	564
Service Time	5.766	5.067	4.944	4.487
HCM Lane V/C Ratio	0.258	0.695	0.676	0.833
HCM Control Delay, s/veh	13.4	24.6	23.2	35.5
HCM Lane LOS	B	C	C	E
HCM 95th-tile Q	1	5.3	5	9

Intersection

Intersection Delay, s/veh 11.7

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	104	34	134	9	37	5	76	70	0	6	165	229
Future Vol, veh/h	104	34	134	9	37	5	76	70	0	6	165	229
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	0	0	0	1	1	1	0	0	0
Mvmt Flow	104	34	134	9	37	5	76	70	0	6	165	229
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	1.5	9.3	10	12.7
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	52%	38%	18%	2%
Vol Thru, %	48%	13%	73%	41%
Vol Right, %	0%	49%	10%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	272	51	400
LT Vol	76	104	9	6
Through Vol	70	34	37	165
RT Vol	0	134	5	229
Lane Flow Rate	146	272	51	400
Geometry Grp	1	1	1	1
Degree of Util (X)	0.221	0.39	0.081	0.521
Departure Headway (Hd)	5.447	5.157	5.7	4.693
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	658	699	627	772
Service Time	3.481	3.19	3.745	2.693
HCM Lane V/C Ratio	0.222	0.389	0.081	0.518
HCM Control Delay, s/veh	10	11.5	9.3	12.7
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.8	1.9	0.3	3.1

Intersection

Intersection Delay, s/veh 7.7

Intersection LOS A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	20	20	68	149	3
Future Vol, veh/h	0	20	20	68	149	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	0	20	20	68	149	3
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	6.9	7.6	7.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	23%	0%	0%
Vol Thru, %	77%	0%	98%
Vol Right, %	0%	100%	2%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	88	20	152
LT Vol	20	0	0
Through Vol	68	0	149
RT Vol	0	20	3
Lane Flow Rate	88	20	152
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.021	0.168
Departure Headway (Hd)	4.111	3.809	3.989
Convergence, Y/N	Yes	Yes	Yes
Cap	869	945	900
Service Time	2.145	1.809	2.014
HCM Lane V/C Ratio	0.101	0.021	0.169
HCM Control Delay, s/veh	7.6	6.9	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.1	0.6

Intersection

Intersection Delay, s/veh 11.6

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	13	0	20	0	270	10	28	448	2
Future Vol, veh/h	1	0	0	13	0	20	0	270	10	28	448	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	3	3	3	0	0	0	1	1	1
Mvmt Flow	1	0	0	13	0	20	0	270	10	28	448	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.8	8.6	9.8	12.9
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	39%	6%
Vol Thru, %	96%	0%	0%	94%
Vol Right, %	4%	0%	61%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	280	1	33	478
LT Vol	0	1	13	28
Through Vol	270	0	0	448
RT Vol	10	0	20	2
Lane Flow Rate	280	1	33	478
Geometry Grp	1	1	1	1
Degree of Util (X)	0.346	0.002	0.048	0.571
Departure Headway (Hd)	4.443	5.784	5.282	4.301
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	617	677	841
Service Time	2.464	3.832	3.326	2.32
HCM Lane V/C Ratio	0.345	0.002	0.049	0.568
HCM Control Delay, s/veh	9.8	8.8	8.6	12.9
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1.6	0	0.2	3.7

Intersection

Intersection Delay, s/veh 16.7

Intersection LOS C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	273	147	44	230	304	89
Future Vol, veh/h	273	147	44	230	304	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	273	147	44	230	304	89
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	19	13.6	16.5
HCM LOS	C	B	C

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	16%	65%	0%
Vol Thru, %	84%	0%	77%
Vol Right, %	0%	35%	23%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	274	420	393
LT Vol	44	273	0
Through Vol	230	0	304
RT Vol	0	147	89
Lane Flow Rate	274	420	393
Geometry Grp	1	1	1
Degree of Util (X)	0.446	0.658	0.6
Departure Headway (Hd)	5.864	5.64	5.494
Convergence, Y/N	Yes	Yes	Yes
Cap	611	638	652
Service Time	3.933	3.696	3.556
HCM Lane V/C Ratio	0.448	0.658	0.603
HCM Control Delay, s/veh	13.6	19	16.5
HCM Lane LOS	B	C	C
HCM 95th-tile Q	2.3	4.9	4

