

TRANSPORTATION IMPACT STUDY UPDATE

806 KILLALY STREET EAST

**CITY OF PORT COLBORNE
REGION OF NIAGARA**

PREPARED FOR:

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MARCH 2026

CFCA FILE NO. 2578-6905

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Revision Number	Date	Comments
Rev.0	December 2023	Issued for Submission
Rev.1	March 2026	Issued for Second Submission

Executive Summary

C.F. Crozier & Associates Inc. prepared a Transportation Impact Study to support the Zoning By-law and Official Plan Amendment applications for a proposed mixed-use development at 806 Killaly Street East in Port Colborne. The conceptual demonstration plan dated January 29, 2026 includes 1,258 single-detached homes, 383 townhouses, 362 back-to-back townhouses, approximately 10,000 sq. ft. of commercial space north of Killaly Street, approximately 700,000 sq. ft. of commercial space north of Main Street and an elementary school. We note that the proposed Zoning By-law permits a maximum of 300,000 sq. ft; a higher GFA was used as part of this analysis and is therefore very conservative. The original Transportation Impact Study dated December 2023 evaluated only the residential lands. As part of the current application, an additional ~35 acres was incorporated into the concept plan, resulting in a higher overall development yield and correspondingly higher traffic generation than previously assessed.

This study evaluates existing, future background, and future total traffic conditions for 2031, 2036, and 2041, including full build-out of residential and commercial lands. Future phase-specific impacts will be assessed in later applications and will include a more realistic phased-in approach to trip generation whereas the current report is more conservative and incorporates 100% build-out at year 2031.

Existing Conditions

The current road network generally operates at LOS C or better. Only one movement, the eastbound left turn at Highway 140/Elizabeth Street and Main Street East operates at LOS D in the PM peak hour, but still within capacity. The 95th percentile queues are not expected to exceed the available storage.

Future Background Conditions (without development)

- 2031: The study intersections are expected to continue operating acceptably, with the eastbound left-turn at Highway 140/Elizabeth Street and Main Street East projected to operate at LOS D during the weekday PM peak hour. Queues are anticipated to remain within storage capacity
- 2036: The eastbound left-turn movement identified above is expected to deteriorate further, reaching LOS E during the weekday PM peak hour. However, the 95th percentile queues are anticipated to remain within capacity.
- 2041: The LOS for the eastbound left-turn discussed above is expected to worsen to F during the weekday PM peak hour, with an increase in delays. The 95th percentile queues for this movement are anticipated to remain at or below the storage limit. Improvements are expected to be addressed through broader area planning.

Site Trip Generation

Full build-out of the site is projected to generate the following number of net trips:

- 1,909 weekday AM peak trips (745 inbound and 1,164 outbound)
- 2,185 weekday PM peak trips (1,227 inbound, 958 outbound)
- 2,732 Saturday peak trips (1,401 inbound, 1,331 outbound)

Residential, commercial, and school components contribute separately, with commercial trips forming the largest share, particularly on Saturdays. Commercial trip generation, estimated at approximately 60% of total trips, represents a conservative assumption made early in the planning process and will be revised as part of future planning submissions. It is understood that total trip generation rates and therefore recommended improvements will change as future applications are made.

Highway 3 Access Sensitivity

Sensitivity analysis indicates that the Snider Road connection alone would not be sufficient to accommodate site traffic. Therefore, a secondary access (Street C) to Main Street East is required and it is proposed to operate as a left-in/right-in/right-out access. The intersection of Main Street East and Snider Road meets signal warrants and is recommended to be signalized to support the projected traffic volumes

Future Total Conditions Internal Intersection Operations

Internal street intersections within the subject site are expected to operate satisfactorily under stop control on the minor approaches with acceptable delay and under capacity in all future scenarios. It is also noted that internal intersections will also be further reviewed as part of future Draft Plan of Subdivision and Site Plan applications to confirm the recommended internal traffic control measures.

Future Total Conditions External Intersection Operations

Under 2031 Future Total conditions without improvements, congestion is forecast at the intersections of Highway 140 / Elizabeth Street and Main Street East and Killaly Street East / Elizabeth Street. In particular, the southbound left-turn at Highway 140 / Elizabeth Street and Main Street East is expected to operate at LOS F with significant delays and queues exceeding the available storage. The shared southbound movements at Killaly Street East / Elizabeth Street are also expected to operate near capacity during the weekday AM peak hour.

To address these conditions, several improvements are recommended, assuming full build-out under a conservative commercial development scenario. These include implementing dual southbound protected left-turn lanes and an exclusive northbound right-turn lane at Highway 140 / Elizabeth Street and Main Street East, signal timing adjustments, additional storage for key turning movements, signalization of the Main Street East / Snider Road intersection with appropriate turning lanes, and the installation of all-way stop control at Killaly Street East / Elizabeth Street.

It should be noted that initial phases of the development, as currently planned, may not require the upgrades outlined above. Any required upgrades will be identified on a phase-by-phase basis through respective future traffic studies completed in support of Draft Plan of Subdivision and/or site plan applications.

With these improvements in place, intersection operations are expected to return to acceptable levels in 2031 and remain generally stable through the 2036 and 2041 planning horizons. While minor increases in delays are anticipated due to background traffic growth, most movements are expected to operate within capacity. By 2041, however, increased queue lengths are forecast at Highway 140 / Elizabeth Street and Main Street East, and it is recommended that eastbound left-turn and southbound left-turn storage lengths be extended to approximately 160 m to accommodate the projected 95th percentile queues.

Intersection Spacing Review

The proposed public road intersections generally meet TAC GDGCR (2017) spacing guidelines, with the exception of Street G relative to Killaly Street East. As no significant left-turn queues are anticipated and no additional storage is required, the Killaly Street East / Street G intersection is considered supportable.

The proposed Street C access on Main Street East does not meet MTO spacing requirements for a Class 2B Arterial Highway. However, sensitivity analysis indicates that a secondary access to Main Street East is necessary to accommodate projected traffic volumes. As such, the Street C access is recommended, and the proposed auxiliary lanes between Street C and Snider Road are not expected to create operational or spacing concerns

Other Findings

- The parking requirements are expected to be meet the City of Port Colborne Requirements:
- The subject site is located within an area identified in the draft Active Transportation Master Plan (ATMP) for future cycling and walking corridors, including Killaly Street East as an east–west cycling route and Elizabeth Street as a north–south bicycle boulevard. The development will align with these planned corridors and integrate sidewalks, cycling connections, and appropriate road rights-of-way through the proposed collector and local road network.

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1.0 Introduction

Elite Cap Inds Holdings., Elite Cap PC Holdings Inc., Elite P.C.M. Holdings Inc., Elite P.C.V. Holdings Inc., 705 Main P.C. Holdings Inc., Elite Capital P.C. Developments Inc., and Elite 869 Killaly Holdings Inc. retained C.F. Crozier & Associates Inc. (Crozier) to complete a Transportation Impact Study to support a Zoning By-Law Amendment and Official Plan Amendment applications for the proposed mixed-use residential development located at 806 Killaly Street in the City of Port Colborne, Niagara Region.

1.1 Development Lands

The proposed development currently consists of vacant lands and is generally bounded by Main Street East (Highway 3) to the north, Lorraine Road to the east, Killaly Street East to the south, and Elizabeth Street to the west. However, it is noted that an additional parcel is located southeast of the intersection of Killaly Street East and Snider Road.

Figure 1 includes the site location and area bounded by the proposed mixed-use development.

1.2 Development Proposal

Per the conceptual demonstration plan prepared by Armstrong Planning and Project Management dated January 29, 2026, the proposed development consists of mixed uses outlined in **Table 1**:

Table 1: Site Statistics

Land Use	Units/GFA
Single Detached Units	1,258
Townhouse Units	383
Back-to-Back Townhouse Units	362
Commercial Area (South-east of Elizabeth Street & Killaly Street East)	10,000 ft ²
Commercial Area (North of Main Street East)	700,000 ft ²
Elementary School	25,000 ft ²

Note: The commercial and elementary school GFA are subject to change through further detailed design, the GFAs utilized in this study is approximate.

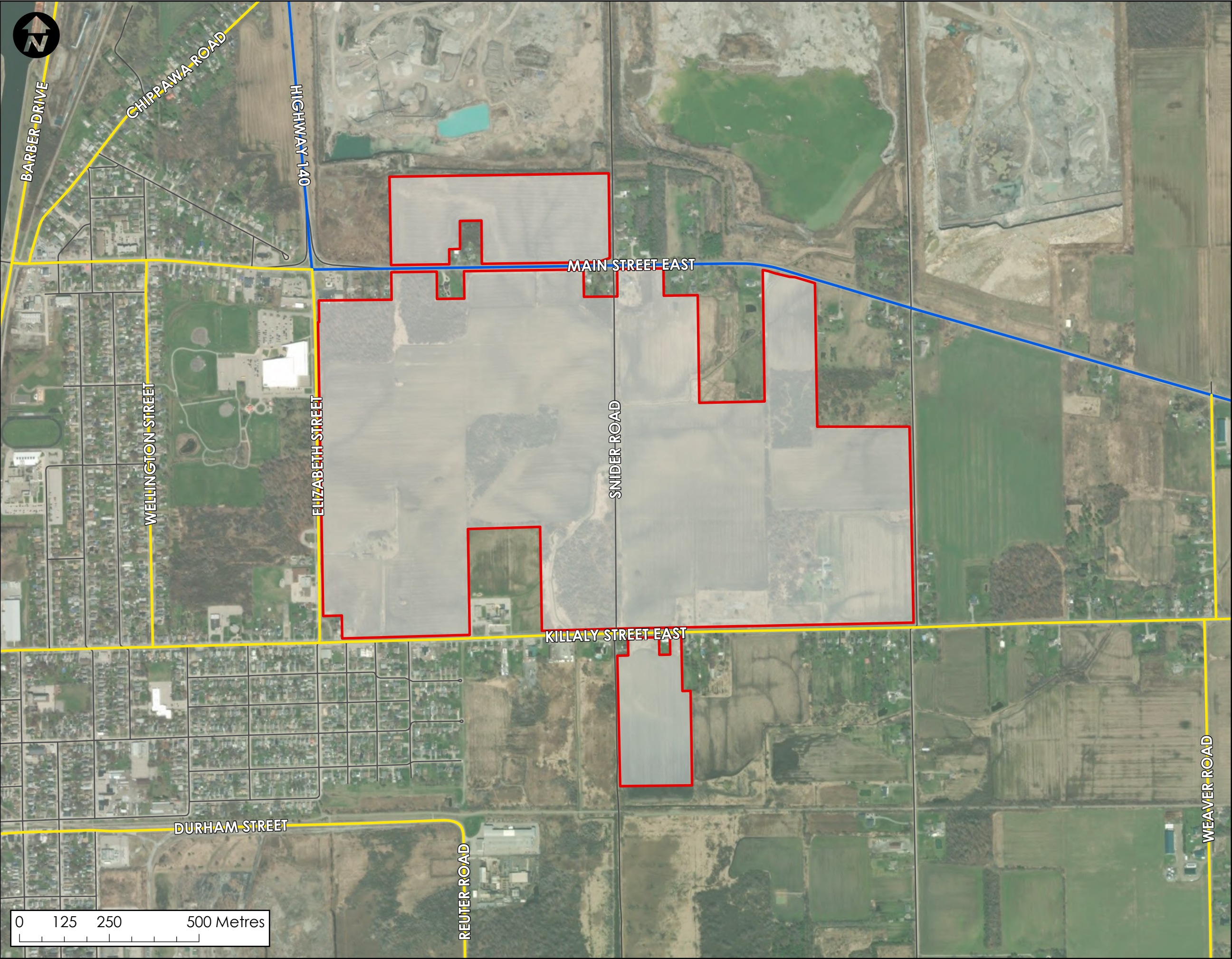
It is noted that Snider Road is identified as having an existing right-of-way allowance traversing the subject property, however, the existing segment is currently constructed as a gravel/dirt road. As part of the proposed development, a portion of Snider Road extending south of Main Street East (Highway 3) will be maintained and is planned to be connected to Street A. However, Snider Road north of Killaly Street East is subject to environmental constraints; therefore, a Street E connection will be provided instead to connect to Street A. Furthermore, it should be noted that multiple accesses are currently shown via Killaly Street, Elizabeth Road, Lorraine Road, Main Street (Highway 3), and Snider Road. These accesses have not been assessed within this report and would be reviewed as part of future applications for the development.

Lastly, the development is anticipated to proceed in phases; however, the specific timing and sequencing have not yet been determined. Accordingly, the analysis presented herein assesses the full build-out scenario only, with detailed phase-specific evaluations to be completed through future planning applications.

The commercial gross floor area (GFA) of 700,000 square feet used to estimate traffic demand represents a high-end development scenario based on the site's size. The ultimate build-out is more reasonably anticipated to be approximately 300,000 square feet. As such, updated Transportation

Impact Studies will be submitted with future applications to confirm any required improvements, particularly those associated with the commercial component.

Figure 2 outlines the current conceptual demonstration plan for the purposes of this application dated January 29, 2026.



KEY PLAN

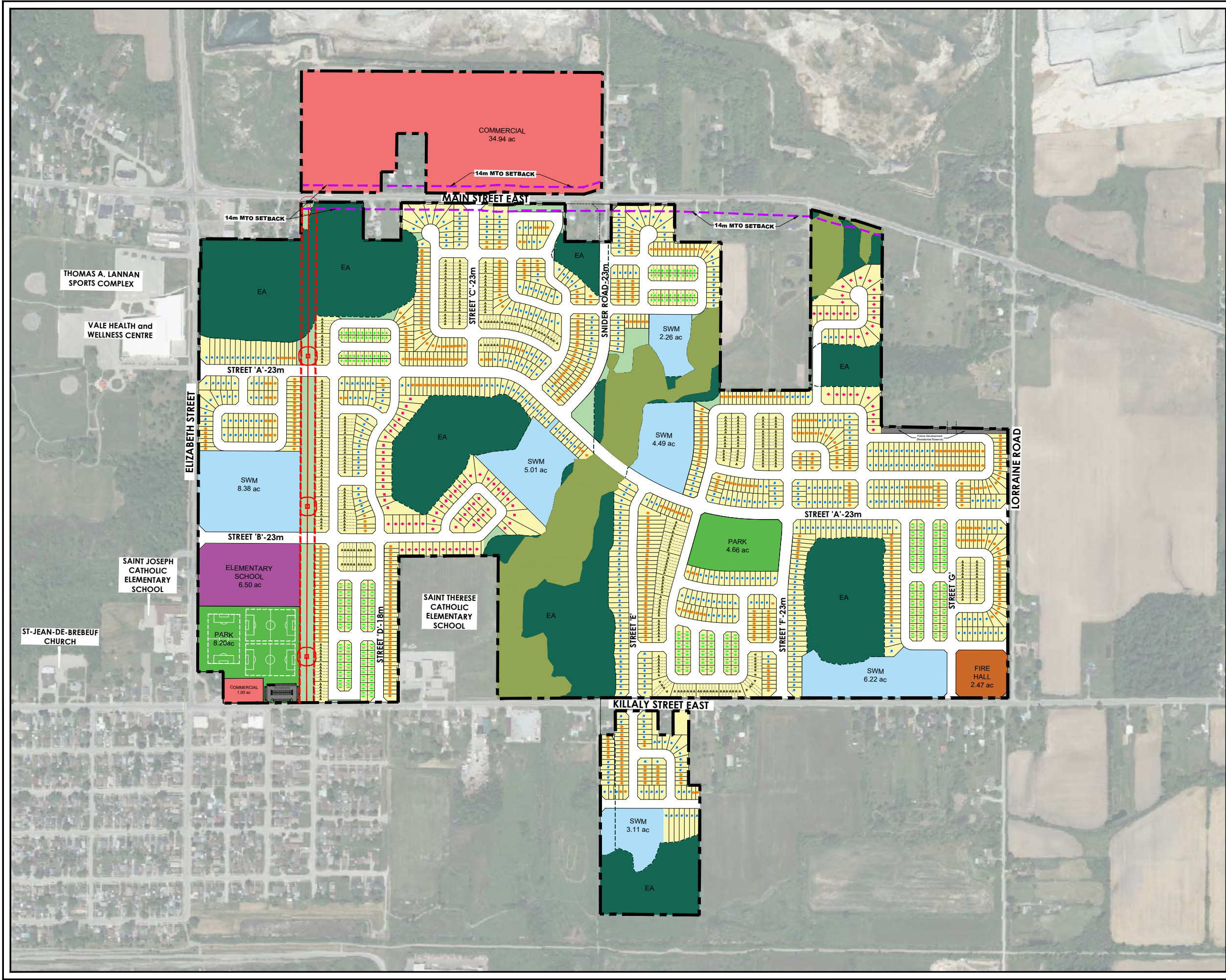
LEGEND

- SITE BOUNDARY
- EXISTING ROAD (NIAGARA, 2025)**
- LOCAL / COLLECTOR
- HIGHWAY
- ARTERIAL

806 KILLALY STREET EAST

FIGURE 1 - SITE LOCATION





LEGEND

Study Area

14m MTO Setback

Hydro One Easement

Hydro Tower and 15m Buffer

TOTAL LAND AREA: 158.240 hectares (391.018 acres)

LAND USE	AREA	
	(HA)	(AC)
RESIDENTIAL	55.176	136.343
FUTURE DEVELOPMENT (RESIDENTIAL RESERVE)	0.303	0.749
COMMERCIAL	14.547	35.946
ELEMENTARY SCHOOL	2.634	6.509
FIRE HALL	1.001	2.474
STORMWATER MANAGEMENT POND	11.937	29.496
PARK	5.208	12.869
OPEN SPACE	3.447	8.518
ENVIRONMENTAL PROTECTION AREA (EPA)	26.633	65.812
ENVIRONMENTAL PROTECTION AREA (FLOODPLAIN)	9.173	22.668
COLLECTOR ROADS	7.165	17.705
LOCAL ROADS	21.015	51.929
TOTAL	158.240	391.018

ESTIMATED UNIT COUNT			
	PRODUCT	TOTAL	%
◆	6.5m (21') BACK-to-BACK TOWNS	362	18%
▲	6.1m (20') TOWNS	383	19%
●	8.2m (27') SINGLES	622	31%
✱	10.4m (34') SINGLES	538	27%
◆	13.7m (45') SINGLES	98	5%
	TOTAL	2003	100.0%

DEMONSTRATION PLAN

CITY of PORT COLBORNE



armstrong

planning | project management

DESIGN:	DRAWN:	SCALE	N.T.S.
APPROVED	DATE:	PROJECT No.	25.3600
JANUARY 29, 2026			
DRAWING No.			

1.3 Study Purpose and Scope

The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the study road network and to recommend or confirm any required mitigation measures, if warranted.

The study reviews the following main aspects of the proposed development from a transportation engineering perspective:

- Impacts of the development traffic on the study road network through analyzing existing, future background, and future total traffic operations;
- The need for any external roadway improvements to mitigate traffic impacts;
- Adequacy of internal intersections;
- Parking Review per the City of Port Colborne's Zoning By-Law

The study has been completed in accordance with the Niagara Region's Transportation Impact Assessment Guidelines July 2023 and MTO's Traffic Impact Studies Guidelines March 2023, as well as the approved Terms of Reference.

Appendix A includes the Terms of Reference for the study, which was confirmed with Niagara Region staff through correspondence. It is noted that the Ministry of Transportation Ontario (MTO) is also aware of the development but could not provide a Terms of Reference at this time.

As confirmed in the Terms of Reference, this Transportation Impact Study considers the following study intersections:

- Highway 140/Elizabeth Street and Main Street East (Highway 3)
- Main Street East (Highway 3) and Snider Road
- Main Street East (Highway 3) and Lorraine Road/Babion Road
- Killaly Street and Lorraine Road
- Killaly Street and Elizabeth Road

Furthermore, the site accesses for the development onto the boundary roads as well as internal road network has been reviewed. The study intersections are as follows:

- Elizabeth St at Street A
- Elizabeth Street at Street B
- Elizabeth Street at Elementary School Access
- Killaly St. E at Commercial Access
- Killaly St. E at Street D
- Killaly St. E at Street F
- Killaly St. E at Street G
- Killaly St. E at Street E
- Lorraine Road at South Site Access
- Lorraine Street at Street A
- Main Street at Street C/Commercial Access
- Snider Road at Street A
- Street A at Street E
- Street A at Street C
- Street A at Street D
- Street A at Street F
- Street A at Street G
- Street B at Street D

Assumptions for this study are based on a revised concept plan that incorporates the original site (that proposed a primarily residential community) as well as an additional 35 acres (+/-) of lands north of Main Street E, proposed as a commercial plaza. The assumption for this plaza was that a maximum of 700,000sqft could be incorporated on site. This is a very conservative estimate and, in our experience represents a density not likely to be achieved on the site. A more realistic build-out would be 300-350,000 sqft.

For the purposes of this study, it has been assumed that the entire development will be built out by 2031. The MTO's guidelines require analysis of the full build-out horizon and the five- and ten-year horizons from the estimated year of full build-out. Therefore, the 2031, 2036 and 2041 horizon years were analyzed. This is a very conservative approach and does not reflect the actual planned build-out which will be done over many years.

2.0 Existing Conditions

This section outlines the current conditions of the transportation network in the vicinity of the proposed development. Details of the study road network, including traffic controls, lane configurations, speed limits, transit routes and stops, active transportation infrastructure and other relevant transportation elements are identified. The existing traffic operations are also summarized.

2.1 Study Road Network

The study road network consists of the existing road network near the subject site that is considered within this study, which includes the study intersections, and the adjoining roadway segments. **Table 2** delineates the study roadways.

It is also noted that the City of Port Colborne currently does not have any fixed transit routes and existing residents rely mostly on the use of automobiles for transportation. However, on January 3, 2022, Niagara Region and City of Port Colborne launched Niagara Region Transit OnDemand transit service in the City of Port Colborne, which does provide residents an alternative to private automobile use.

This transit service caters to the entirety of Port Colborne, addressing transportation needs across the City/Region, particularly benefiting residents without access to a private automobile in smaller, rural communities, which would typically have no transit options available.

The transit service operates Monday to Saturday between 7 a.m. and 10 p.m. and after reserving a ride, passengers are directed to a nearby stop location within walking to distance similar to a Transportation Network Company Service such as Uber.

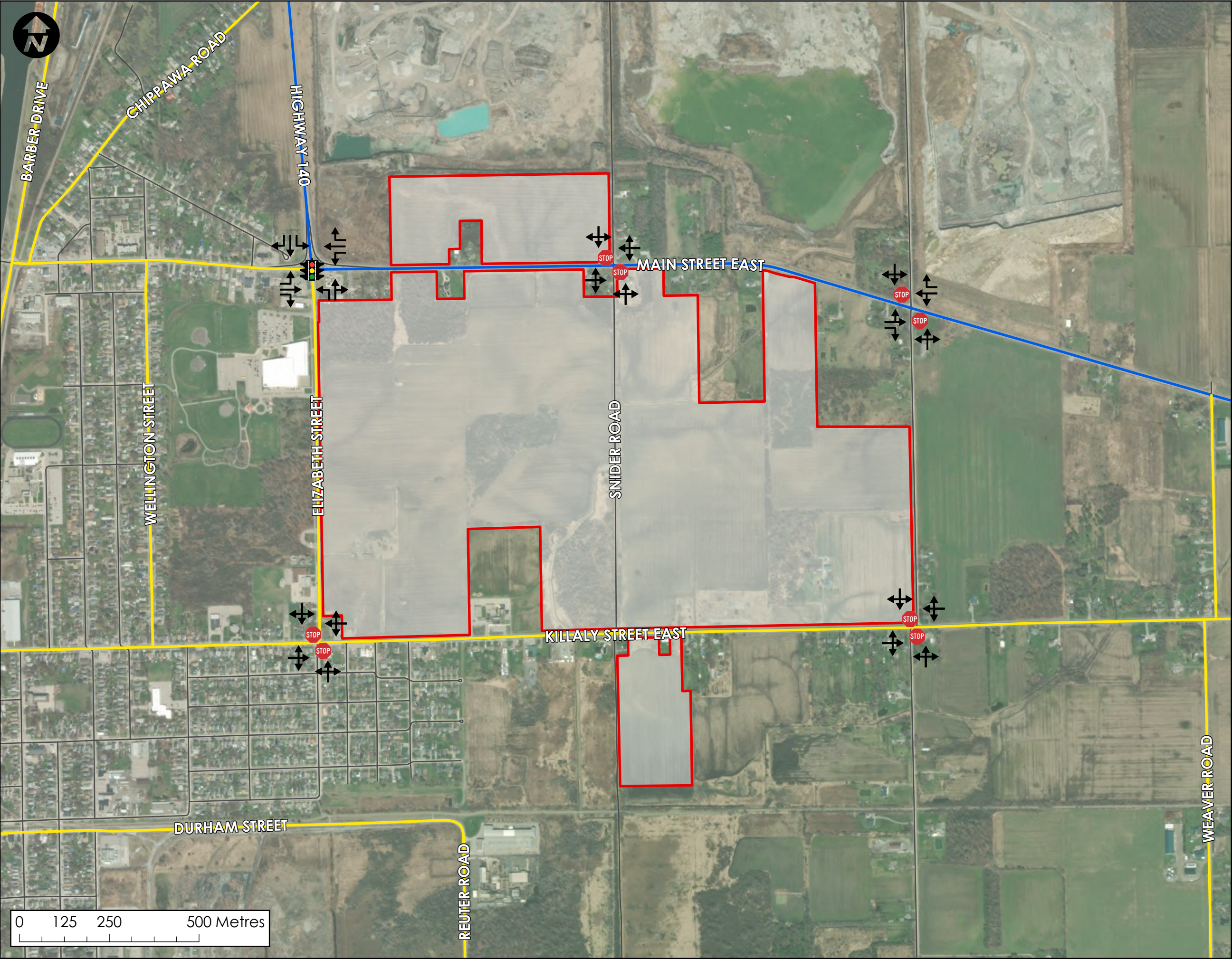
Figure 3 outlines the study road network.

Appendix B contains the City of Port Colborne's Official Plan excerpts.

Table 2: Study Roadways

Feature	Roadways				
	Elizabeth Street	Main Street East (Highway 3)	Killaly Street	Lorraine Road	Snider Road
Direction	Two-way (North-South)	Two-way (East-West)	Two-way (East-West)	Two-way (North-South)	Two-way (North-South)
Span	Main Street to Killaly Street	Elizabeth Street/Highway 140 to Lorraine Road/Babion Road	Elizabeth Street to Lorraine Road	Main Street to Killaly Street	Main Street to Killaly Street
Classification	Arterial	Arterial (Provincial)	Arterial	Local	Local (To be designated as a collector Road in future)
Jurisdiction	City of Port Colborne	MTO From East of Elizabeth Street	City of Port Colborne	City of Port Colborne	City of Port Colborne
Speed Limit	50 km/h from Main Street to Elizabeth Street Park 40 km/h from Elizabeth Street Park to Killaly Street	70 km/h from Elizabeth Street to Snider Road 80 km/h from Snider Road to Lorraine Road/Babion Road	50 km/h from Elizabeth Street to School Access 40 km/h from School Access to Snider Road 60 km/h from Snider Road to Lorraine Road	60 km/h ¹	To be determined
Number of travel lanes per direction	One	One	One	One	One
Active Transportation	~3m MUP on west side from Main Street to Elementary School and ~1.5 m sidewalk south of the elementary school	None	Sidewalk on north side up to Elizabeth Street and on south side terminating 175 m west of Snider Road	None	None

Note 1: A jurisdictional speed limit of 40 km/h is assumed on the roadways with no posted speed limit.



KEY PLAN

LEGEND

- SITE BOUNDARY
- EXISTING ROAD (NIAGARA, 2025)**
 - LOCAL / COLLECTOR
 - HIGHWAY
 - ARTERIAL
- INTERSECTION**
 - SIGNALIZED INTERSECTION
 - STOP CONTROLLED INTERSECTION

806 KILLALY STREET EAST
FIGURE 3 - EXISTING
STUDY ROAD NETWORK



BASE MAP SOURCE: Vantor, City of Welland, Niagara Region, Regional Municipality of Niagara, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

2.2 Transportation Data

The turning movement counts we conducted by a specialty firm at the study intersections to support the analysis of this study. **Table 3** summarizes the study intersections, date of data collection and signal timing plans, as well as the source of the information.

Traffic data was collected during the hours of 6:00 a.m. to 10:00 a.m. and 3:00 p.m. to 7:00 p.m.

Table 3: Traffic Data

Intersection	TMC Date	TMC Source	Timing Plan Date	Timing Plan Source
Highway 140/Elizabeth Street and Main Street (Highway 3)	Thursday, November 23, 2023, and Saturday, November 25, 2023	Spectrum	20 th October 2021	MTO
Main Street and Snider Road			N/A	
Main Street and Lorraine Road/Babion Road				
Killaly Street/Lorraine Road				
Killaly Street/Elizabeth Street				

It is noted that traffic counts were not conducted at the intersection of Killaly Street and Snider Road as there is not a significant amount of existing traffic at this intersection such that it would impact the results of the analysis.

Therefore, the intersection is not analyzed as part of existing and future background conditions.

Appendix C contains the traffic data used within this study.

2.3 Traffic Modelling and Assumptions

The existing traffic conditions on the study road network were modelled in Synchro 11 based on the "Highway Capacity Manual (HCM)" as agreed upon in terms of reference correspondence with Niagara Region.

It is also noted that a Term of Reference for the proposed development was previously submitted to the MTO in the year 2021 by EXP, which confirmed that a saturation flow rate of 1750 vehicles per hour per lane and a peak hour factor of 0.92 should be used. However, City of Port Colborne's Peer Reviewer RVA requested to follow the saturation flow rates provided in the Niagara Region Guidelines. Therefore, the revised saturation flow rates according to Niagara Region were used in the preparation of the analyses contained herein.

Roadway geometrics were modelled based on the existing study road network description outlined in Section 2.1 and the traffic volumes applied to the existing conditions are per Section 2.2, based

on the turning movement count survey data. This survey data was also used to calculate the heavy vehicle percentages for each movement.

The MTO's Transportation Impact Study Guidelines provide the following parameters indicating critical operations requiring mitigation measures:

- For signalized intersections,
 - A Level of Service "E" or worse
 - Volume-to-capacity (v/c) ratio of 0.85 or greater for through, shared turning and exclusive turning movements.
 - 95th percentile queues exceeding the available storage length.
- For stop-controlled intersections:
 - A Level of Service "D" or worse, or movement v/c ratios exceeding 0.85
 - 95th percentile queues exceeding the available storage length.

2.4 Saturation Flow Rates

The Niagara Region Guidelines was referenced to identify the standard saturation flow rates required for this study. The weekday A.M., weekday P.M. and Saturday existing scenarios were updated with the saturation flow rates outlined in the "Other Municipalities" column in **Table 4** below for each movement.

Table 4: Saturation Flow Rates

Variable	Saturation Flow Rate by Jurisdiction (pc/h/ln)			
	St. Catharines/Welland	Niagara Falls	Grimsby	Other Municipalities ¹
T	1,776	1,579	1,532	1,629
L	1,651	1,454	1,407	1,504
LT	1,375	1,178	1,131	1,228
LL	2,341	2,144	2,097	2,194
R	1,498	1,301	1,254	1,351
RT	1,535	1,338	1,291	2,194
LTR	1,630	1,433	1,386	1,351

Note 1. The survey conducted for the saturation flow rate modelling only included municipalities in St. Catharines, Welland, Niagara Falls, and Grimsby. For other municipalities in the Niagara Region, the average value of estimated saturation flow rates is recommended.

2.5 Existing Operations

Table 6 outlines the 2023 existing conditions traffic operations at the signalized and unsignalized intersections in the study road network. Synchro 11 was used to determine intersection operations at both the signalized and unsignalized study intersections.

Figure 4 shows the 2023 existing traffic volumes at the study intersections.

Under 2023 existing conditions, the unsignalized and signalized intersections operate with a Level of Service "B" or better in the Weekday A.M. and P.M. and Saturday peak hours with minimal delays and well under capacity.

As per **Table 6**, the 95th percentile queue length at the intersection of Highway 140/Elizabeth Street and Main Street East operates well under the available storage in the Weekday A.M. and P.M. peak hours and Weekend peak hour. **Appendix D** contains the 2023 existing conditions detailed capacity analysis.

Table 5: 2023 Existing Conditions Traffic Operations

Intersection	Performance Metrics									
	Movement	LOS ¹			Delay (s)			v/c ratio ²		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Hwy 140/Elizabeth Street and Main Street (Signal)	Overall	B	B	B	14.9	17.1	15.9	0.52	0.74	0.62
	EBL	C	D	C	27.3	36.5	30.4	0.50	0.74	0.62
	EBT	C	C	B	20.9	20.7	19.4	0.36	0.47	0.35
	EBR	A	A	A	6.3	2.8	5.8	0.22	0.10	0.17
	WBL	B	B	B	18.9	14.7	17.0	0.19	0.07	0.15
	WBT	C	C	C	24.7	20.3	21.1	0.52	0.47	0.45
	WBR	A	A	A	6.0	3.9	3.0	0.17	0.11	0.10
	NBL	B	B	B	11.1	15.5	14.4	0.15	0.13	0.26
	NBTR	B	B	B	10.3	14.9	11.9	0.26	0.30	0.27
	SBL	B	B	B	10.4	16.0	12.5	0.06	0.16	0.05
	SBT	B	B	B	10.3	15.0	12.2	0.11	0.15	0.10
	SBR	A	A	A	3.9	5.3	4.2	0.29	0.48	0.26
Main Street and Snider Road (TWSC)	Overall	A	B	A	9.8	14.0	0.0	0.00	0.00	0.00
	EBLTR	A	A	A	0.0	0.0	0.0	0.00*	0.00*	0.00
	WBLTR	A	A	A	0.0	0.0	0.0	0.00	0.00*	0.00
	NBLTR	A	B	A	0.0	14.0	0.0	0.00	0.00*	0.00
	SBLTR	A	A	A	9.8	9.9	0.0	0.00*	0.00*	0.00
Main Street and Lorraine Road/Babion Road (TWSC)	Overall	B	B	B	11.8	12.8	12.8	0.03	0.03	0.00
	EBLT	A	A	A	0.0	0.0	0.0	0.00*	0.00	0.00
	EBR	A	A	A	0.0	0.0	0.0	0.00*	0.01	0.00*
	WBLT	A	A	A	0.1	0.0	0.0	0.00*	0.00	0.00*
	WBR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00*
	NBLTR	B	B	B	11.8	12.8	11.4	0.03	0.03	0.00*
	SBLTR	B	A	B	11.0	9.8	12.8	0.00*	0.00*	0.00*
Killaly Street and Lorraine Road (TWSC)	Overall	B	B	B	10.0	10.7	10.1	0.02	0.03	0.02
	EBLTR	A	A	A	0.1	0.2	0.0	0.00*	0.00*	0.00
	WBLTR	A	A	A	0.6	0.5	0.6	0.00*	0.00*	0.00*
	NBLTR	A	B	A	9.8	10.1	9.4	0.02	0.03	0.02
	SBLTR	B	B	B	10.0	10.7	10.1	0.00*	0.02	0.02

Intersection	Performance Metrics									
	Movement	LOS ¹			Delay (s)			v/c ratio ²		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Killaly Street and Elizabeth Road (TWSC)	Overall	B	B	B	12.4	14.0	12.3	0.20	0.26	0.20
	EBLTR	A	A	A	3.4	3.1	3.1	0.06	0.07	0.05
	WBLTR	A	A	A	0.1	0.5	0.5	0.00*	0.00*	0.00*
	NBLTR	B	B	B	12.4	14.0	12.3	0.08	0.07	0.06
	SBLTR	B	B	B	12.1	12.9	11.2	0.20	0.26	0.20

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/c ratios greater than 0.85 are bolded and greater than 1.00 are bolded with red text.

The critical v/c threshold for intersections with Regional Roads and provincial Roads (Highway 140 & Highway 3) is 0.85 for all movements per Niagara Region and MTO guidelines..

Table 6: 2023 Existing Conditions Queuing Assessment

Intersection	Performance Metrics				
	Movement	95 th Percentile Queue Length (m)			Auxiliary Lane Storage Length (m)
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	30	50	35	115
	EBR	10	5	10	110
	WBL	15	10	10	100
	WBR	10	5	5	30
	NBL	15	15	25	100
	SBL	10	20	10	115
	SBR	10	20	15	25

3.0 Future Background Conditions

This section summarizes the future background conditions of the study road network and provides details relating to growth rates, future transportation network improvements, and background developments within the study area. As established in Section 1.3 (per the Terms of Reference), this study considers the 2031, 2036 and 2041 horizon years in the future background traffic analysis.

3.1 Future Transportation Network

As detailed in the Draft Plan, Snider Road is proposed to be extended through the development to connect future Street A and constructed to Urban Standards. It is assumed within the study that Snider Road would be built by the full build-out year (2031) alongside the development.

However, this is not assumed to occur in the background conditions and no other transportation improvements were identified to be included in the background conditions assessment.

3.2 Growth Rates

The MTO's "Provincial Highways Traffic Volumes 1988-2019" document was reviewed to analyze historical traffic volumes on Highway 3. The document provides historical traffic data for the segment of Highway 3 between Barber Drive and Killaly Street East and Highway 140 beginning from the City of Port Colborne.

Based on a review of the historical data, an average annual compound growth rate of 2.5% was calculated along Main Street East (Highway 3) and 1.7% along Highway 140 between the years of 2010 and 2019.

These background growth rates were applied to all the horizon years for all through movements along the Highway 3 corridor except for at the intersection of Highway 3 and Highway 140 where the growth rates were applied to all eastbound, westbound, and southbound movements at the intersection.

Appendix E contains the growth rate analysis.

3.3 Background Developments

Staff at Niagara Region and the City of Port Colborne have identified the expansion plans for the Port Colborne Quarries on the north side of the subject site and provided the associated TIS prepared by IBI Group (now Arcadis). Consequently, these expansion plans have been incorporated into the background traffic for the purposes of this study.

Anticipated to progress in phases, the Quarries expansion site is expected to predominantly generate truck traffic, which is foreseen to remain consistent. To ensure a comprehensive synchro analysis, the truck volumes were transformed into equivalent passenger car volumes, thereby becoming integral to the background analysis.

Additionally, it is noted that distinct trip distribution analyses were carried out for the years 2031, 2036, and 2041 by IBI Group due to the changes in site accesses at the development and the changing site traffic was incorporated within the background analysis.

Appendix F contain the site trips generated by the development for the year 2031, 2036 and 2041 respectively.

3.4 2031 Intersection Operations

Table 7 outlines the 2031 future background conditions traffic operations at the signalized and unsignalized intersections. **Figure 5** shows the 2031 future background traffic volumes.

Under 2031 future background conditions, the unsignalized intersections operate with a Level of Service "B" or better similarly to the 2023 existing conditions, except for the northbound shared left/through/right movement at Main Street and Snider Road, which is expected to operate at a Level of Service "C". These intersections are anticipated to operate with minimal delays and well below capacity."

The signalized intersection at Highway 140/Elizabeth Street and Main Street East operates similarly to the existing conditions in 2023, maintaining an overall Level of Service of "C" or better with minimal delays and well under capacity. However, the Level of Service for the eastbound-left approach in the weekday P.M. peak hour is expected to deteriorate to "D," with an increase in delay of at least 14.6 seconds and an expected rise in the volume-to-capacity ratio from 0.74 to 0.87.

As per **Table 8**, the 95th percentile queue length at the intersection of Highway 140/Elizabeth Street and Main Street East is expected to operate well under the available storage in the Weekday A.M. and P.M. peak hours and Weekend peak hour similar to the 2023 existing conditions.

Appendix G contains the 2031 future background conditions detailed capacity analysis.