Intersection						
Int Delay, s/veh	8.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	102	365	164	208	345
Future Vol, veh/h	83	102	365	164	208	345
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	83	102	365	164	208	345
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1208	447	0	0	529	0
Stage 1	447	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	203	614	-	-	1043	-
Stage 1	646	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	153	614	-	-	1043	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	646	-	-	-	-	-
Stage 2	349	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	46.46	0		3.5		
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	261	677	-	
HCM Lane V/C Ratio	-	-	0.708	0.199	-	
HCM Ctrl Dly (s/v)	-	-	46.5	9.3	0	
HCM Lane LOS	-	-	E	A	A	
HCM 95th %tile Q(veh)	-	-	4.8	0.7	-	

HCM Signalized Intersection Capacity Analysis

10: Spear St & Allen Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	37	236	4	22	17	105	349	7	35	315	169
Future Volume (vph)	511	37	236	4	22	17	105	349	7	35	315	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00		1.00	0.95	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730	1546	1745	1698		1745	1831		1745	1740	
Flt Permitted		0.71	1.00	0.26	1.00		0.19	1.00		0.41	1.00	
Satd. Flow (perm)		1289	1546	473	1698		350	1831		747	1740	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	511	37	236	4	22	17	105	349	7	35	315	169
RTOR Reduction (vph)	0	0	78	0	10	0	0	1	0	0	17	0
Lane Group Flow (vph)	0	548	158	4	29	0	105	355	0	35	467	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		34.1	34.1	34.1	34.1		31.1	26.4		28.7	25.2	
Effective Green, g (s)		34.1	34.1	34.1	34.1		31.1	26.4		28.7	25.2	
Actuated g/C Ratio		0.42	0.42	0.42	0.42		0.38	0.32		0.35	0.31	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		536	642	196	706		212	589		304	534	
v/s Ratio Prot					0.02		c0.03	0.19		0.00	c0.27	
v/s Ratio Perm		c0.43	0.10	0.01			0.16			0.04		
v/c Ratio		1.02	0.25	0.02	0.04		0.50	0.60		0.12	0.88	
Uniform Delay, d1		24.0	15.6	14.1	14.2		18.6	23.4		17.9	26.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		44.7	0.2	0.0	0.0		1.8	4.5		0.2	17.9	
Delay (s)		68.6	15.8	14.2	14.3		20.4	27.9		18.1	44.8	
Level of Service		E	B	B	B		C	C		B	D	
Approach Delay (s/veh)		52.7			14.2			26.2			43.0	
Approach LOS		D			B			C			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			42.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			82.0				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			84.6%				ICU Level of Service			E		
Analysis Period (min)			15									

c Critical Lane Group

Intersection

Int Delay, s/veh 1.6

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 49 3 4 63 149 78

Future Vol, veh/h 49 3 4 63 149 78

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 49 3 4 63 149 78

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 259 188 227 0 - 0

Stage 1 188 - - - - -

Stage 2 71 - - - - -

Critical Hdwy 6.4 6.2 4.1 - - -

Critical Hdwy Stg 1 5.4 - - - - -

Critical Hdwy Stg 2 5.4 - - - - -

Follow-up Hdwy 3.5 3.3 2.2 - - -

Pot Cap-1 Maneuver 734 859 1353 - - -

Stage 1 849 - - - - -

Stage 2 957 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 732 859 1353 - - -

Mov Cap-2 Maneuver 732 - - - - -

Stage 1 846 - - - - -

Stage 2 957 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 10.25 0.46 0

HCM LOS B

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 107 - 738 - -

HCM Lane V/C Ratio 0.003 - 0.07 - -

HCM Ctrl Dly (s/v) 7.7 0 10.2 - -

HCM Lane LOS A A B - -

HCM 95th %tile Q(veh) 0 - 0.2 - -

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	18	19	4	3	8
Future Vol, veh/h	13	18	19	4	3	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	18	19	4	3	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	23	0	0 65 21
Stage 1	-	-	- 21 -
Stage 2	-	-	- 44 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1605	-	- 946 1062
Stage 1	-	-	- 1007 -
Stage 2	-	-	- 984 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1605	-	- 938 1062
Mov Cap-2 Maneuver	-	-	- 938 -
Stage 1	-	-	- 999 -
Stage 2	-	-	- 984 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.04	0	8.55
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	755	-	-	-	1025
HCM Lane V/C Ratio	0.008	-	-	-	0.011
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM Signalized Intersection Capacity Analysis