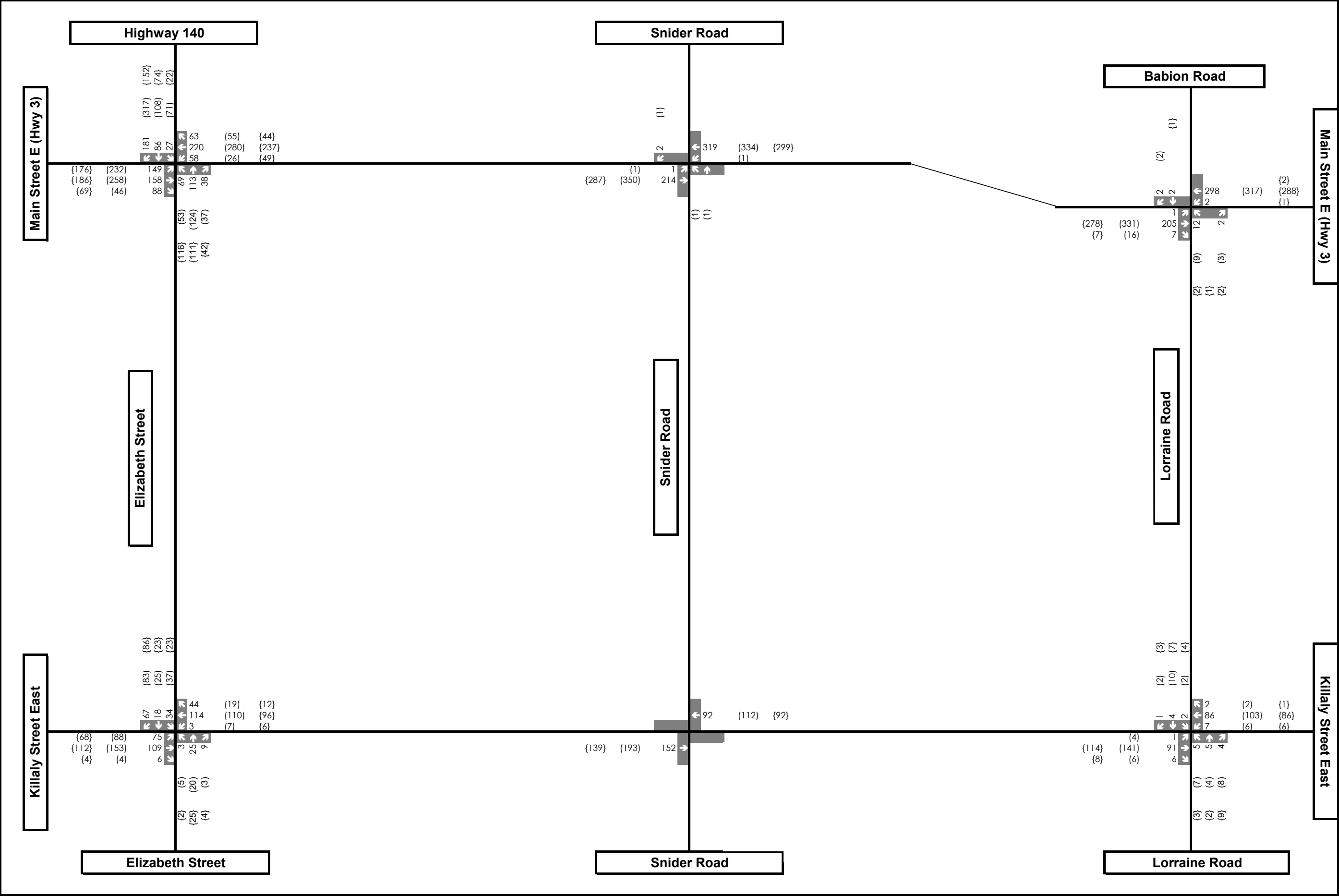


Table 7: 2031 Future Background Traffic Operations

Intersection	Performance Metrics									
	Movement	LOS ¹			Delay (s)			v/c ratio ²		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Hwy 140/Elizabeth Street and Main Street (Signal)	Overall	B	C	B	16.2	20.1	17.3	0.64	0.87	0.71
	EBL	C	D	C	31.2	51.1	34.6	0.64	0.87	0.71
	EBT	C	C	B	20.0	20.3	19.0	0.39	0.50	0.38
	EBR	A	A	A	5.3	3.9	5.0	0.24	0.11	0.19
	WBL	B	B	B	17.8	14.2	16.4	0.21	0.08	0.17
	WBT	C	B	C	24.1	19.9	21.1	0.56	0.50	0.50
	WBR	A	A	A	5.4	4.7	3.8	0.18	0.13	0.11
	NBL	B	B	B	14.0	17.6	16.7	0.16	0.14	0.27
	NBTR	B	B	B	12.8	17.2	13.8	0.28	0.32	0.28
	SBL	B	B	B	13.4	18.6	14.7	0.07	0.20	0.06
	SBT	B	B	B	13.1	17.4	14.4	0.13	0.18	0.11
	SBR	A	A	A	4.7	6.0	4.6	0.36	0.55	0.30
Main Street and Snider Road (TWSC)	Overall	B	C	A	10.2	15.9	0.0	0.00	0.01	0.01
	EBLTR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	WBLTR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	A	C	A	0.0	15.9	0.0	0.00	0.01	0.01
	SBLTR	B	B	A	10.2	10.3	0.0	0.00	0.00	0.00
Main Street and Lorraine Road/Babion Road (TWSC)	Overall	B	B	B	12.9	14.4	14.0	0.03	0.03	0.01
	EBLT	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	EBR	A	A	A	0.0	0.0	0.0	0.00	0.01	0.00
	WBLT	A	A	A	0.1	0.0	0.0	0.00	0.00	0.00
	WBR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	B	B	B	12.9	14.4	12.4	0.03	0.03	0.01
	SBLTR	B	B	B	11.7	10.2	14.0	0.00	0.00	0.00
Killaly Street and Lorraine Road (TWSC)	Overall	B	B	B	10.0	10.7	10.1	0.02	0.03	0.02
	EBLTR	A	A	A	0.1	0.2	0.0	0.00	0.00	0.00
	WBLTR	A	A	A	0.6	0.5	0.6	0.00	0.00	0.00
	NBLTR	A	B	A	9.8	10.1	9.4	0.02	0.03	0.02
	SBLTR	B	B	B	10.0	10.7	10.1	0.00	0.02	0.02

Intersection	Movement	Performance Metrics								
		LOS ¹			Delay (s)			v/c ratio ²		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Killaly Street and Elizabeth Road (TWSC)	Overall	B	B	B	12.4	14.0	12.3	0.20	0.26	0.20
	EBLTR	A	A	A	3.4	3.1	3.1	0.06	0.07	0.05
	WBLTR	A	A	A	0.1	0.5	0.5	0.00	0.00	0.00
	NBLTR	B	B	B	12.4	14.0	12.3	0.08	0.07	0.06
	SBLTR	B	B	B	12.1	12.9	11.2	0.20	0.26	0.20

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/c ratios of 0.85 and greater than 0.85 are bolded and greater than 1.00 are bolded with red text.

The critical v/c threshold for intersections with Regional Roads and provincial Roads (Highway 140 & Highway 3) is 0.85 for all movements per MTO guidelines.

Table 8: 2031 Future Background Conditions Queuing Assessment

Intersection	Movement	Performance Metrics			
		95 th Percentile Queue Length (m)			Auxiliary Lane Storage Length (m)
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	40	75	45	115
	EBR	10	5	10	110
	WBL	15	10	15	100
	WBR	10	10	5	30
	NBL	20	15	30	100
	SBL	10	20	10	115
	SBR	15	20	15	25

3.5 2036 Intersection Operations

Table 9 outlines the 2036 future background conditions traffic operations at the signalized and unsignalized intersections. **Figure 6** shows the 2036 future background traffic volumes.

Under 2036 future background conditions, the unsignalized intersections operate similarly to the 2031 future background conditions, with a Level of Service "C" or better with minimal delays and well under capacity.

The signalized intersection at Highway 140/Elizabeth Street and Main Street East operates similarly to the 2031 future background conditions, maintaining an overall Level of Service of "B" or better in the weekday A.M. and weekend peak hours, except for the P.M. peak hour, which experiences a Level of Service "C" with minimal delays and well under capacity. Further, the volume-to-capacity ratio for the eastbound left-turn movement is expected to increase from 0.87 to 0.96 with an increase in delay of 17.7 seconds.

As per **Table 10**, the 95th percentile queue length at the intersection of Highway 140/Elizabeth Street and Main Street East is expected to operate well under the available storage in the Weekday A.M. and P.M. peak hours and Weekend peak hour similar to the 2031 future background conditions.

The 95th percentile queue length for eastbound left-turn lane is forecasted to increase by approximately 20 meters in the weekday P.M. peak hour. However, it is expected to operate well under available storage of 115 meters.

Appendix H contains the 2036 future background conditions detailed capacity analysis.

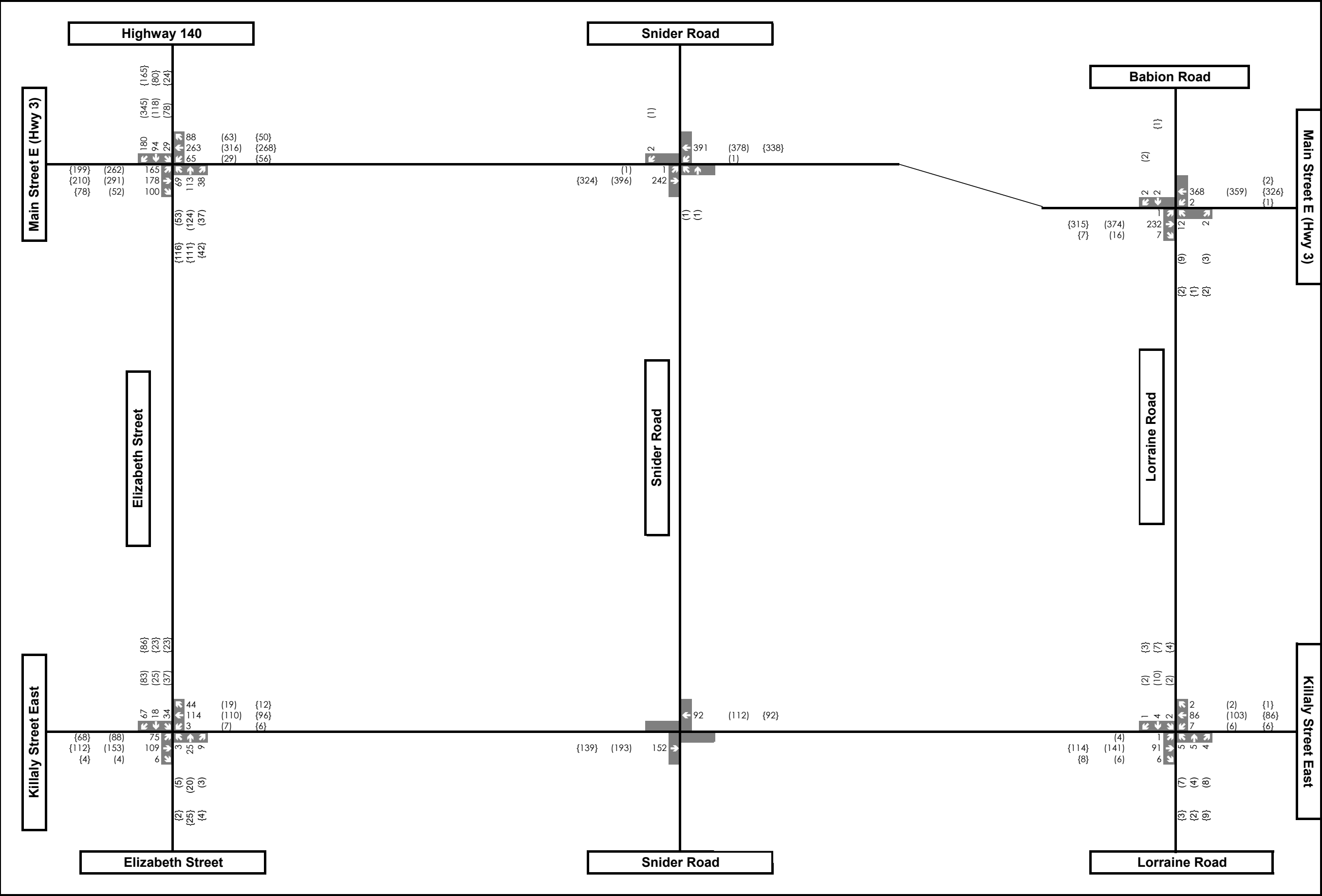


Table 9: 2036 Future Background Traffic Operations

Intersection	Performance Metrics									
	Movement	LOS ¹			Delay (s)			v/c ratio ²		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Hwy 140/Elizabeth Street and Main Street (Signal)	Overall	B	C	B	17.4	23.2	18.8	0.71	0.96	0.79
	EBL	D	E	D	35.6	68.8	42.0	0.71	0.96	0.79
	EBT	B	C	B	19.8	20.2	18.7	0.41	0.52	0.40
	EBR	A	A	A	4.9	4.4	4.7	0.25	0.12	0.20
	WBL	B	B	B	17.5	14.3	16.1	0.23	0.09	0.18
	WBT	C	B	C	25.6	19.8	21.0	0.63	0.51	0.52
	WBR	A	A	A	5.0	4.4	4.3	0.23	0.13	0.12
	NBL	B	B	B	15.4	18.2	18.3	0.16	0.15	0.29
	NBTR	B	B	B	14.0	18.2	15.0	0.28	0.35	0.29
	SBL	B	B	B	14.8	19.6	15.9	0.08	0.24	0.06
	SBT	B	B	B	14.5	18.3	15.8	0.14	0.21	0.13
	SBR	A	A	A	5.0	6.7	4.9	0.37	0.60	0.33
Main Street and Snider Road (TWSC)	Overall	B	C	A	10.7	17.5	0.0	0.00	0.00	0.00
	EBLTR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	WBLTR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	A	C	A	0.0	17.5	0.0	0.00	0.00	0.00
	SBLTR	B	B	A	10.7	10.6	0.0	0.00	0.00	0.00
Main Street and Lorraine Road/Babion Road (TWSC)	Overall	B	C	C	14.3	15.8	15.0	0.04	0.04	0.01
	EBLT	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	EBR	A	A	A	0.0	0.0	0.0	0.00	0.01	0.00
	WBLT	A	A	A	0.1	0.0	0.0	0.00	0.00	0.00
	WBR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	B	C	B	14.3	15.8	13.2	0.04	0.04	0.01
	SBLTR	B	B	C	12.6	10.5	15.0	0.00	0.00	0.00
Killaly Street and Lorraine Road (TWSC)	Overall	B	B	B	10.0	10.7	10.1	0.02	0.03	0.02
	EBLTR	A	A	A	0.1	0.2	0.0	0.00	0.00	0.00
	WBLTR	A	A	A	0.6	0.5	0.6	0.00	0.00	0.00
	NBLTR	A	B	A	9.8	10.1	9.4	0.02	0.03	0.02
	SBLTR	B	B	B	10.0	10.7	10.1	0.00	0.02	0.02

Intersection	Performance Metrics									
	Movement	LOS ¹			Delay (s)			v/c ratio ²		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Killaly Street and Elizabeth Road (TWSC)	Overall	B	B	B	12.4	14.0	12.3	0.20	0.26	0.20
	EBLTR	A	A	A	3.4	3.1	3.1	0.06	0.07	0.05
	WBLTR	A	A	A	0.1	0.5	0.5	0.00	0.00	0.00
	NBLTR	B	B	B	12.4	14.0	12.3	0.08	0.07	0.06
	SBLTR	B	B	B	12.1	12.9	11.2	0.20	0.26	0.20

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/ c ratios of 0.85 and greater than 0.85 are bolded and greater than 1.00 are bolded with red text.

The critical v/c threshold for intersections with Regional Roads and provincial Roads (Highway 140 & Highway 3) is 0.85 for all movements per Niagara Region and MTO guidelines.

Table 10: 2036 Future Background Conditions Queueing Assessment

Intersection	Performance Metrics				
	Movement	95 th Percentile Queue Length (m) [50 th Percentile Queue Length (m)]			Auxiliary Lane Storage Length (m)
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	45	95	60	115
	EBR	10	10	10	110
	WBL	15	10	15	100
	WBR	10	10	10	30
	NBL	20	15	30	100
	SBL	10	20	10	115
	SBR	15	25	15	25

3.6 2041 Intersections Operation

Table 11 outlines the 2041 future background conditions traffic operations at the signalized and unsignalized intersections. **Figure 7** shows the 2041 future background traffic volumes.

Under 2041 future background conditions, the unsignalized intersections operate with a Level of Service "C" or better similarly to the 2036 future background conditions with minimal delays and well under capacity.

The signalized intersection at Highway 140/Elizabeth Street and Main Street East operates similarly to the 2036 future background conditions, maintaining an overall Level of Service of "B" or better in the weekday A.M. and weekend peak hours and an overall Level of Service "C" in the weekday P.M. peak hour with minimal delays and well under capacity. However, the Level of Service for eastbound left-turn movement is expected to deteriorate to "F" in the weekday P.M. peak hour with volume-to-capacity ratio forecasted to increase from 0.96 to 1.19 resulting from an increase in delay of 72 seconds.

As per **Table 12**, the 95th percentile queue length at the intersection of Highway 140/Elizabeth Street and Main Street East is expected to operate well under the available storage in the Weekday A.M. and P.M. peak hours and Weekend peak hour similar to the 2036 future background conditions.

The 95th percentile queue length for eastbound left-turn lane is forecasted to increase by approximately 20 meters in the weekday P.M. peak hour compared to the 2036 future background conditions and expected to operate at storage of 115 meters.

Appendix I contains the 2041 future background conditions detailed capacity analysis.

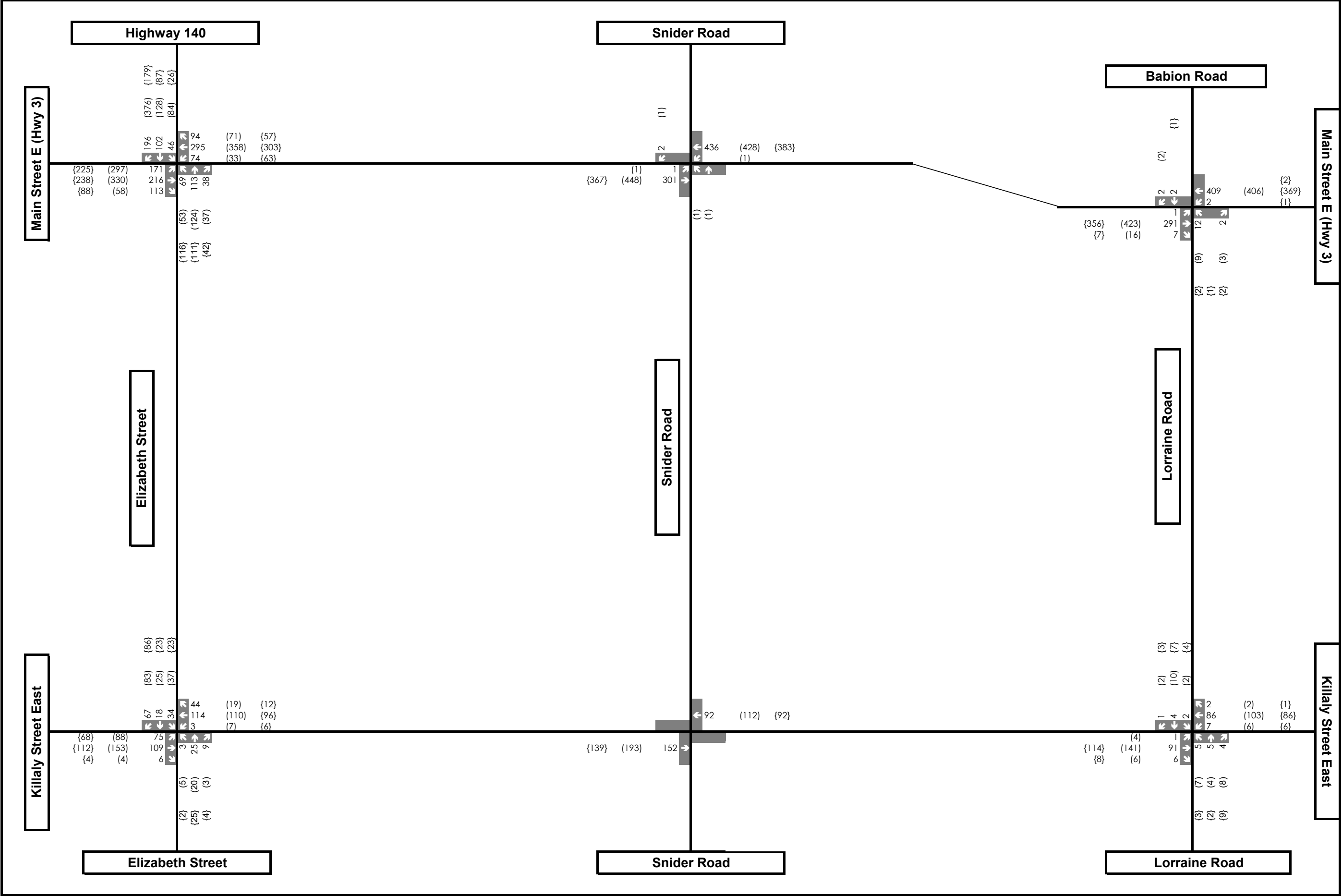


Table 11: 2041 Future Background Traffic Operations

Intersection	Performance Metrics									
	Movement	LOS ¹			Delay (s)			v/c ratio ²		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Hwy 140/Elizabeth Street and Main Street (Signal)	Overall	B	D	C	18.6	35.7	21.0	0.77	1.19	0.88
	EBL	D	F	D	41.0	140.8	54.5	0.77	1.19	0.88
	EBT	C	C	B	20.6	21.7	18.3	0.47	0.58	0.42
	EBR	A	A	A	4.6	4.6	4.4	0.27	0.13	0.20
	WBL	B	B	B	17.7	14.7	15.8	0.26	0.11	0.19
	WBT	C	C	C	26.7	21.1	20.6	0.68	0.57	0.53
	WBR	A	A	A	4.8	4.5	4.6	0.24	0.14	0.13
	NBL	B	B	C	16.3	18.3	20.0	0.17	0.16	0.31
	NBTR	B	B	B	14.8	18.3	16.4	0.29	0.35	0.31
	SBL	B	B	B	16.0	20.0	16.9	0.13	0.26	0.07
	SBT	B	B	B	15.4	18.6	17.3	0.16	0.23	0.15
	SBR	A	B	A	5.3	10.7	5.1	0.40	0.68	0.36
Main Street and Snider Road (TWSC)	Overall	B	C	A	11.1	19.7	0.0	0.00	0.00	0.00
	EBLTR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	WBLTR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	A	C	A	0.0	19.7	0.0	0.00	0.00	0.00
	SBLTR	B	B	A	11.1	11.0	0.0	0.00	0.00	0.00
Main Street and Lorraine Road/Babion Road (TWSC)	Overall	C	C	C	16.0	17.6	16.3	0.04	0.04	0.01
	EBLT	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	EBR	A	A	A	0.0	0.0	0.0	0.00	0.01	0.00
	WBLT	A	A	A	0.1	0.0	0.0	0.00	0.00	0.00
	WBR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	C	C	B	16.0	17.6	14.2	0.04	0.04	0.01
	SBLTR	B	B	C	13.5	10.8	16.3	0.00	0.00	0.00
Killaly Street and Lorraine Road (TWSC)	Overall	B	B	B	10.0	10.7	10.1	0.02	0.03	0.02
	EBLTR	A	A	A	0.1	0.2	0.0	0.00	0.00	0.00
	WBLTR	A	A	A	0.6	0.5	0.6	0.00	0.00	0.00
	NBLTR	A	B	A	9.8	10.1	9.4	0.02	0.03	0.02
	SBLTR	B	B	B	10.0	10.7	10.1	0.00	0.02	0.02

Intersection	Performance Metrics									
	Movement	LOS ¹			Delay (s)			v/c ratio ²		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Killaly Street and Elizabeth Road (TWSC)	Overall	B	B	B	12.4	14.0	12.3	0.20	0.26	0.20
	EBLTR	A	A	A	3.4	3.1	3.1	0.06	0.07	0.05
	WBLTR	A	A	A	0.1	0.5	0.5	0.00	0.00	0.00
	NBLTR	B	B	B	12.4	14.0	12.3	0.08	0.07	0.06
	SBLTR	B	B	B	12.1	12.9	11.2	0.20	0.26	0.20

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/c ratios of 0.85 and greater than 0.85 are bolded and greater than 1.00 are bolded with red text.

The critical v/c threshold for intersections with Regional Roads and provincial Roads (Highway 140 & Highway 3) is 0.85 for all movements per Niagara Region and MTO guidelines.

Table 12: 2041 Future Background Conditions Queuing Assessment

Intersection	Performance Metrics				
	Movement	95 th Percentile Queue Length (m) [50 th Percentile Queue Length (m)]			Auxiliary Lane Storage Length (m)
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	50	115 [65]	75	115
	EBR	10	10	10	110
	WBL	20	10	15	100
	WBR	10	10	10	30
	NBL	20	15	30	100
	SBL	15	25	10	115
	SBR	15	40	15	25

4.0 Site Generated Traffic

The proposed development mixed-use will result in additional turning movements at the study intersections. Therefore, this section describes the trip forecasting methodology and results of this forecast for the development proposal including trip generation, distribution, and assignment.

4.1 Development Proposal

The proposed development consists of a mix of detached, attached, and multifamily residential units, along with an elementary school and a commercial area. The site statistics are provided in **Table 13** below.

Table 13: Site Statistics

Land Use	Units/GFA
Single Detached Units	1,258
Townhouse Units	383
Back-to-Back Townhouse Units	362
Commercial Area (South-east of Elizabeth Street & Killaly Street East)	10,000 ft ²
Commercial Area (North of Main Street East)	700,000 ft ²
Elementary School	25,000 ft ²

The trip generation of the proposed residential dwelling and commercial area was forecasted using published data from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition.

The site access sensitivity analysis was conducted to assess the intersections of Main Street East & Snider Road and Main Street East & Street C/Commercial Access under two scenarios:

- **Scenario 1:** Full-movement access west of Snider Road on Main Street East, forming a four-legged intersection with the residential site access south of Main Street East.
- **Scenario 2:** Restricted-movement access (left-in/right-in/right-out) west of Snider Road on Main Street East, forming a four-legged intersection with the residential site access south of Main Street East.

The sensitivity primarily affects residential and commercial trips (in the north block). Accordingly, site trip assignments for both scenarios have been provided, including gross site trips and separate figures for trips generated from the residential and commercial blocks in the north, as detailed in the sections below.

4.2 Gross Trip Generation

The site consists of a mix of land uses and is forecast to generate vehicle trips on the surrounding road network. Trip generation rates, based on the *ITE Trip Generation Manual, 12th Edition*. The applicable fitted curve equations available for each land-use category were applied, and where equations were not available, average rates were used for the corresponding land-use categories. The equation/average rates used for trip estimation are shown in **Table 14**.

Trips generated by the site were estimated based on the proposed number of residential units and the gross floor area of the commercial component. To estimate trips generated by the elementary school, enrollment data for comparable schools listed below were obtained from annual Ontario school board enrollment records (Ontario Data Catalogue for 2024-2025), and the average enrollment was used to estimate school trips:

- St John Bosco C Elem S – 230 Students
- St Patrick C Elem S -150 Students
- St Therese C Elem S – 200 Students

The average enrollment of the three schools is **194 students**, which was used to determine the school-related trips.

Table 14: Trip Generation Rate

Land Use	Units/GFA	Peak Hour		Splits	Equation/Rate
210: Single Family Detached	1,258 Units	Weekday A.M.	In	27%	T = 0.67 X + 5.59
			Out	73%	
		Weekday P.M.	In	62%	Ln(T) = 0.92 Ln(X) + 0.33
			Out	38%	
		Saturday	In	53%	T = 0.9 X + 10.97
			Out	47%	
215: Single Family Attached	383 Units	Weekday A.M.	In	25%	T = 0.59 X – 15.25
			Out	75%	
		Weekday P.M.	In	57%	T = 0.57 X – 7.84
			Out	43%	
		Saturday	In	48%	Ln(T) = 0.82 Ln(X) + 0.43
			Out	52%	
220 Multifamily Attached	362 Units	Weekday A.M.	In	24%	T = 0.35 X + 12.93
			Out	76%	
		Weekday P.M.	In	62%	T = 0.48 X + 7.35
			Out	38%	
		Saturday	In	38%	0.49
			Out	62%	
821: Retail Plaza (<40K)	10,000 ft²	Weekday A.M.	In	55%	3.93
			Out	45%	
		Weekday P.M.	In	50%	Ln(T) = 0.68 Ln(X) + 2.77
			Out	50%	
		Saturday	In	51%	6.63
			Out	49%	
820: Shopping Center (>150k)	700,000 ft²	Weekday A.M.	In	62%	T = 0.61 X + 132.89
			Out	38%	
		Weekday P.M.	In	49%	Ln(T) = 0.66 Ln(X) + 3.23
			Out	51%	
		Saturday	In	51%	Ln(T) = 0.69 Ln(X) + 3.33
			Out	49%	
520: Elementary School	194 Students	Weekday A.M.	In	54%	0.73
			Out	46%	
		Weekday P.M.	In	46%	0.16
			Out	54%	
		Saturday	In	-	-
			Out	-	-

The gross trips generated by the site are summarized in the table below, which outlines the estimated inbound and outbound vehicle trips during the applicable peak periods.

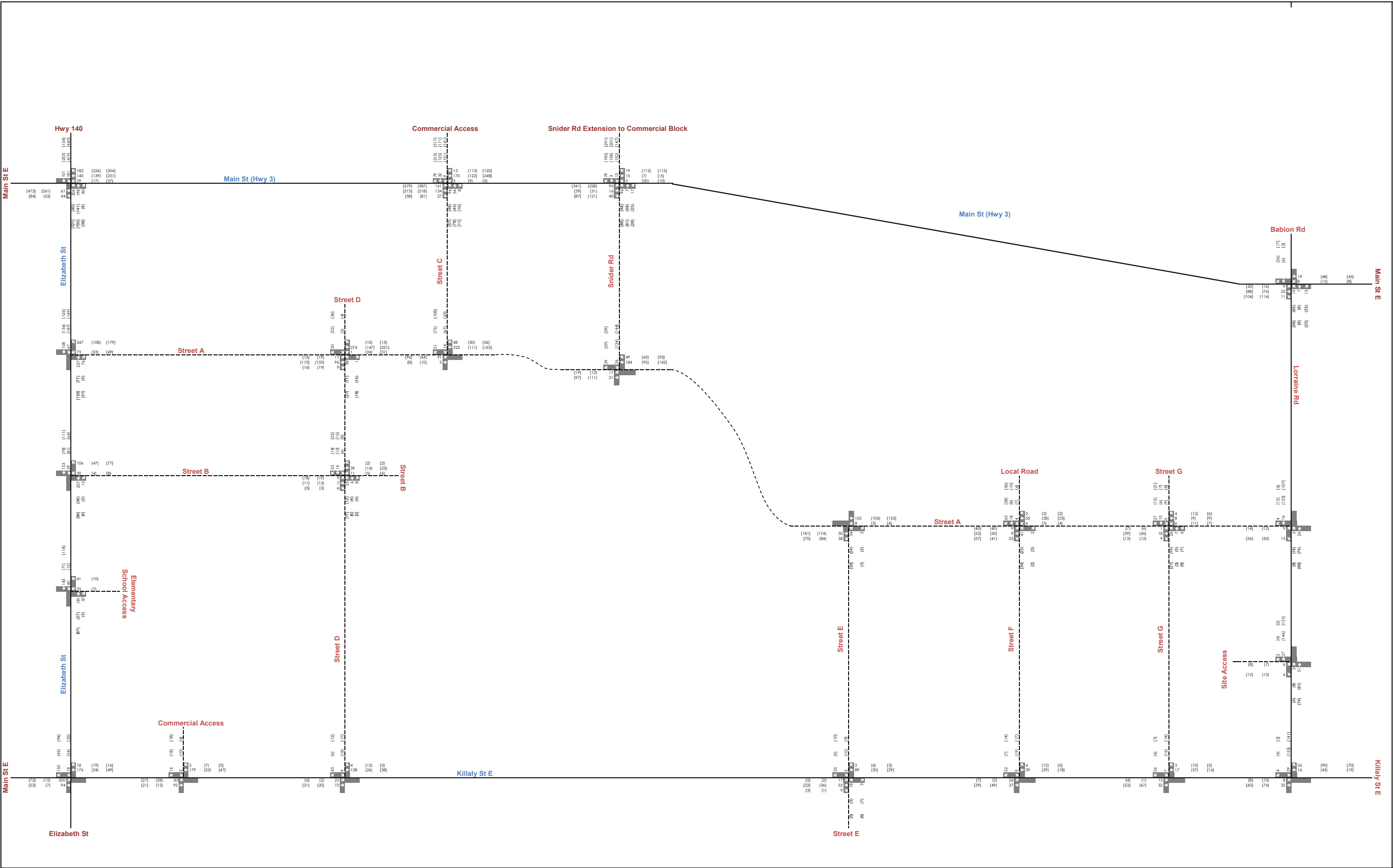
Table 15: Gross Site Trips

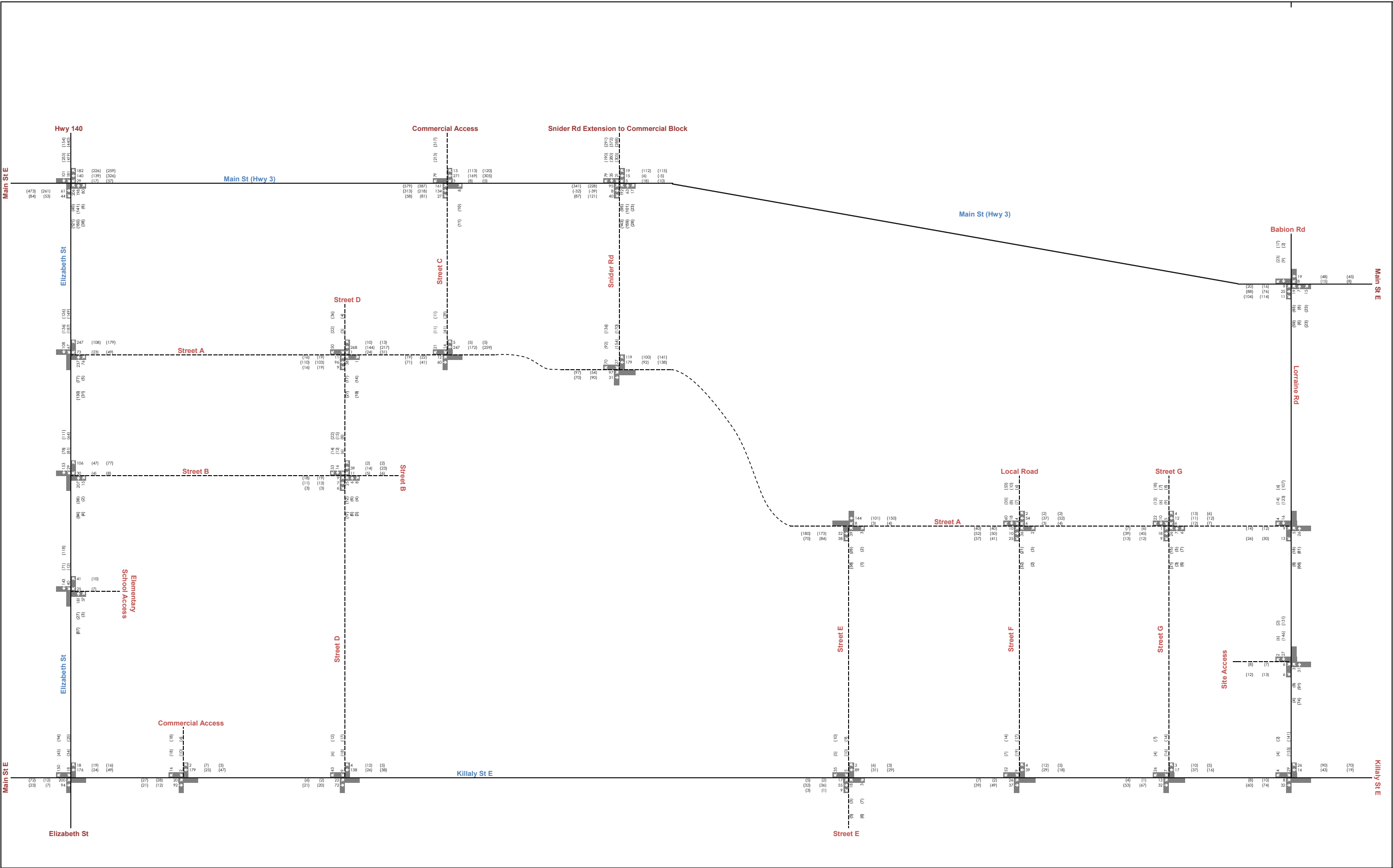
Trip Generation	Land Use	Units/GFA	Weekday AM		Weekday PM		Saturday	
			In	Out	In	Out	In	Out
Site Generated Trips	Single Family Detached (LUC 210)	1,258	229	619	613	376	606	537
	Single Family Attached (LUC 215)	383	53	158	120	91	97	105
	Multifamily Attached (LUC 220)	362	34	106	112	69	67	110
	Strip Retail Plaza <40K (LUC 821)	10,000 ft ²	22	18	38	38	34	32
	Shopping Center >150 K (LUC 820)	700,000 ft ²	347	213	935	973	1309	1258
	Elementary School (520)	194 (Students)	76	65	14	17	-	-
	Total		760	1,179	1,832	1,563	2,113	2,042

Note: Minor differences in trip totals may occur due to rounding in the analysis.

Therefore, the full buildout of the proposed development is expected to generate total gross trips of 1,939 (760 inbound and 1,179 outbound), 3,395 (1,832 inbound and 1,536 outbound) and 4,155 (2,113 inbound and 2,042 outbound) external trips during the weekday AM peak hour, weekday PM peak hour and Saturday peak hour, respectively. Trips generated by the Shopping Centre >150K represent a conservative calculation. Future planning applications for the commercial block will include an updated model that better reflects the gross floor area proposed on site; in our opinion this is estimated to be between 300-350,000sqft but will be confirmed and recalculated at a later date.

The gross site generated trips for scenario 1 and Scenario 2 are illustrated in **Figure 8** and **Figure 9**.





4.3 Multi-Use Reduction

It is anticipated that there will be internal interactions between the proposed residential use and commercial use. Therefore, a multi-use internal trip adjustment was applied based on information contained in NCHRP Project 8-51. The multi-use adjustment rates for the mixed-use development are summarized in **Table 16**.

Table 16: Multi-Use Adjustment Factors

Land Use	Weekday A.M. Peak		Weekday P.M. Peak		Saturday Peak	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
Residential	2%	1%	31%	18%	44%	18%
Retail	2%	3%	10%	26%	10%	26%

In balancing internal trips between land uses, inbound internal trips to the residential uses were assumed to equal outbound trips from the retail uses to the community, and outbound internal trips from the residential uses were assumed to equal inbound internal trips to the retail uses. For example, 263 inbound trips to the residential uses were calculated to originate internally within the community during the weekday PM peak hour, which corresponds to 263 outbound retail trips in the same peak hour.

As a result, internal trip capture reduced total external trips by 15 trips in the weekday AM peak hour, 360 trips in the weekday PM peak hour, and 470 trips in the Saturday peak hour. These internal trips were distributed within the site using logical routing.

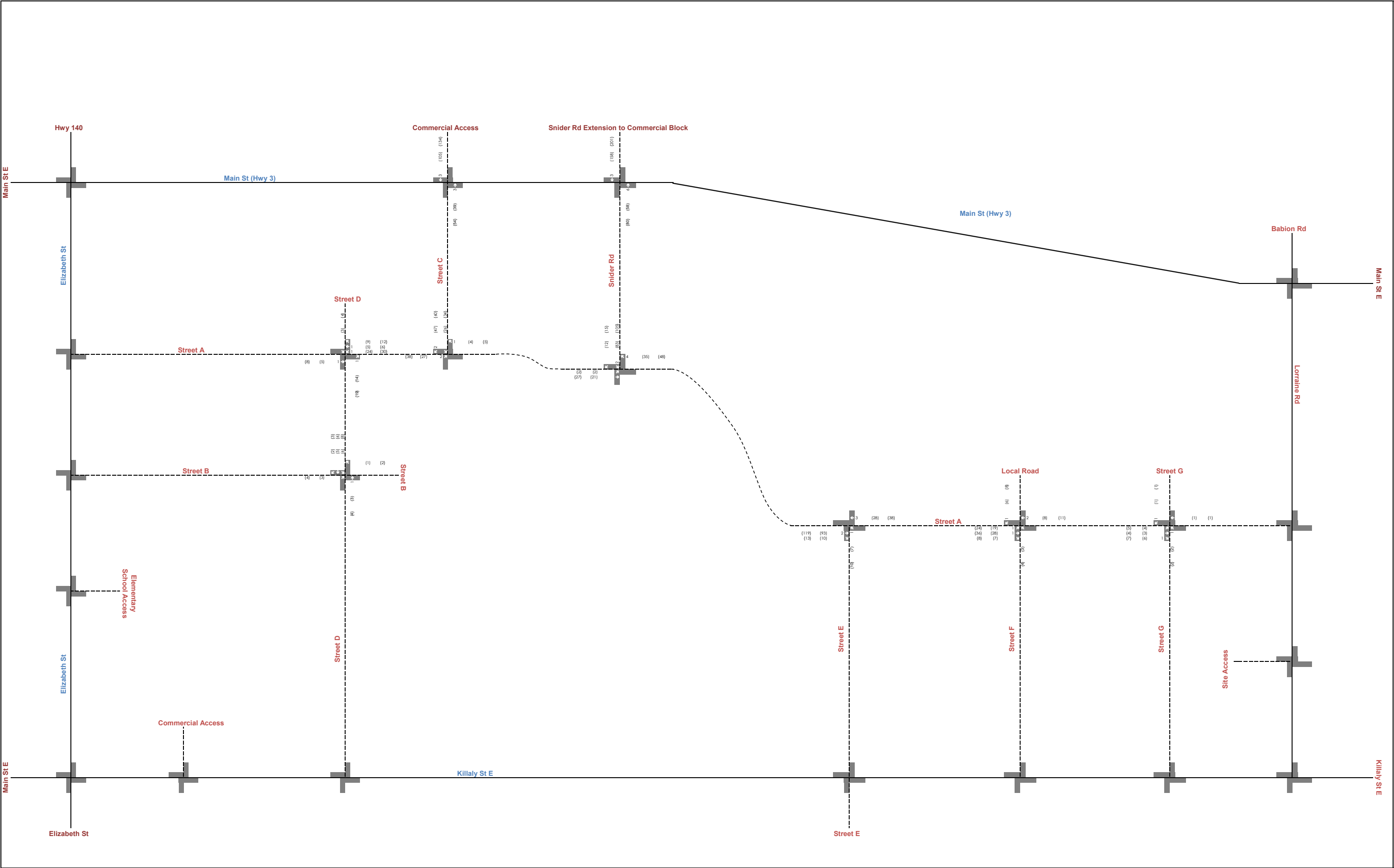
The internal trips resulting from multi-uses within the proposed development for scenario 1 and 2 are illustrated in **Figure 10** and **Figure 11**, respectively.