15: US-7 & Harbor Rd/Falls Rd

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	103	68	7	143	168	33	594	9	189	615	57
Future Volume (vph)	46	103	68	7	143	168	33	594	9	189	615	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.99			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1675			1814	1497	1631	1713		1646	1706	
Flt Permitted		0.99			1.00	1.00	0.11	1.00		0.13	1.00	
Satd. Flow (perm)		1675			1814	1497	189	1713		217	1706	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	46	103	68	7	143	168	33	594	9	189	615	57
RTOR Reduction (vph)	0	15	0	0	0	133	0	1	0	0	2	0
Lane Group Flow (vph)	0	202	0	0	150	35	33	602	0	189	670	0
Confl. Peds. (#/hr)	10		2	2		10	2					2
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	7%	7%	7%	6%	6%	6%
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases						8	2			6		
Actuated Green, G (s)		15.6			11.2	22.8	40.9	36.3		53.9	43.3	
Effective Green, g (s)		15.6			11.2	22.8	40.9	36.3		53.9	43.3	
Actuated g/C Ratio		0.14			0.10	0.21	0.38	0.34		0.50	0.40	
Clearance Time (s)		6.0			6.0	8.0	8.0	6.0		8.0	6.0	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		241			187	315	132	575		261	683	
v/s Ratio Prot		c0.12			c0.08	0.01	0.01	0.35		c0.08	c0.39	
v/s Ratio Perm						0.01	0.08			0.28		
v/c Ratio		0.84			0.80	0.11	0.25	1.05		0.72	0.98	
Uniform Delay, d1		45.0			47.4	34.5	46.7	35.9		39.1	32.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		21.5			20.3	0.1	0.4	50.6		8.2	30.0	
Delay (s)		66.5			67.7	34.5	47.1	86.5		47.2	61.9	
Level of Service		E			E	C	D	F		D	E	
Approach Delay (s/veh)		66.5			50.2			84.4			58.7	
Approach LOS		E			D			F			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)		66.3			HCM 2000 Level of Service					E		
HCM 2000 Volume to Capacity ratio		0.91										
Actuated Cycle Length (s)		108.1			Sum of lost time (s)					32.0		
Intersection Capacity Utilization		84.6%			ICU Level of Service					E		
Analysis Period (min)		15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

16: US-7 & Bostwick Rd/Marsett St

09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	63	8	203	56	22	4	547	174	24	618	48
Future Volume (vph)	66	63	8	203	56	22	4	547	174	24	618	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.99			0.97			0.99	
Flt Protected	0.95	1.00			0.97			1.00			1.00	
Satd. Flow (prot)	1745	1806			1754			1692			1730	
Flt Permitted	0.64	1.00			0.74			1.00			0.97	
Satd. Flow (perm)	1180	1806			1347			1687			1673	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	66	63	8	203	56	22	4	547	174	24	618	48
RTOR Reduction (vph)	0	6	0	0	5	0	0	16	0	0	4	0
Lane Group Flow (vph)	66	65	0	0	276	0	0	709	0	0	686	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.7	16.7			16.7			35.1			35.1	
Effective Green, g (s)	16.7	16.7			16.7			35.1			35.1	
Actuated g/C Ratio	0.26	0.26			0.26			0.55			0.55	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	308	472			352			928			920	
v/s Ratio Prot		0.04										
v/s Ratio Perm	0.06				c0.20			c0.42			0.41	
v/c Ratio	0.21	0.14			0.78			0.76			0.75	
Uniform Delay, d1	18.4	18.0			21.9			11.1			10.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	0.1			10.9			5.9			5.5	
Delay (s)	18.8	18.2			32.7			17.1			16.4	
Level of Service	B	B			C			B			B	
Approach Delay (s/veh)		18.5			32.7			17.1			16.4	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			19.3									
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			63.8									
Intersection Capacity Utilization			84.5%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	140	390	124	84	203
Future Vol, veh/h	66	140	390	124	84	203
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	140	390	124	84	203
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	11.1	17.7	12
HCM LOS	B	C	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	32%	29%
Vol Thru, %	76%	0%	71%
Vol Right, %	24%	68%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	514	206	287
LT Vol	0	66	84
Through Vol	390	0	203
RT Vol	124	140	0
Lane Flow Rate	514	206	287
Geometry Grp	1	1	1
Degree of Util (X)	0.687	0.315	0.418
Departure Headway (Hd)	4.814	5.508	5.248
Convergence, Y/N	Yes	Yes	Yes
Cap	756	653	686
Service Time	2.814	3.547	3.279
HCM Lane V/C Ratio	0.68	0.315	0.418
HCM Control Delay, s/veh	17.7	11.1	12
HCM Lane LOS	C	B	B
HCM 95th-tile Q	5.5	1.3	2.1

Intersection

Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	102	365	164	208	345
Future Vol, veh/h	83	102	365	164	208	345
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	83	102	365	164	208	345
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	12.3	21.7	27.5
HCM LOS	B	C	D

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	45%	38%
Vol Thru, %	69%	0%	62%
Vol Right, %	31%	55%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	529	185	553
LT Vol	0	83	208
Through Vol	365	0	345
RT Vol	164	102	0
Lane Flow Rate	529	185	553
Geometry Grp	1	1	1
Degree of Util (X)	0.748	0.321	0.815
Departure Headway (Hd)	5.09	6.245	5.308
Convergence, Y/N	Yes	Yes	Yes
Cap	709	574	680
Service Time	3.134	4.306	3.352
HCM Lane V/C Ratio	0.746	0.322	0.813
HCM Control Delay, s/veh	21.7	12.3	27.5
HCM Lane LOS	C	B	D
HCM 95th-tile Q	6.8	1.4	8.5

TURN LANE WARRANT ANALYSIS

PROJECT: Triangle Farm PUD
LOCATION: Irish Hill Road & Site Access
Shelburne VT

BY: CDM
DATE: 17-Sep-25
SCENARIO: 2032 AM Build

Source: Kikuchi and Chakroborty's "Modified Harmelink/AASHTO Model"
from Method for Prioritizing Intersection Improvements, Washington State
Transportation Center Research Report, January 1997

YEAR: 2032
TIME: AM Build
SPEED: mph

Exclusive right-turn lane in the Va direction (Y/N)?

Exclusive left-turn lane in the Vo direction (Y/N)?

AVERAGE HOUR ENTERING TRAFFIC VOLUMES (vph, 85% of DHV):

	Vadv.	Vopp.	
Left-Turn =	15	5	Left turn volume increased above minimum threshold to illustrate warranting volume
Thru =	235	323	
Right-Turn =	3	9	

Va = 253 vph

L = 5.9%

Vo = 337 vph

Left Turn Lane Warrant

$$Va = \exp(6.9017 - 0.001151 * Vo + (\exp(0.383 - 0.118 * L) - 0.01816 * SP)) \quad (\text{Eq. 3.3})$$

Warranting Va = 676 vph

Va = 253 < 676

THEREFORE, WB LEFT-TURN LANE NOT WARRANTED

Right Turn Lane Warrant

PEAK HOUR ENTERING TRAFFIC VOLUMES (vph, 100% of DHV):

Left-Turn =	14	6
Thru =	276	380
Right-Turn =	4	10

Va = 396 vph

R = 2.6%

$$Va = 33 \times \text{squareroot} \left(\frac{(80-S)}{(R \times (1-R))} \right)$$

Warranting Va = 1304 vph

Va = 396 < 1,304

THEREFORE, EB RIGHT-TURN LANE NOT WARRANTED

TURN LANE WARRANT ANALYSIS

PROJECT: Triangle Farm PUD
LOCATION: Irish Hill Road & Site Access
Shelburne VT

BY: CDM
DATE: 17-Sep-25
SCENARIO: 2032 PM Build

Source: Kikuchi and Chakroborty's "Modified Harmelink/AASHTO Model"
from Method for Prioritizing Intersection Improvements, Washington State
Transportation Center Research Report, January 1997

YEAR: 2032
TIME: PM Build
SPEED: mph

Exclusive right-turn lane in the Va direction (Y/N)?

Exclusive left-turn lane in the Vo direction (Y/N)?