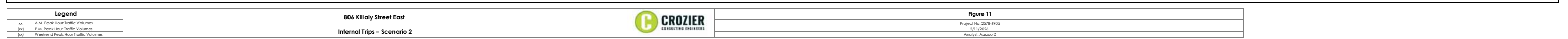
4.4 Pass-By Trips

The commercial area is expected to generate pass-by trips. Pass-by trips are made by motorists who are already traveling on the road network to their planned destinations but choose to make an intermediate stop along the way. For example, a motorist may stop for coffee at the development while traveling along their usual route to work. This stop does not add a new trip to the road network, since the motorist is already making a trip for another purpose.

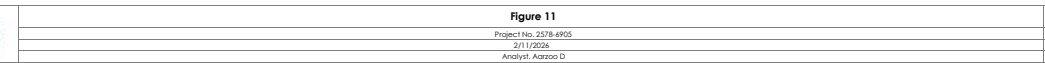
The ITE Trip Generation Manual provides pass-by rates for shopping centers for the weekday PM peak period and the Saturday peak period, but not for the weekday AM peak period. Therefore, the AM peak hour pass-by rate is assumed to be 0%. A pass-by rate of 34% is applied during the weekday PM peak period, and 26% during the Saturday peak period.

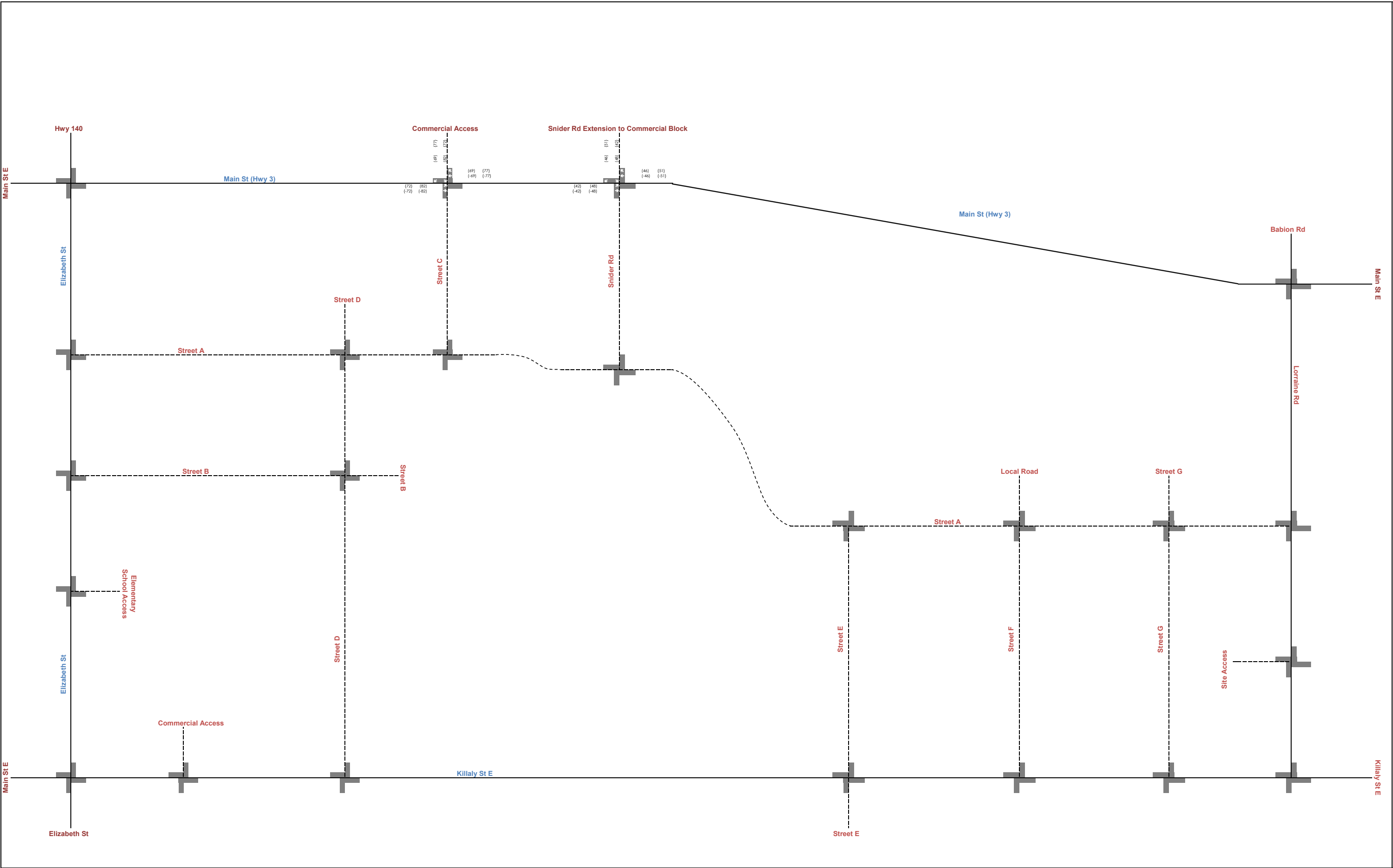
Pass-By trips for commercial block north of Main Street East for scenario 1 and 2 are illustrated in **Figure 12** and **Figure 13**, respectively.

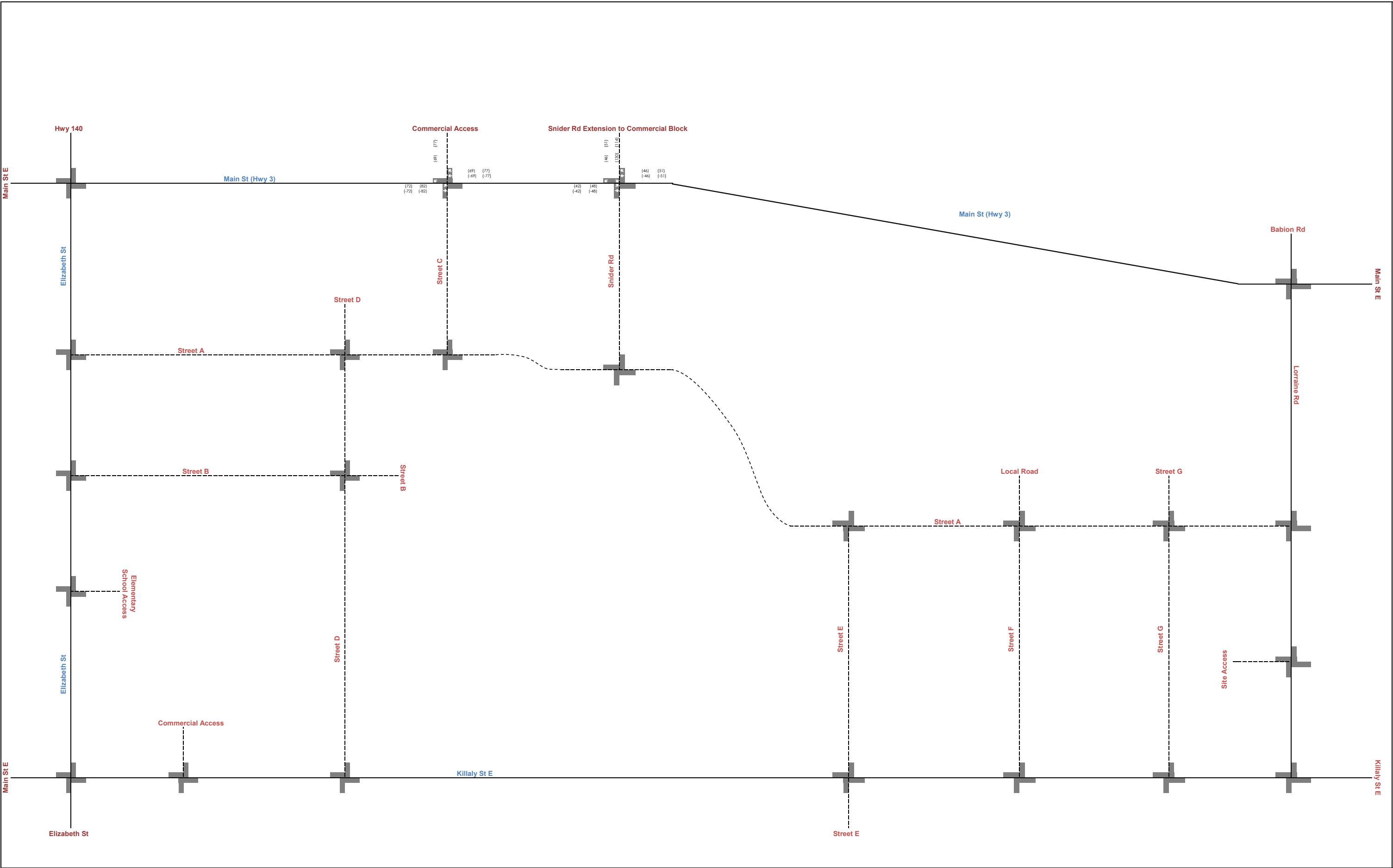




	806 Killaly Street East
	Internal Trips – Scenario 2







4.5 Net Trip Generation

The trips generated by the development were adjusted by accounting for internal trips within the community and pass-by trips from through traffic on the study road network. The remaining adjusted trips are forecast to use the external boundary road network, while internal trips are forecast to use road network within the community.

Relevant excerpts from the ITE Trip Generation Manual, 12th Edition and ITE Trip Generation Handbook, 3rd Edition have been included in **Appendix J**.

The net trips generated by the site are outlined in **Table 17**.

Table 17: Net Site Trips

Trip Generation	Land Use	Units/GFA	Weekday AM		Weekday PM		Saturday	
			In	Out	In	Out	In	Out
Site Generated Trips	Single Family Detached (LUC 210)	1,258	229	619	613	376	606	537
	Single Family Attached (LUC 215)	383	53	158	120	91	97	105
	Multifamily Attached (LUC 220)	362	34	106	112	69	67	110
	Strip Retail Plaza <40K (LUC 821)	10,000 ft ²	22	18	38	38	34	32
	Shopping Center >150 K (LUC 820)	700,000 ft ²	347	213	935	973	1309	1258
	Elementary School (520)	194 (Students)	76	65	14	17	-	-
	Total		760	1179	1832	1563	2113	2042
Internal Capture (NCHRP)	Single Family Detached (LUC 210)	1,258	5	6	191	68	264	96
	Single Family Attached (LUC 215)	383	1	2	37	16	42	19
	Multifamily Attached (LUC 220)	362	1	1	35	13	29	20
	Strip Retail Plaza <40K (LUC 821)	10,000 ft ²	1	0	4	10	3	8
	Shopping Center >150 K (LUC 820)	700,000 ft ²	8	6	93	253	131	327
	Total		15	15	360	360	470	470
Pass-By Trips	Shopping Center <150K (LUC 820)	700,000 ft ²	0	0	245	245	242	242
Net Generated Trips	Single Family Detached (LUC 210)	1,258	224	613	422	307	342	441
	Single Family Attached (LUC 215)	383	52	156	83	74	55	86
	Multifamily Attached (LUC 220)	362	33	105	77	56	38	90
	Strip Retail Plaza <40K (LUC 821)	10,000 ft ²	21	17	34	28	30	24
	Shopping Center >150 K (LUC 820)	700,000 ft ²	339	207	597	475	936	689
	Elementary School (520)	194 (Students)	76	65	14	17	0	0
Net Generated Trips			745	1164	1227	958	1401	1331

Therefore, the full buildout of the proposed development is expected to generate a total of 1,909 (754 inbound and 1 164 outbound), 2,185 (1227 inbound and 958 outbound) and 2,732 (1401 inbound and 1331 outbound) external trips during the weekday AM peak hour, weekday PM peak hour and Saturday peak hour, respectively.

4.6 Trip Distribution and Assignment

The Transportation Tomorrow Survey (TTS) is a comprehensive travel data survey conducted in the Greater Toronto and Hamilton Area. Data from the 2016 TTS was used to determine the peak hour trip distribution at the site.

The trip distribution calculations based on the TTS data are summarized in **Table 18**.

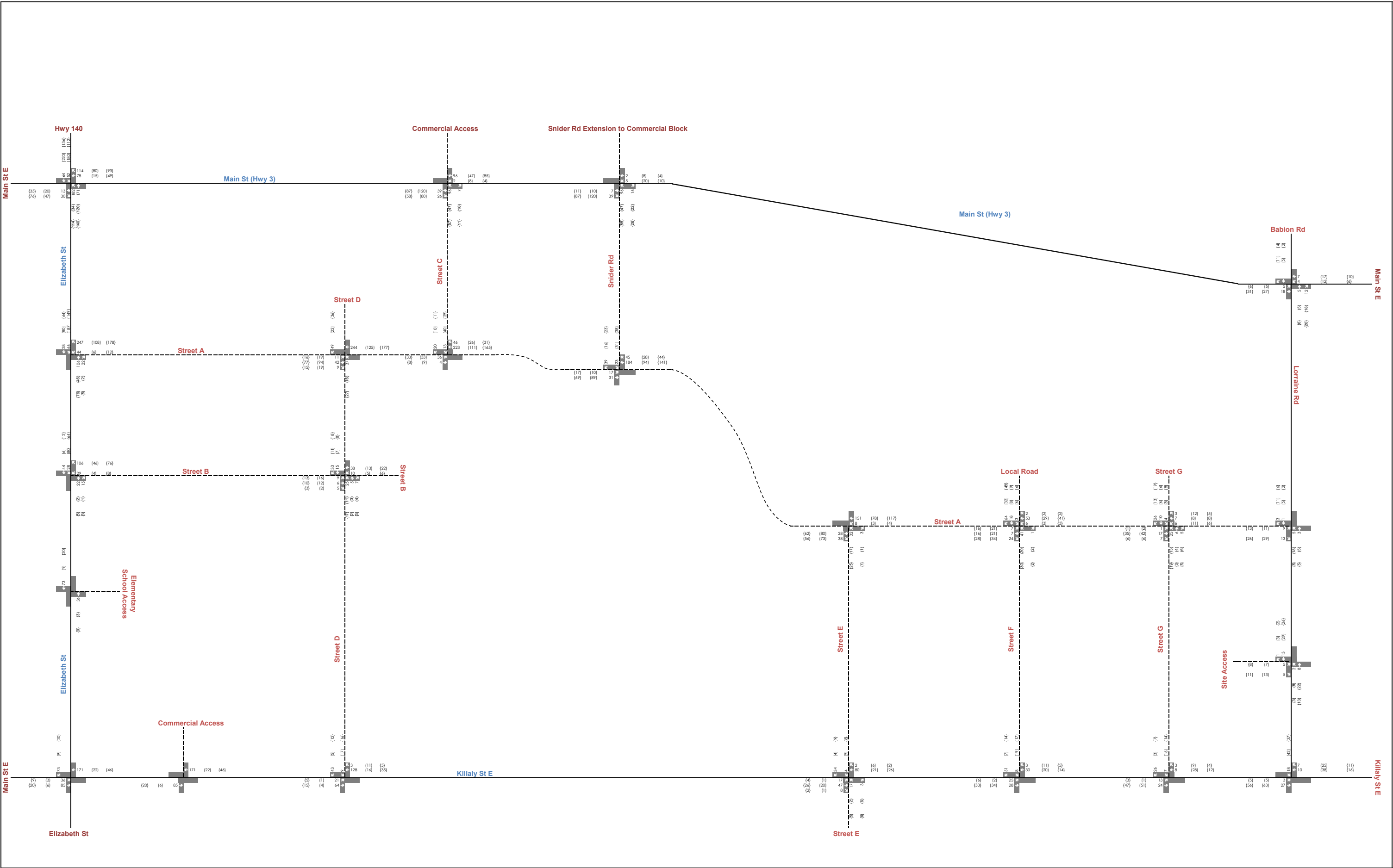
Trips generated by the residential, commercial and elementary school are illustrated in **Figure 14**, **Figure 15**, **Figure 16**, **Figure 17** and **Figure 18**, respectively.

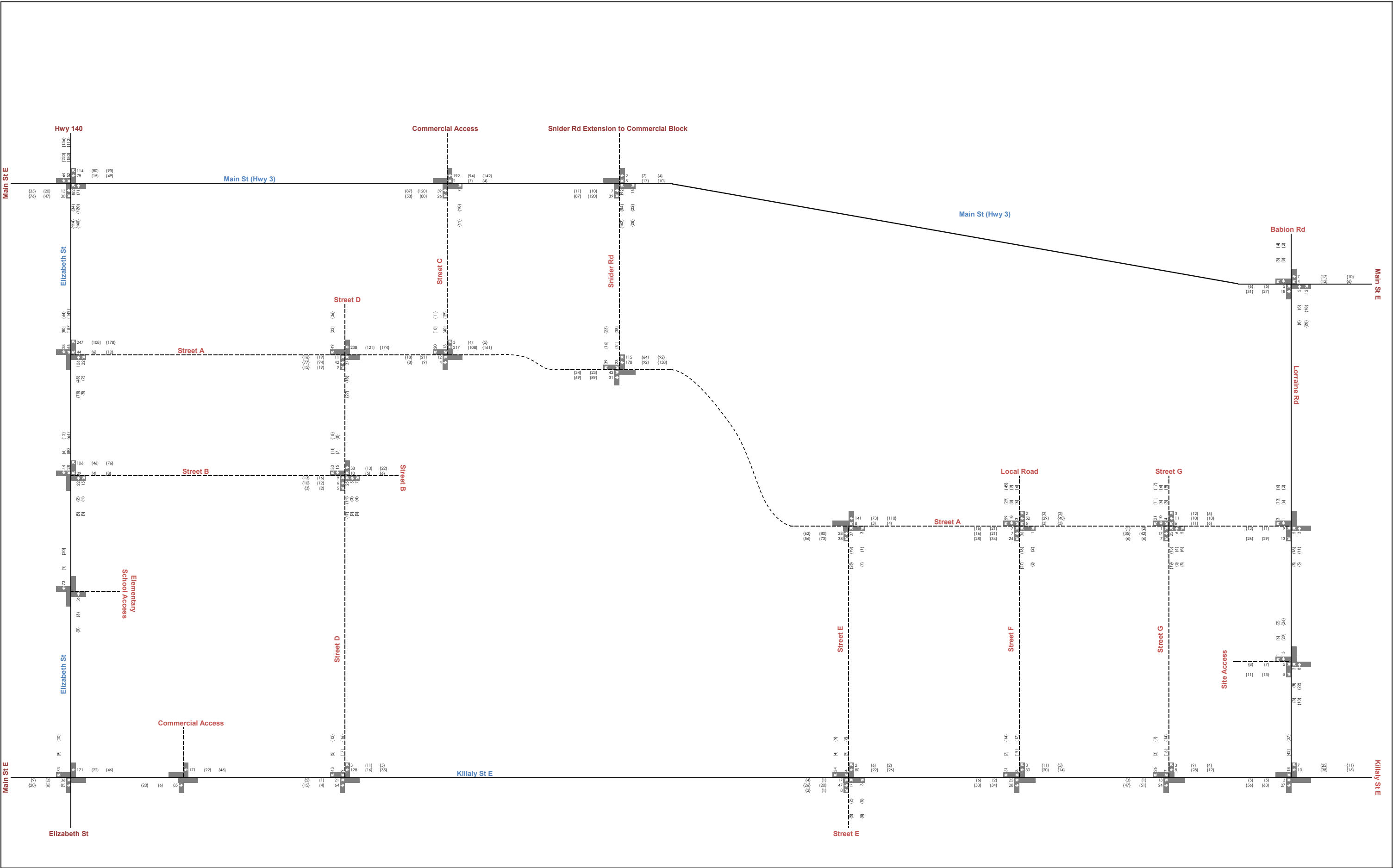
Appendix K provides the TTS query used to determine the site trip distribution.