AVERAGE HOUR ENTERING TRAFFIC VOLUMES (vph, 85% of DHV):

	Vadv.	Vopp.
Left-Turn =	37	20
Thru =	368	264
Right-Turn =	31	26

Va = 436 vph

L = 8.6%

Vo = 309 vph

Left Turn Lane Warrant

$$Va = \exp(6.9017 - 0.001151 * Vo + (\exp(0.383 - 0.118 * L) - 0.01816 * SP)) \quad (\text{Eq. 3.3})$$

Warranting Va = 574 vph

Va = 436 < 574

THEREFORE, WB LEFT-TURN LANE NOT WARRANTED

Right Turn Lane Warrant

PEAK HOUR ENTERING TRAFFIC VOLUMES (vph, 100% of DHV):

Left-Turn =	44	23
Thru =	433	311
Right-Turn =	36	30

Va = 364 vph

R = 9.6%

$$Va = 33 \times \text{squareroot} \left((80 - S) / (R \times (1 - R)) \right)$$

Warranting Va = 707 vph

Va = 364 < 707

THEREFORE, EB RIGHT-TURN LANE NOT WARRANTED

TURN LANE WARRANT ANALYSIS

PROJECT: Triangle Farm PUD
LOCATION: Irish Hill Road & Thompson Road
Shelburne VT

BY: CDM
DATE: 17-Sep-25
SCENARIO: 2032 PM Build

Source: Kikuchi and Chakroborty's "Modified Harmelink/AASHTO Model"
from Method for Prioritizing Intersection Improvements, Washington State
Transportation Center Research Report, January 1997

YEAR: 2032
TIME: PM Build
SPEED: mph

Exclusive right-turn lane in the Va direction (Y/N)?

Exclusive left-turn lane in the Vo direction (Y/N)?

AVERAGE HOUR ENTERING TRAFFIC VOLUMES (vph, 85% of DHV):

	Vadv.	Vopp.
Left-Turn =	20	37
Thru =	264	368
Right-Turn =	26	31

Va = 309 vph

L = 6.3%

Vo = 436 vph

Left Turn Lane Warrant

$$Va = \exp(6.9017 - 0.001151 * Vo + (\exp(0.383 - 0.118 * L) - 0.01816 * SP)) \quad (\text{Eq. 3.3})$$

Warranting Va = 584 vph

Va = 309 < 584

THEREFORE, EB LEFT-TURN LANE NOT WARRANTED

Right Turn Lane Warrant

PEAK HOUR ENTERING TRAFFIC VOLUMES (vph, 100% of DHV):

Left-Turn =	23	44
Thru =	311	433
Right-Turn =	30	36

Va = 513 vph

R = 8.3%

$$Va = 33 \times \text{squareroot} \left((80 - S) / (R \times (1 - R)) \right)$$

Warranting Va = 756 vph

Va = 513 < 756

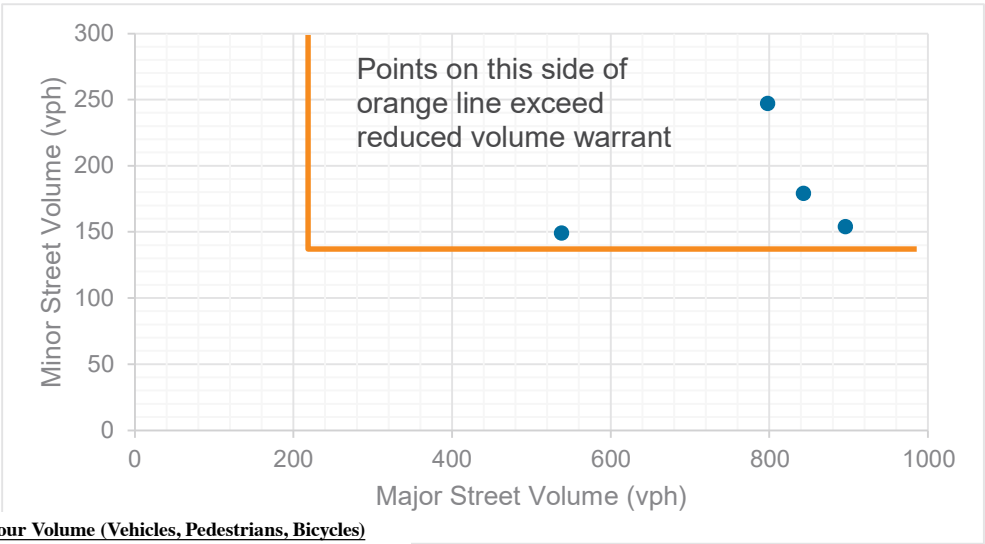
THEREFORE, WB RIGHT-TURN LANE NOT WARRANTED

AWSC warrant per MUTCD Section 2B.16 (reprinted below).