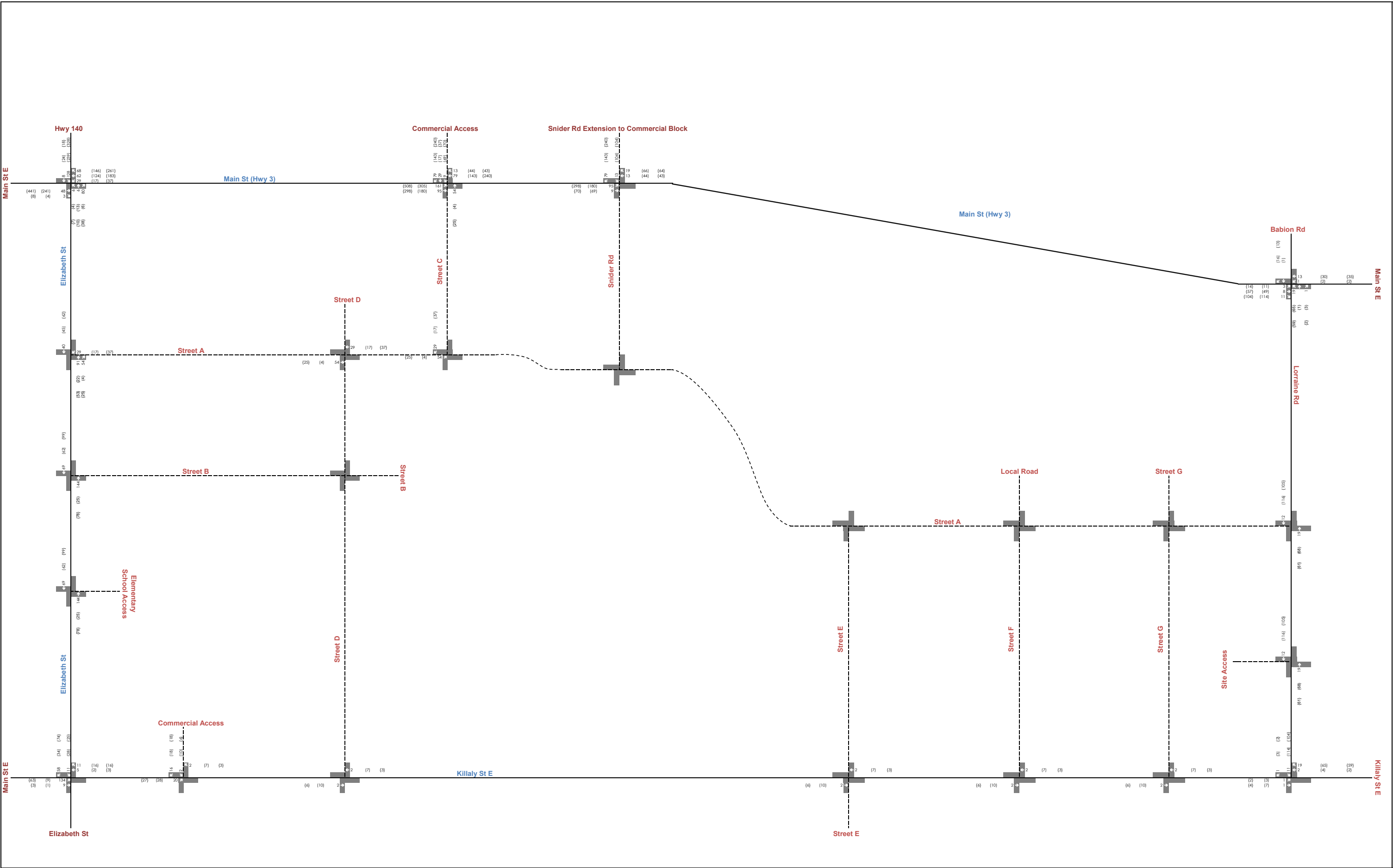
Table 18: Site Distribution

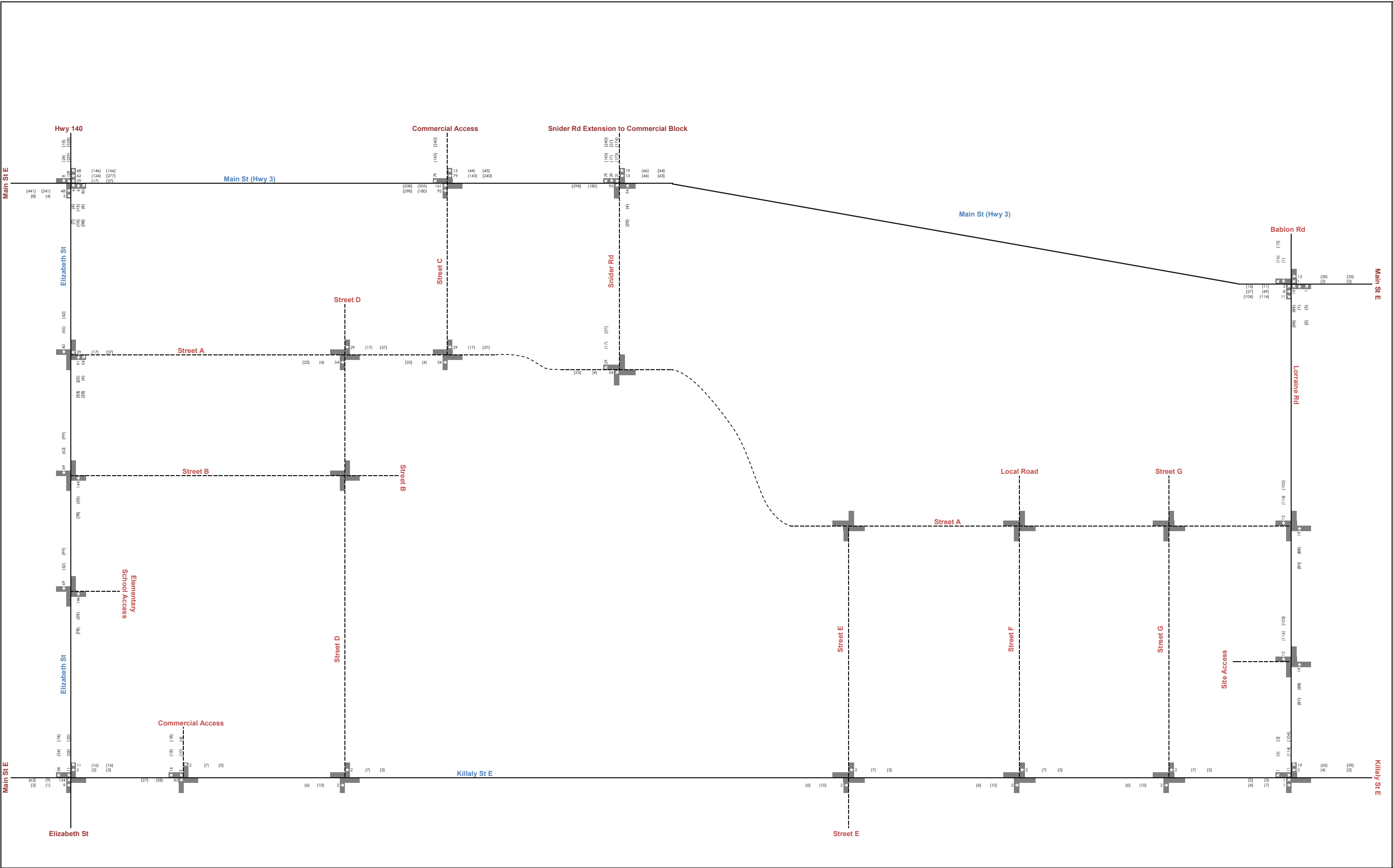
Direction	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour		Saturday Peak Hour	
	In	Out	In	Out	In	Out
Northwest	4%	0%	15%	11%	4%	0%
North	42%	31%	59%	26%	42%	31%
Northeast	0%	6%	8%	17%	0%	6%
East	0%	9%	10%	29%	0%	9%
Southeast	9%	0%	3%	1%	9%	0%
South	0%	0%	0%	0%	0%	0%
Southwest	31%	0%	0%	0%	31%	0%
West	14%	55%	6%	16%	14%	55%

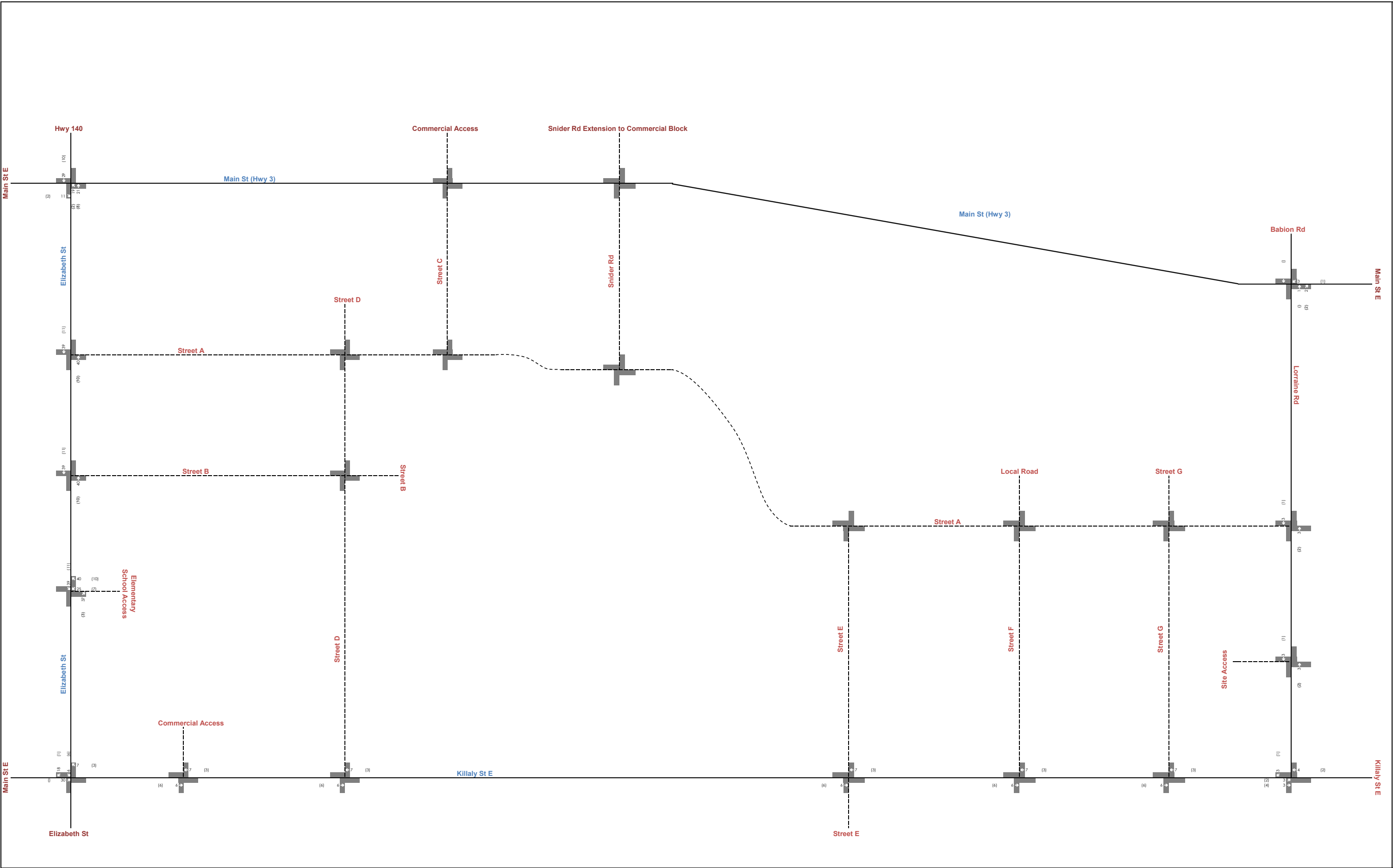
Internal trips between the commercial and residential uses were assigned based on logical routing and the shortest practical paths between the two land uses.











Legend		806 Killaly Street East		Figure 18	
(A.M.)	A.M. Peak Hour Traffic Volumes	Elementary School Trips		Project No. 2278-4995	
(P.M.)	P.M. Peak Hour Traffic Volumes			2/11/2025	
(Wk)	Weekend Peak Hour Traffic Volumes			Analyst: Aaron D	

5.0 Highway 3 Access Sensitivity

The site includes a commercial block north of Main Street East with an anticipated gross floor area of approximately 700,000 square feet. It is understood that primary site access to the northern commercial block will be provided via Snider Road, extended north of Main Street East. In addition, an additional access connection from Main Street East will be required to accommodate the expected traffic volumes resulting from both residential and commercial areas. It is also anticipated that number of internal trips from the residential area will be made to the commercial area for day-to-day needs.

These scenarios are considered essential to assess because the commercial development is expected to generate a total of approximately 920 left-turn trips during the Saturday peak hour. This volume would not be feasible to accommodate solely at the Snider Road and Main Street East intersection, making an additional site access necessary to adequately service both the commercial and residential uses.

Therefore, two access scenarios were assessed for a site access west of Snider Road along Main Street East, as outlined below:

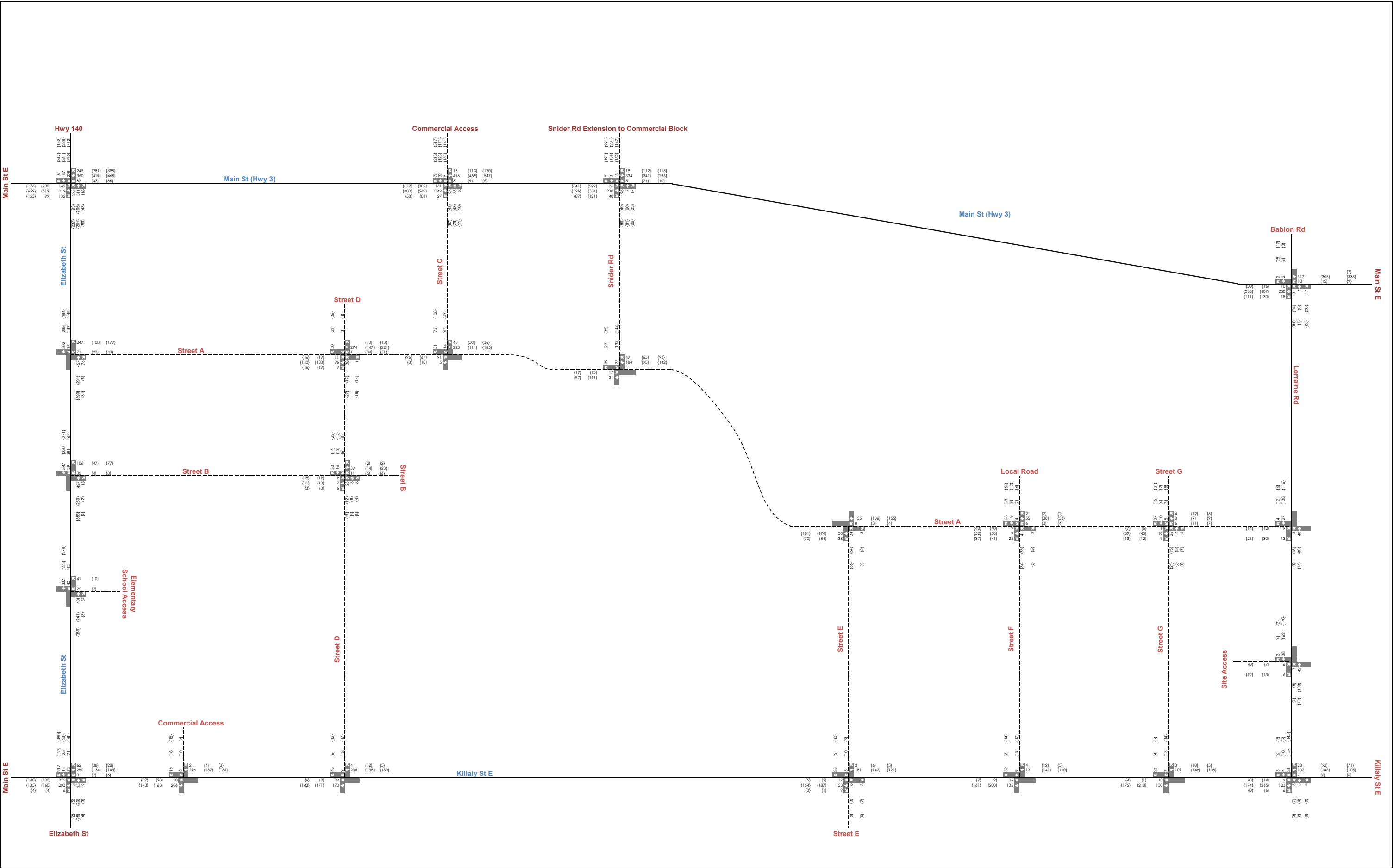
- Full-movement access west of Snider Road on Main Street East, forming a four-legged intersection with the residential site access south of Main Street East.
- Restricted-movement access (left-in/right-in/right-out) west of Snider Road on Main Street East, forming a four-legged intersection with the residential site access south of Main Street East.

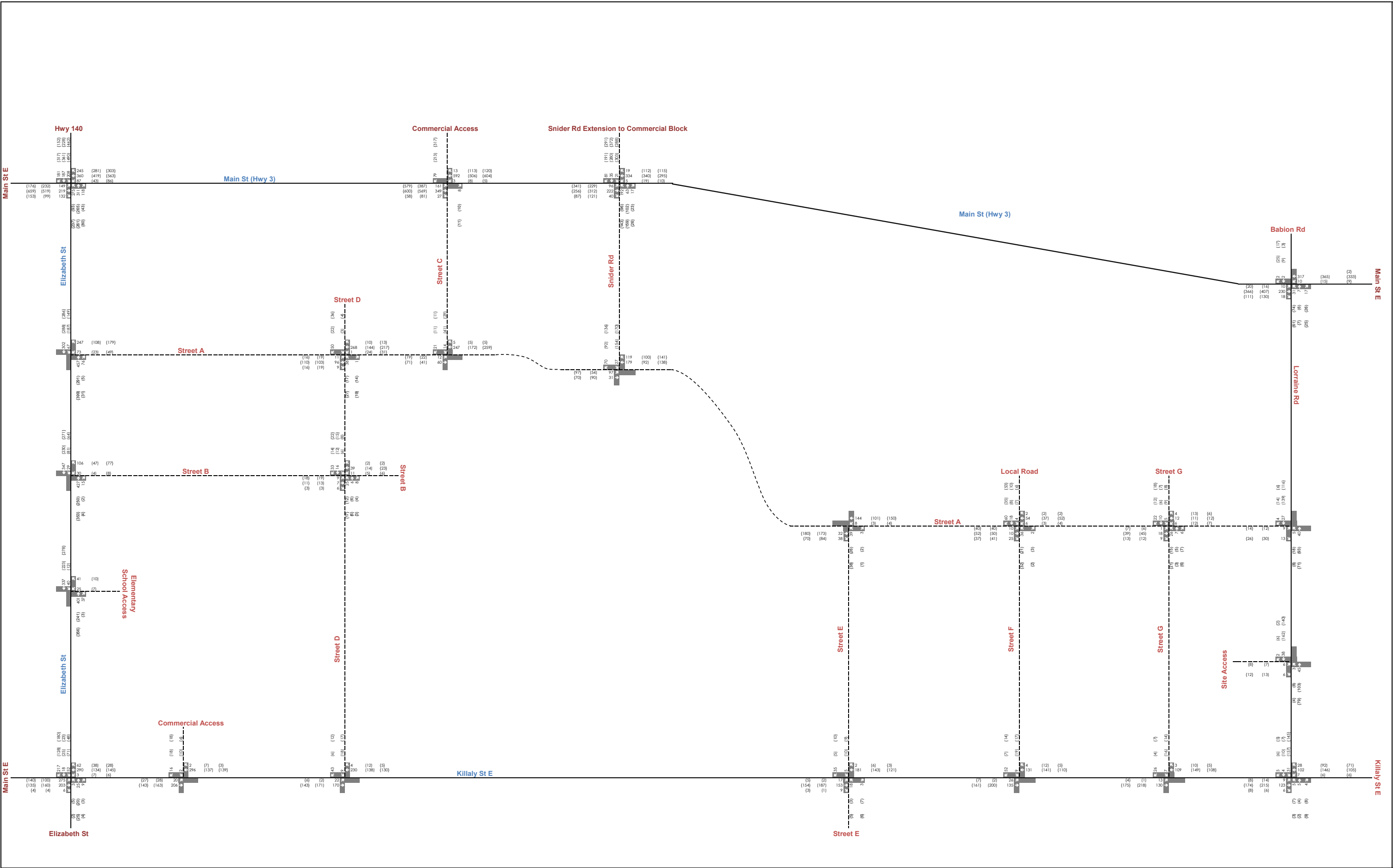
The trip distribution for the **two scenarios** outlined above will differ at the intersections of Main Street East & Street C/Commercial Access and Main Street East & Snider Road, as well as at the internal intersections of Street A with Street C and Street A with Snider Road.

Therefore, traffic operations for both intersections under the 2031 horizon have been analyzed to determine the most suitable scenario. The selected scenario will then be applied to the 2031, 2036, and 2041 future total traffic forecasts.

Figure 19 and **Figure 20** illustrate the 2031 future total traffic volumes for scenario 1 and 2, respectively.

It should be noted that the scenarios are first assessed for 2031 future total operations, and the scenario demonstrating the best performance will be carried forward for the 2036 and 2041 future total operations.





5.1 Scenario 1 – Full Moves Intersection at Main Street East & Street C/Commercial Access

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
Snider Road & Main St. E. (Highway 3) (Unsignalized)	Overall	E	F	F	43.4	Err	Err	0.60	Err	Err
	EBLTR	A	A	A	2.9	5.1	6.9	0.09	0.23	0.33
	WBLTR	A	A	A	0.1	0.6	0.3	0.00	0.02	0.01
	NBLTR	E	F	F	43.4	Err	Err	0.60	Err	Err
	SBLTR	B	F	F	13.7	Err	Err	0.20	7.42	Err
Street C/Commercial Access & Main St. E. (Highway 3) (Unsignalized)	Overall	F	F	F	562.2	Err	Err	1.99	Err	Err
	EBLTR	A	A	C	4.3	9.8	18.7	0.17	0.44	0.72
	WBLTR	A	A	A	0.1	0.3	18.7	0.00	0.01	0.01
	NBLTR	F	F	F	562.2	Err	0.2	1.99	Err	Err
	SBLTR	E	F	F	38.9	Err	Err	0.56	Err	Err
Street A & Snider Road (Unsignalized)	Overall	B	B	B	10.2	11.5	12.6	0.15	0.24	0.30
	EBLT	A	A	A	2.8	0.9	1.4	0.01	0.01	0.02
	WBTR	-	-	-	0.0	0.0	0.0	0.15	0.10	0.15
	SBTR	B	B	B	10.2	11.5	12.6	0.09	0.24	0.30
Street A & Street C (Unsignalized)	Overall	B	B	B	10.8	10.8	11.9	0.17	0.20	0.26
	EBLT	A	A	A	7.7	6.7	7.3	0.08	0.05	0.08
	WBTR	-	-	-	0.0	0.0	0.0	0.17	0.09	0.13
	SBTR	B	B	B	10.8	10.8	11.9	0.10	0.20	0.26

5.2 Scenario 2 – Left In/Right-In/Right-Out Intersection at Main Street East & Street C/Commercial Access

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
Snider Road & Main St. E. (Highway 3) (Unsignalized)	Overall	F	F	F	299.5	Err	Err	1.51	Err	Err
	EBLTR	A	A	A	2.9	5.2	7.0	0.09	0.23	0.33
	WBLTR	A	A	A	0.1	0.6	0.3	0.00	0.02	0.01
	NBLTR	F	F	F	299.5	Err	Err	1.51	Err	Err
	SBLTR	C	F	F	20.9	Err	Err	0.40	Err	Err
Street C/Commercial Access & Main St. E. (Highway 3) (Unsignalized)	Overall	B	C	E	14.4	18.6	40.5	0.19	0.47	0.81
	EBLTR	A	B	C	4.6	10.6	21.4	0.19	0.46	0.76
	WBLTR	A	A	A	0.1	0.3	0.2	0.00	0.01	0.01
	NBLTR	B	B	B	10.6	13.0	13.2	0.01	0.02	0.03
	SBLTR	B	C	E	14.4	18.6	40.5	0.18	0.47	0.81
Street A & Snider Road (Unsignalized)	Overall	B	B	C	11.4	13.6	19.0	0.19	0.39	0.57
	EBLT	A	A	A	6.4	3.1	5.0	0.08	0.04	0.08
	WBTR	-	-	-	0.0	0.0	0.0	0.19	0.12	0.18
	SBTR	B	B	C	11.4	13.6	19.0	0.16	0.39	0.57
Street A & Street C (Unsignalized)	Overall	B	B	B	10.4	10.4	11.1	0.16	0.11	0.17
	EBLT	A	A	A	1.4	2.8	1.8	0.01	0.02	0.02
	WBTR	-	-	-	0.0	0.0	0.0	0.16	0.11	0.17
	SBTR	B	B	B	10.4	10.4	11.1	0.05	0.08	0.07

5.3 Sensitivity Summary

Based on the sensitivity analysis of site accesses along Main Street East, it is evident that the intersection of Main Street East and Snider Road would require signalization due to the high traffic volumes. Signalization is expected to improve intersection operations and accommodate projected future traffic.

The full-movement access west of the Main Street East & Street C/Commercial Access intersection would result in poor operations on the northbound and southbound approaches because of high eastbound and westbound volumes and limited gaps for left turns. However, a left-in access at this location is necessary to accommodate the significant left-turn volumes into the commercial area. The intersection of Main Street East & Snider Road alone would not be sufficient to handle all turning movements generated by the community.

Therefore, a left-in/right-in/right-out access is recommended for the residential area to the south and the commercial area to the north, located on Main Street East west of Snider Road along with signalization of Main Street East and Snider Road.

The detailed capacity analysis for sensitivity scenario is provided in **Appendix L**.

5.3.1 Signal Warrant

Per the 2031 future total intersection analysis, signal warrants per the Ontario Traffic Manual (OTM) Book 12, Justification 7 (Projected Volumes) were conducted for the intersection of Main Street and Snider Road with the projected 2031 future total volumes for scenario 2.

The justification met the 150% requirements and therefore a signal would be warranted.

Signal warrant is provided in **Appendix M**.

The signalized intersection operations are provided in **Table 19** below:

Table 19: Main Street East/Snider Road Signalized Intersection Operations

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
	Overall	B	C	D	18.1	25.5	40.9	0.57	0.88	0.93
	EBL	A	B	C	9.2	19.4	32.0	0.24	0.64	0.82
	EBT	B	B	B	10.5	14.7	17.3	0.30	0.46	0.41
	EBR	A	A	A	2.8	2.6	2.8	0.06	0.19	0.13
	WBL	B	B	C	11.6	15.8	25.3	0.01	0.06	0.04
	WBT	C	C	D	20.2	27.9	46.4	0.57	0.67	0.75
	WBR	A	A	B	0.1	5.3	10.9	0.04	0.22	0.25
	NBL	C	C	E	30.8	24.9	66.5	0.57	0.42	0.83
	NBTR	C	C	E	27.1	33.7	66.5	0.28	0.46	0.78
	SBL	C	D	E	20.5	49.6	57.7	0.07	0.88	0.89
	SBT	C	D	E	29.7	40.8	70.6	0.12	0.72	0.93
	SBR	A	A	A	9.4	7.6	7.1	0.28	0.46	0.53

6.0 Future Internal Road Network Review

The proposed development will introduce new site accesses connecting to the surrounding road network, as well as an internal road network consisting of three-leg and four-leg intersections. This section reviews the proposed site accesses and key internal intersections to confirm their ability to accommodate future traffic operations.

6.1 Proposed Road Network

The development proposes a network of collector and local roads designed to accommodate traffic generated by the site and provide connectivity to the adjacent road network. The proposed roadway right-of-way (ROW) widths are as follows:

- **Collector Roads:** 23 m ROW
- **Local Roads:** 18 m ROW

The proposed street classifications are summarized in the **Table 20**.

Table 20: Road Classification

Street	Classification	ROW (m)
Snider Road	Collector	23
Street 'A'	Collector	23
Street 'B'	Collector	23
Street 'C'	Collector	23
Street 'F'	Collector	23
Street 'D'	Local	18
Street 'E'	Local	18
Street 'G'	Local	18

Street 'A' is proposed as an east-west collector road that runs through the centre of the development and provides connectivity to adjacent roadways. Snider Road and Street 'C' provide connections to the north and integrate the development with the existing road network. The road layout has been designed to consider the adjacent environmental protection area, minimizing impacts while maintaining appropriate network connectivity and circulation.

6.2 Intersection Control

The proposed site access intersections on Elizabeth Street, Killaly Street East, Lorraine Road, and Main Street East are planned to operate under stop control, with stop signs provided on the minor street approaches. The intersection of Snider Road and Main Street East is proposed to be signalized.

Signal timing for the proposed signalized intersection has been developed in accordance with the Ontario Traffic Manual (OTM), Book 12 and is intended to accommodate the forecast traffic volumes associated with the proposed development.

All internal intersections within the development are proposed to operate with stop control on the minor approaches. The selection of intersection control has been based on projected traffic volumes, operational requirements, and applicable design guidelines. The proposed intersection controls are anticipated to provide safe and efficient traffic operations while maintaining acceptable levels of service and not exceeding intersection capacity.

A summary of the proposed intersection controls is provided in **Table 21**.

Table 21: Proposed Intersection Control

Intersection	Major Approach	Minor Approach	Control
Elizabeth Street & Street A	Elizabeth Street	Street A	Stop Control on Street A
Elizabeth Street & Street B	Elizabeth Street	Street B	Stop Control on Street B
Elizabeth Street & Elementary School Access	Elizabeth Street	Elementary School Access	Stop Control on School Access
Killaly Street E & Commercial Access	Killaly Street East	Commercial Access	Stop Control on Commercial Access
Killaly Street E & Street D	Killaly Street E	Street D	Stop Control on Street D
Killaly Street E & Street E	Killaly Street E	Street E	Stop Control on Street E
Killaly Street E & Street F	Killaly Street E	Street F	Stop Control on Street F
Killaly Street E & Street G	Killaly Street E	Street G	Stop Control on Street G
Lorrain Road & Local Road Access	Lorrain Road	Local Road Access	Stop Control on Local Road Access
Lorrain Road & Street A	Lorrain Road	Street A	Stop Control on Street A
Main Street E & Street C/Commercial Access	Main Street E	Street C/Commercial Access	Stop Control on Street C/Commercial Access
Street A & Street C	Street A	Street C	Stop Control on Street C
Snider Road & Street A	Street A	Snider Road	Stop Control on Snider Road
Street A & Street D	Street A	Street D	Stop Control on Street D
Street A & Street E	Street A	Street E	Stop Control on Street E
Street A & Street F	Street A	Street F	Stop Control on Street F
Street A & Street G	Street A	Street G	Stop Control on Street G
Street B & Street D	Street B	Street D	Stop Control on Street D

6.3 Auxiliary Lane Warrants

Turning lanes are not proposed for internal intersections within the development, as forecast traffic volumes operated well with the shared approach are expected to operate well without auxiliary lanes.

As per the *MTO Design Supplement for the TAC Geometric Design Guide (GDG) for Canadian Roads – 2017*, dated October 2023, left-turn lanes should generally be considered and provided on all highway approaches at signalized intersections, regardless of whether the left-turn warrants are met, unless left turns are prohibited by geometrics (e.g., T-intersections) or traffic regulations (e.g., one-way streets).

In accordance with the *MTO Traffic Signal Timing Policy*, the length of a storage lane should be sufficient to accommodate arriving vehicles for 95% of cycles. Therefore, the proposed storage lengths for Main Street East and Snider Road have been designed to meet the 95th percentile queue lengths.

Right-turn lanes have been designed in accordance with TAC GDGCR Guidelines, Section 9.14. Storage lengths have been calculated using Equation 9.14.1, and tapers have been provided as per Table 9.14.2. Storage for the westbound right-turn movement has been provided to accommodate queuing constraints due to driveway spacing east of the intersection of Main Street East and Snider Road.

Left-turn warrants for the unsignalized intersection of Main Street East and Street C / Commercial Access were conducted for the eastbound left-turn movement, with the Saturday peak hour identified as critical:

- Volume Advancing: 1,317 vph
- Volume Opposing: 813 vph
- Left-turn % of Advancing Volume: 44%

A minimum storage length of 80 metres is recommended as per Exhibit 9A-18; however, based on observed queues, a storage length of 105 metres has been provided to accommodate the 95th percentile queues.

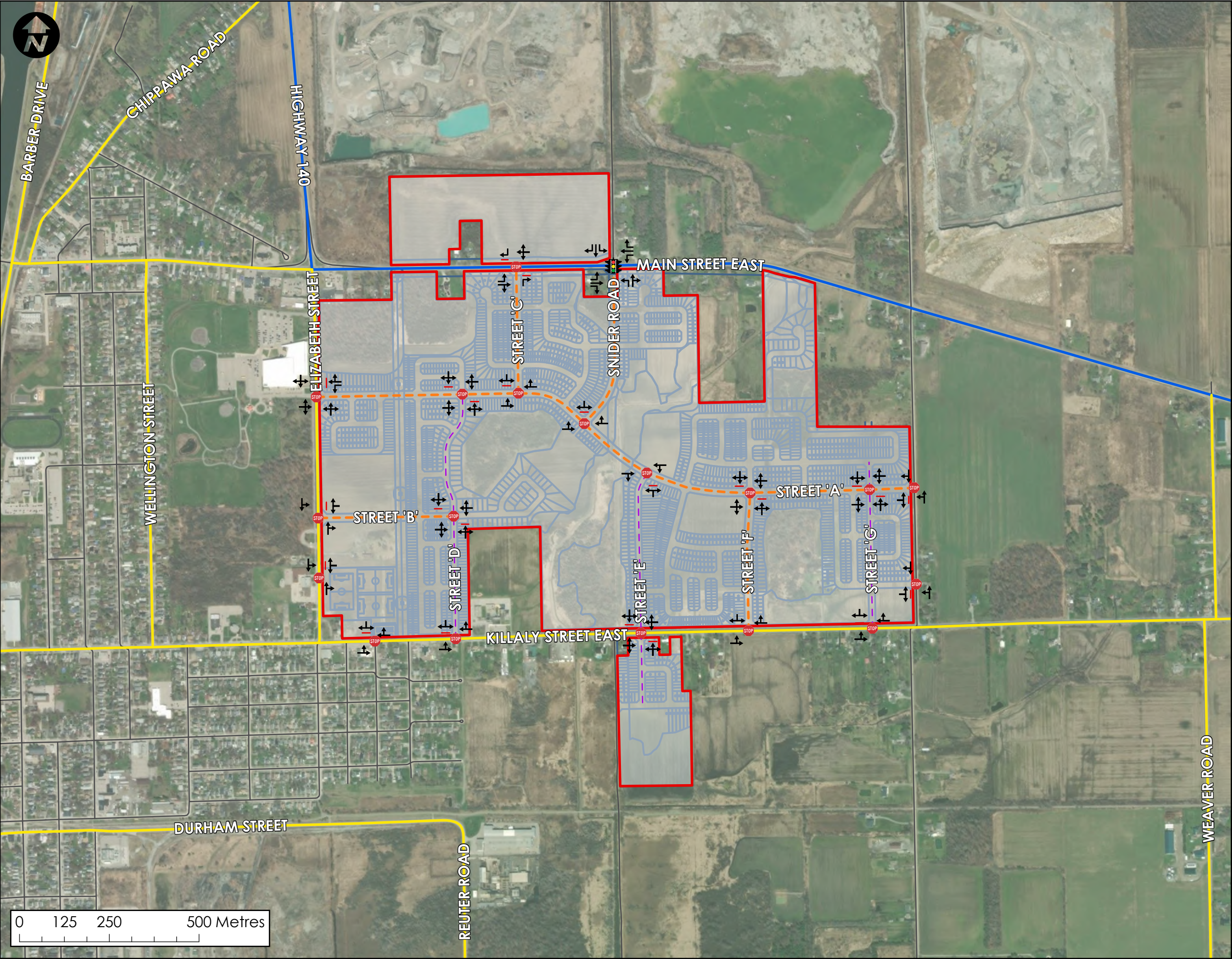
The left-turn Lane warrants are provided in **Appendix L**.

Auxiliary lanes are proposed at select new public intersections to accommodate turning movements. The proposed storage and taper lengths are summarized in **Table 22**.

Table 22: Auxiliary Lanes

Intersection	Movement	Storage Length (m)	Taper (m)
Main Street East & Snider Road	EBL	105	50
	EBR	60	55
	WBL	20	50
	WBR	30	20
	NBL	60	30
	SBL	110	30
	SBR	80	35
Street C/Commercial Access & Main Street East	EBL	105	50

Note: All auxiliary lanes have been proposed in accordance with TAC GDGCR Guidelines, MTO Guidelines or Synchro observed queues.



KEY PLAN

LEGEND

SITE BOUNDARY

CONCEPT PLAN (01/29/2026)

INTERSECTION

SIGNALIZED INTERSECTION

STOP CONTROLLED INTERSECTION

STOP CONTROLLED INTERSECTION (ALL-WAY)

EXISTING ROAD

LOCAL

HIGHWAY

ARTERIAL

PROPOSED ROAD

COLLECTOR

LOCAL

806 KILLALY STREET EAST
FIGURE 21 - FUTURE
STUDY ROAD NETWORK



BASE MAP SOURCE: Vantor, City of Welland, Niagara Region, Regional Municipality of Niagara, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

7.0 Future Total Conditions

This section discusses the projected future total traffic conditions and traffic operations at the study intersections with the addition of the site generated trips by the proposed development and the background developments in the vicinity of the subject site for the horizon years 2031, 2036 and 2041.

The internal and external intersection operations are summarized separately, as the projected growth rates for the 2031, 2036, and 2041 horizon years are not expected to impact the internal intersections.

7.1 Internal Intersection Operations

This section outlines the internal intersection operations resulting from site-generated traffic. **Table 23** summarizes the future traffic operations, and **Table 24** outlines the projected queues.

As summarized below, the internal intersections are anticipated to operate well within capacity. With stop control on the minor approaches, acceptable levels of service and minimal delay are expected under future traffic conditions.

It should also be noted that no auxiliary lane warrants are considered necessary at this time; however, they will be reviewed further as part of future Draft Plan of Subdivision applications.

The detailed capacity analysis for internal intersections is provided in **Appendix O**.