Volumes from unadjusted existing conditions count at Spear & Barstow 5/29/2025 (refer to Attachment A)

					2032 Build, TWSC			2032 Build, AWSC		
					Major Street Delay (s)	Avg Minor Street Delay (s)	Total Delay (s)	Avg Major Street Delay (s)	Avg Minor Street Delay (s)	Total Delay (s)
	Major Street	Minor Street								
7:00 AM	538	149								
8:00 AM	798	247			732	19	5,348	15	15	15,362
4:00 PM	896	154			1936	46	9,090	23	23	24,045
5:00 PM	843	179								

Threshold (Standard)	300	200	
Threshold (Reduced, >40 MPH)	210	140	70% reduction



Section 2B.16 All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles)

- Option:
- 01 All-way stop control may be installed at an intersection where an engineering study indicates:
 - A. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the major-street approaches is at least 300 units per hour for each of any 8 hours of a typical day; and
 - B. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the minor-street approaches is at least 200 units per hour for each of any of the same 8 hours.
 - 02 If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants may be reduced to 70 percent of the values given in Items A and B in Paragraph 1 of this Section.



Date: 17 September 2025

To: Andrew Gill, Director of Development, O'Brien Brothers

From: Corey Mack, PE, PTOE, Consultant Transportation Engineer

Subject: Triangle Farm TIS – Initial Response to Bicycle and Pedestrian Path Committee (BPPC) Comments dated 2 September 2025

WCG has received and reviewed the comments submitted by the Town of Shelburne Bicycle and Pedestrian Paths Committee (BPPC) dated 2 September 2025. This memorandum documents an initial response to the comments.

BICYCLE AND PEDESTRIAN PATHS COMMITTEE COMMENTS SUMMARY

The Shelburne Bicycle and Pedestrian Paths Committee (BPPC) submitted comments related to requested trail, path, and bike lane infrastructure adjacent to the site, including:

- A shared use path along the length of Thomas Road between Irish Hill Road and Spear Street,
- Bike lanes and/or a shared use path along Spear Street between Irish Hill Road and Thomas Road, and
- An improvement and extension of the existing path along Irish Hill Road past Thompson Road to Spear Street.

The requested alignments summarized above are in addition to the infrastructure to be constructed within and through the site consistent with the development agreement under Q.1.e., as referenced in the BPPC comments.

INITIAL RESPONSE

The BPPC-requested alignments for shared use path infrastructure include challenging elements that a private entity has limited means to address. All three BPPC-requested shared use path alignments include significant portions outside of the project frontage and are likely to include impacts to private rights of way and elements such as mature landscaping and trees, wetlands, steep slopes, stone walls, utility poles, and other features beyond the control of the applicant.

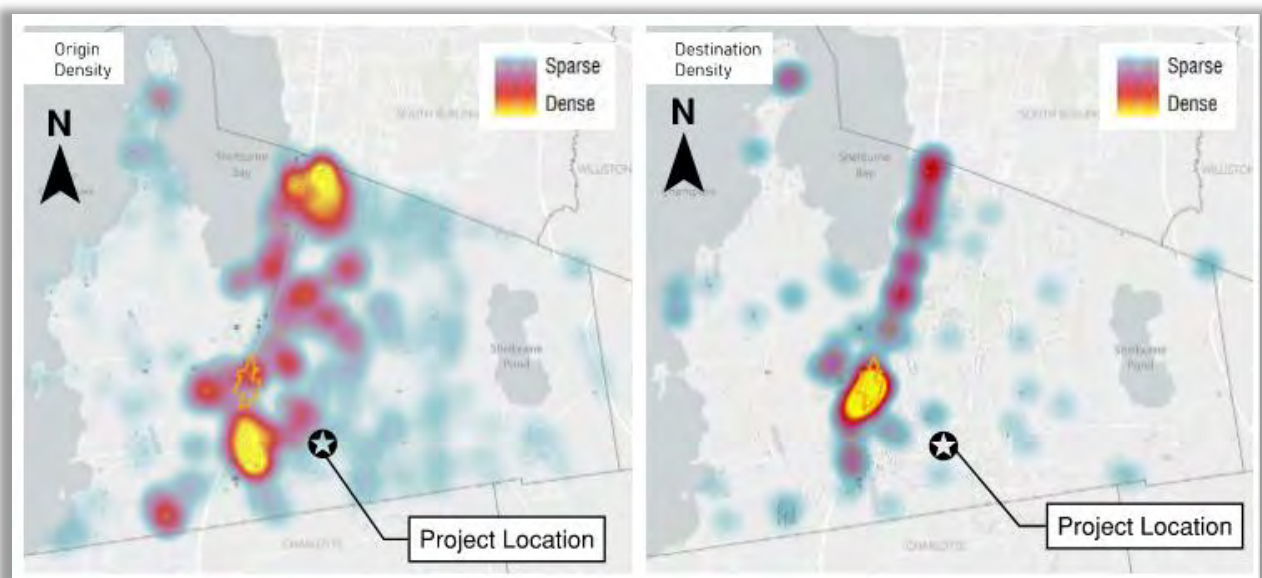
The 2022 Town of Shelburne Walk and Bike Connectivity Study¹ identified and prioritized community-supported bicycle and pedestrian infrastructure projects for implementation. The

¹ https://studiesandreports.ccrpcvt.org/wp-content/uploads/2022/09/20220927_ShelburneBikePedConnectivityFINAL.pdf

projects addressed specific concerns and deficiencies related to walking and bicycling in town. Outside of bike lanes along Irish Hill Road,² the BPPC-requested alignments are not identified in the Connectivity Study or any other previous known Town bicycle and pedestrian planning efforts. While it is important to improve network connectivity when possible, it is not clear what need the requested alignments would serve.

The Connectivity Study also included maps of bicycle and pedestrian origins and destinations (Figure 1). The Triangle Farm PUD project is proposing a robust network of paths, walks, and trails within the site, including connection into the existing sidewalk network. The Triangle Farm PUD project's proposed network would provide access from the site to the high concentration of bicycle and pedestrian origins and destinations in the Town to the north and west.

FIGURE 1: EXCERPT FROM SHELBURNE BICYCLE AND PEDESTRIAN CONNECTIVITY STUDY ILLUSTRATING BICYCLE AND PEDESTRIAN ORIGIN AND DESTINATIONS (WITH WCG MARKUP)



The BPPC-requested alignments would not serve as a critical link connecting the proposed site to the existing Village Center and its dense node of origins and destinations; the Triangle Farm PUD project's proposed improvements serve that need. These requested alignments are best pursued via town and regional planning efforts, undergoing public planning, prioritization, and funding processes like the Connectivity Study. This approach would be consistent with the implementation of paths at the Kwiniaska Ridge and Boulder Hill communities: these PUDs developed path networks internal to the site and along adjacent roadway frontages, and the

² Page 26, project b4, second tier, rank number 17: "On the southern portion of town, bike lanes are proposed along Irish Hill Road, Falls Road, Marsett Road, and Bostwick Road, a corridor that would span about four and a half miles... may need further study, some elements may be implementable"

path connection from US-7 to Spear Street along Webster Road was constructed following a bond vote in 2008.

To meet the Town of Shelburne's existing community-supported bicycle and pedestrian needs, we recommend the Town:

- Continue to develop and maintain the bicycle and pedestrian priority project list in the Connectivity Study; the BPPC-requested shared use path alignments along Thomas Road, Spear Street, and Irish Hill Road should be evaluated in the context of that list and prioritized accordingly.
- Consider funding mechanisms to construct the priority projects, either through bond votes, grant opportunities, and/or developing a recreation or path impact fee, similar to fees in place in South Burlington, Burlington, and Williston.
- Request the applicant to construct features within their control and/or dedicate rights of way for future facilities.

INITIAL RESPONSE CONCLUSION

The proposed Triangle Farm PUD project includes a robust network of paths, walks, and trails within the site, including connection into the existing sidewalk network. The project's proposed network would provide access to the high concentration of bicycle and pedestrian origins and destinations in the Town to the north and west. Implementing the BPPC-requested alignments are beyond the control of the project, and do not appear to serve any demand to or through the project.