Table 23: Future Internal Intersection Traffic Operations

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
Street A & Snider Road (Unsignalized)	Overall	B	B	C	11.4	13.6	19.0	0.19	0.39	0.57
	EBLT	A	A	A	6.4	3.1	5.0	0.08	0.04	0.08
	WBTR	-	-	-	0.0	0.0	0.0	0.19	0.12	0.18
	SBTR	B	B	C	11.4	13.6	19.0	0.16	0.39	0.57
Street E & Street A (Unsignalized)	Overall	A	B	B	10.0	10.8	11.4	0.06	0.16	0.16
	EBTR	-	-	-	0.0	0.0	0.0	0.04	0.16	0.16
	WBLT	A	A	A	0.4	0.2	0.2	0.01	0.00	0.00
	NBTR	A	B	B	10.0	10.8	11.4	0.06	0.05	0.07
Street A & Street C (Unsignalized)	Overall	B	B	B	10.4	10.4	11.1	0.16	0.11	0.17
	EBLT	A	A	A	1.4	2.8	1.8	0.01	0.02	0.02
	WBTR	-	-	-	0.0	0.0	0.0	0.16	0.11	0.17
	SBTR	B	B	B	10.4	10.4	11.1	0.05	0.08	0.07
Street D & Street A (Unsignalized)	Overall	B	B	B	13.6	10.8	12.1	0.09	0.05	0.09
	EBLTR	A	A	A	0.8	1.1	1.0	0.01	0.01	0.01
	WBLTR	A	A	A	0.0	1.1	1.1	0.00	0.02	0.02
	NBLTR	B	B	B	13.6	10.8	12.1	0.09	0.05	0.09
	SBLTR	B	A	B	10.2	9.5	10.1	0.07	0.03	0.06
Street F & Street A (Unsignalized)	Overall	B	B	B	10.4	10.5	11.3	0.10	0.06	0.08
	EBLTR	A	A	A	1.7	2.4	2.4	0.01	0.03	0.03
	WBLTR	A	A	A	0.8	0.5	0.5	0.00	0.00	0.00
	NBLTR	B	B	B	10.4	10.5	11.3	0.06	0.04	0.06
	SBLTR	A	A	A	9.3	9.3	9.4	0.10	0.06	0.08
Street G & Street A (Unsignalized)	Overall	A	A	A	9.3	9.4	9.4	0.05	0.03	0.04
	EBLTR	A	A	A	0.2	0.8	0.9	0.00	0.00	0.01
	WBLTR	A	A	A	2.1	2.5	2.1	0.00	0.01	0.01
	NBLTR	A	A	A	9.3	9.4	9.4	0.05	0.03	0.04
	SBLTR	A	A	A	8.9	9.2	9.0	0.04	0.03	0.04
Street D & Street B (Unsignalized)	Overall	A	A	A	9.6	9.3	9.5	0.06	0.04	0.05
	EBLTR	A	A	A	3.0	4.1	4.2	0.01	0.01	0.01
	WBLTR	A	A	A	1.7	1.7	1.5	0.01	0.00	0.00
	NBLTR	A	A	A	9.6	9.3	9.5	0.05	0.03	0.03
	SBLTR	A	A	A	9.1	9.1	9.2	0.06	0.04	0.05

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/c ratios of 0.85 and greater than 0.85 are bolded and greater than 1.00 are bolded with red text..

7.2 External Intersection Operations

This section discusses the projected future total traffic conditions and traffic operations at the external study intersections with the addition of the site generated trips by the proposed development and the background developments in the vicinity of the subject site for the horizon years 2031, 2036 and 2041. This review represents a conservative estimate and includes more commercial square footage than is expected on site.

7.2.1 2031 Future Total Operations

Table 24 outlines the 2031 future total conditions traffic operations at the signalized and unsignalized intersections and **Table 25** outlines the 2031 future total queues.

Under 2031 future total conditions, the intersection of Highway 140/Elizabeth Street and Main Street East is forecast to operate with poor overall performance. The eastbound left-turn movement is forecast to operate at LOS F, with average delays of 110.8 seconds and 220.3 seconds and volume-to-capacity (v/c) ratios of 1.09 and 1.35 during the weekday PM and Saturday peak hours, respectively. The westbound left-turn movement during the Saturday peak hour is also forecast to operate at LOS F, with an average delay of 124.4 seconds and operations at capacity.

The southbound left-turn movement is forecast to operate at LOS F, with average delays of 96.0 seconds, 531.8 seconds, and 566.6 seconds and corresponding v/c ratios of 1.02, 2.11, and 2.18 during the weekday AM, weekday PM, and Saturday peak hours, respectively. The forecasted 50th and 95th percentile queues for the southbound left-turn movement are expected to exceed available storage during the weekday PM and Saturday peak hours.

The intersection of Main Street East and Snider Road is forecast to operate with a maximum v/c ratio of 0.93, reflecting high turning volumes at the intersection. The shared southbound left/through/right movement is anticipated to operate at LOS F during the weekday PM peak hour and is forecast to operate slightly above capacity.

The site accesses along the surrounding road network are anticipated to operate well with no significant delays anticipated.

Appendix P contains the 2031 future total conditions detailed capacity analysis.

Figure 22 shows the 2031 future total traffic volumes.

Table 24: 2031 Future Total Intersection Operations

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
Elizabeth Street/Highway 140 & Main St. E. (Highway 3) (Signalized)	Overall	C	F	F	30.6	110.5	134.9	1.02	2.11	2.18
	EBL	D	F	F	41.5	110.8	220.3	0.74	1.09	1.35
	EBT	B	D	F	19.7	42.6	110.3	0.45	0.91	1.15
	EBR	A	A	A	4.4	4.1	4.0	0.29	0.20	0.29
	WBL	B	B	F	17.8	19.0	124.4	0.29	0.26	1.00
	WBT	C	C	E	31.2	29.6	69.1	0.77	0.76	1.03
	WBR	A	A	B	5.6	6.8	11.0	0.48	0.51	0.57
	NBL	D	C	D	36.3	26.3	41.7	0.76	0.44	0.78
	NBTR	D	C	C	38.0	29.0	32.5	0.85	0.69	0.76
	SBL	F	F	F	96.0	531.8	566.4	1.02	2.11	2.18
	SBT	B	C	C	17.6	27.3	21.3	0.30	0.66	0.42
	SBR	A	B	A	5.3	12.8	5.5	0.38	0.66	0.36
Snider Road & Main St. E. (Highway 3) (Signalized)	Overall	B	C	D	18.1	25.5	40.9	0.57	0.88	0.93
	EBL	A	B	C	9.2	19.4	32.0	0.24	0.64	0.82
	EBT	B	B	B	10.5	14.7	17.3	0.30	0.46	0.41
	EBR	A	A	A	2.8	2.6	2.8	0.06	0.19	0.13
	WBL	B	B	C	11.6	15.8	25.3	0.01	0.06	0.04
	WBT	C	C	D	20.2	27.9	46.4	0.57	0.67	0.75
	WBR	A	A	B	0.1	5.3	10.9	0.04	0.22	0.25
	NBL	C	C	E	30.8	24.9	66.5	0.57	0.42	0.83
	NBTR	C	C	E	27.1	33.7	66.5	0.28	0.46	0.78
	SBL	C	D	E	20.5	49.6	57.7	0.07	0.88	0.89
	SBT	C	D	E	29.7	40.8	70.6	0.12	0.72	0.93
	SBR	A	A	A	9.4	7.6	7.1	0.28	0.46	0.53
Lorraine Road/Babion Road & Main St. E. (Highway 3) (Unsignalized)	Overall	B	D	C	14.2	28.4	21.2	0.13	0.43	0.31
	EBLT	A	A	A	0.4	0.5	0.6	0.01	0.01	0.02
	EBR	-	-	-	0.0	0.0	0.0	0.01	0.08	0.07
	WBLT	A	A	A	0.3	0.5	0.3	0.01	0.02	0.01
	WBR	-	-	-	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	B	D	C	14.2	28.4	21.2	0.13	0.43	0.31
	SBLTR	B	B	B	12.4	14.2	11.8	0.01	0.09	0.04

Killaly St. E & Lorraine Road (Unsignalized)	Overall	B	C	B	10.9	17.6	14.2	0.07	0.40	0.30
	EBLTR	A	A	A	0.6	0.6	0.4	0.01	0.01	0.01
	WBLTR	A	A	A	0.4	0.3	0.3	0.01	0.01	0.01
	NBLTR	B	B	B	10.4	11.7	10.1	0.02	0.04	0.02
	SBLTR	B	C	B	10.9	17.6	14.2	0.07	0.40	0.30
Elizabeth Street & Killaly St. E (Unsignalized)	Overall	F	C	C	90.5	16.3	16.3	1.01	0.43	0.46
	EBLTR	A	A	A	6.4	3.4	4.5	0.26	0.08	0.11
	WBLTR	A	A	A	0.1	0.4	0.3	0.00	0.01	0.00
	NBLTR	E	C	C	37.6	15.6	16.3	0.27	0.08	0.09
	SBLTR	F	C	C	90.5	16.3	16.1	1.01	0.43	0.46
Elizabeth Street & Street A (Unsignalized)	Overall	D	D	D	26.5	25.2	29.3	0.49	0.19	0.32
	WBL	D	D	D	26.5	25.2	29.3	0.32	0.12	0.26
	WBR	C	B	B	17.9	10.9	13.7	0.49	0.16	0.32
	NBTR	-	-	-	0.0	0.0	0.0	0.34	0.19	0.28
	SBLT	A	A	A	2.3	4.4	4.1	0.07	0.16	0.15
Elizabeth Street & Street B (Unsignalized)	Overall	C	B	B	15.7	10.5	12.1	0.31	0.16	0.23
	WBTR	C	B	B	15.7	10.5	12.1	0.31	0.08	0.15
	NBTR	-	-	-	0.0	0.0	0.0	0.28	0.16	0.23
	SBLT	A	A	A	1.0	2.6	2.1	0.03	0.07	0.06
Elizabeth Street & Elementary School Access (Unsignalized)	Overall	B	B	A	15.0	10.9	0.0	0.28	0.16	0.23
	WBTR	B	B	A	15.0	10.9	0.0	0.17	0.03	0.00
	NBTR	-	-	-	0.0	0.0	0.0	0.28	0.16	0.23
	SBLT	A	A	-	1.3	0.5	0.0	0.04	0.01	0.00
Killaly St. E & Commercial Access (Unsignalized)	Overall	B	A	A	10.5	9.9	9.6	0.19	0.09	0.09
	EBLT	A	A	A	0.9	1.3	1.3	0.02	0.02	0.02
	WBTR	-	-	-	0.0	0.0	0.0	0.19	0.09	0.09
	SBTR	B	A	A	10.5	9.9	9.6	0.03	0.04	0.03
Killaly St. E & Street D (Unsignalized)	Overall	B	B	A	10.4	10.4	10.0	0.15	0.10	0.09
	EBLT	A	A	A	1.0	0.1	0.4	0.02	0.00	0.00
	WBTR	-	-	-	0.0	0.0	0.0	0.15	0.10	0.09
	SBTR	B	B	A	10.4	10.4	10.0	0.08	0.04	0.04

Killaly St. E & Street F (Unsignalized)	Overall	A	B	A	9.6	10.6	9.9	0.09	0.10	0.07
	EBLT	A	A	A	1.3	0.1	0.4	0.02	0.00	0.01
	WBTR	-	-	-	0.0	0.0	0.0	0.09	0.10	0.07
	SBTR	A	B	A	9.6	10.6	9.9	0.08	0.04	0.04
Killaly St. E & Street G (Unsignalized)	Overall	A	B	A	9.3	10.8	10.0	0.07	0.10	0.07
	EBLT	A	A	A	0.7	0.0	0.2	0.01	0.00	0.00
	WBTR	-	-	-	0.0	0.0	0.0	0.07	0.10	0.07
	SBTR	A	B	A	9.3	10.8	10.0	0.04	0.03	0.03
Street E & Killaly St. E (Unsignalized)	Overall	B	B	A	12.2	10.7	9.9	0.05	0.02	0.03
	EBLTR	A	A	A	0.8	0.1	0.2	0.01	0.00	0.00
	WBLTR	-	-	-	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	B	A	A	12.2	9.9	9.9	0.04	0.01	0.02
	SBLTR	A	B	A	9.8	10.7	9.9	0.05	0.02	0.03
Lorraine Road & Site Access (Unsignalized)	Overall	A	A	A	8.8	9.7	9.5	0.03	0.11	0.09
	EBTR	A	A	A	8.8	9.7	9.5	0.01	0.03	0.03
	NBLT	A	A	A	0.4	0.6	0.4	0.00	0.01	0.00
	SBTR	-	-	-	0.0	0.0	0.0	0.03	0.11	0.09
Lorraine Road & Street A (Unsignalized)	Overall	A	A	A	8.7	9.7	9.4	0.02	0.10	0.08
	EBTR	A	A	A	8.7	9.7	9.4	0.02	0.06	0.05
	NBLT	A	A	A	0.8	1.3	0.8	0.00	0.01	0.01
	SBTR	-	-	-	0.0	0.0	0.0	0.02	0.10	0.08
Street C/Commercial Access & Main St. E. (Highway 3) (Unsignalized)	Overall	B	C	E	13.7	17.4	35.7	0.24	0.48	0.82
	EBL	B	B	D	10.0	12.8	27.0	0.20	0.48	0.82
	EBTR	-	-	-	0.0	0.0	0.0	0.24	0.42	0.42
	WBLTR	A	A	A	0.1	0.3	0.2	0.00	0.01	0.01
	NBR	B	B	B	10.6	13.0	13.2	0.01	0.02	0.03
	SBR	B	C	E	13.7	17.4	35.7	0.17	0.45	0.77

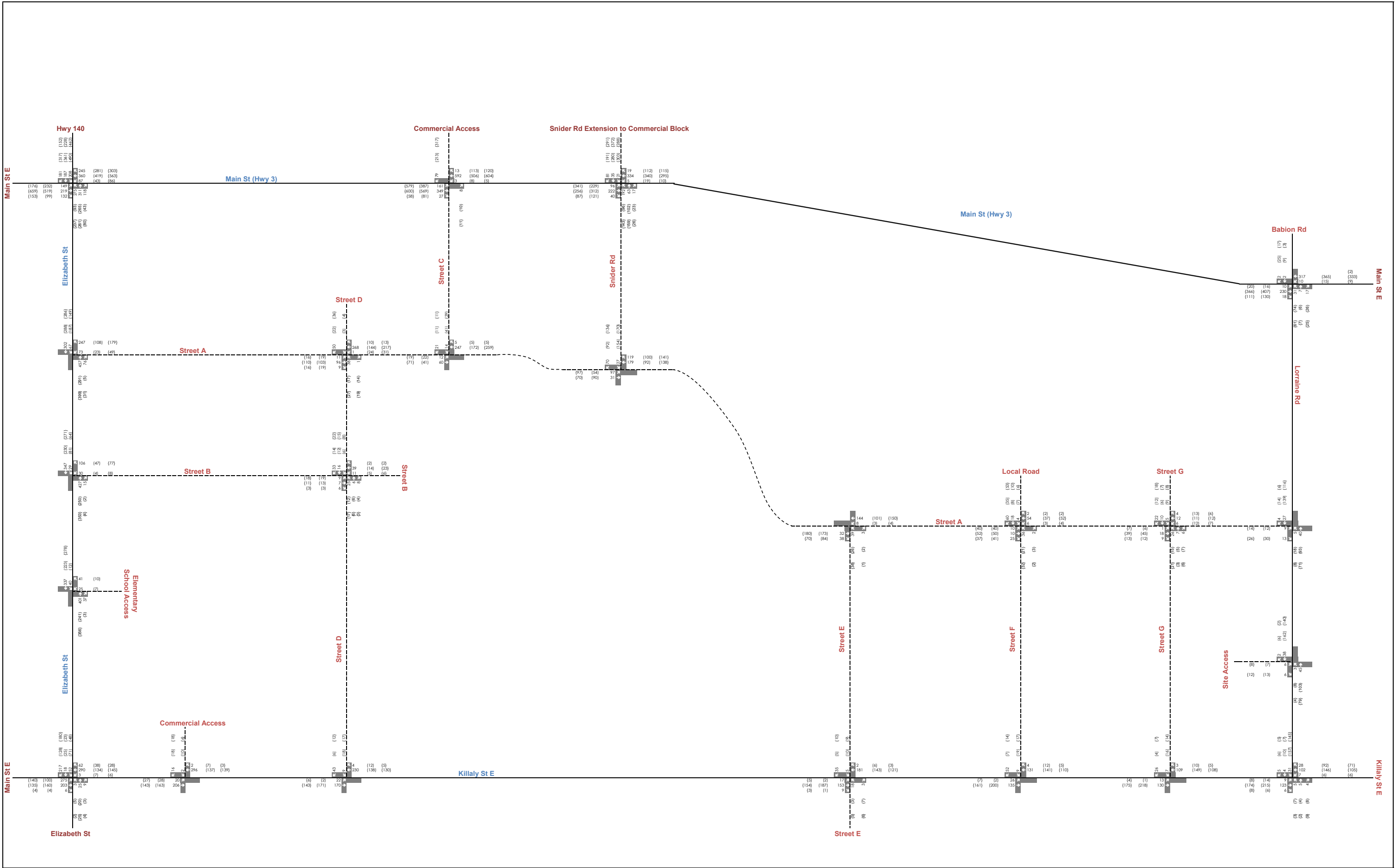
Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/c ratios of 0.85 and greater than 0.85 are bolded and greater than 1.00 are bolded with red text.

The critical v/c threshold for intersections with Regional Roads and provincial Roads (Highway 140 & Highway 3) is 0.85 for all movements per Niagara Region and MTO guidelines..

Table 25: 2031 Future Total Conditions Queuing Assessment

Intersection	Performance Metrics				
	Movement	95 th Percentile Queue Length (m) [50 th Percentile Queue Length (m)]			Auxiliary Lane Storage Length (m)
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	50	90	80	115
	EBR	10	10	10	110
	WBL	20	15	45	100
	WBR	15	25	40 [15]	30
	NBL	90	30	80	100
	SBL	90	165 [140]	160 [135]	115
	SBR	15	40 [10]	15	25
Main Street East and Snider Road	EBL	15	40	90	120
	EBR	5	10	10	60
	WBL	5	10	10	20
	WBR	0	15	20	30
	NBL	50	25	60	60
	SBL	10	105	105	110
	SBR	15	20	25	80
Elizabeth Street and Street A	WBL	30	5	10	30
	WBR	20	5	15	-
Main Street East & Street C/Commercial Access	EBL	10	25	75	105



7.2.1.1 All-Way Stop Control Warrant

As a result of the deteriorating traffic operations, potentially due to the future background conditions and site generated traffic, an All-Way Stop Control warrant was conducted for the intersection of Killaly Street and Elizabeth Street for the 2031 future total scenario contained herein.

Per the 2031 future total intersection analysis, All-Way Stop Control (AWSC) warrants per the Ontario Traffic Manual (OTM) Book 5, Justification 1-3 were conducted for the intersections of Killaly Street and Elizabeth Street with the projected 2031 future total volumes. Per the warrants contained in **Appendix Q**, All-Way Stop Control would not be warranted for the Weekday A.M. and P.M. peak hours.

The analysis considered the total vehicle volumes on all approaches, combined vehicle and pedestrian volumes on the minor street, and minor street delay, as well as the minor road volume split during the weekday AM and PM peak hours. Minor approach delays were calculated using the AHV (average hourly volume) and compared against the 30-second threshold required for Justification 2B.

Results:

- Justifications 1, 2A, and 2B are not satisfied, as the total volumes and combined minor street volumes/delays do not meet the required thresholds.
- Justification 3 is satisfied, as the minor road volume split exceeds the 0.30 threshold during the weekday PM peak hour.

Based on these results, All-Way Stop Control is not justified at this intersection for the 2031 Future Total analysis period. However, it is recommended to provide All-Way Stop Control to enhance overall intersection operations and safety.

The existing configuration of the intersection comprises two pedestrian crossing strips accompanied by a pedestrian crossing sign along the eastbound approach. However, it is noted that the current configuration does not comply with the standards outlined in the Ontario Traffic Manual Book 15. Specifically, these standards advocate for a 2.5-meter wide single crossing and the inclusion of pedestrian signs featuring flashing beacons. In light of these considerations and improved pedestrian safety, detailed specifications regarding this modification can be provided in subsequent applications for further review.

Introducing All-Way Stop Control along with crosswalks on all approaches will enhance connectivity between the proposed site and the existing community to the west. The proposed control will also ensure the commercial area east of the intersection is well integrated with the surrounding area, promoting safe movement for pedestrians and cyclists and supporting non-motorized modes of transportation.

7.2.1.2 Recommendations

To improve the intersection operations for the signalized intersection of Highway 140/Elizabeth Street and Main Street and unsignalized intersection Killaly Street and Elizabeth Street, following recommendations are provided for the 2031 horizon years:

- Highway 140/Elizabeth Street and Main Street
 - Optimize signal timings and provide a cycle length of 85, 180 and 195 seconds in the weekday AM, weekday PM and Saturday peak hours respectively.

- Provide dual southbound left-turn lanes with protected left-turn phase.
- Provide protected/permissive phase for eastbound left, westbound left and northbound left movements.

It is also noted that the intersection falls under the jurisdiction of the MTO, and Niagara Region does not specifically identify saturation flow rates for the City of Port Colborne. Accordingly, a saturation flow rate of 1,750 vehicles per hour per lane (vphpl), consistent with Synchro default standards, has been assumed and applied in the signal timing optimization just to this intersection. In addition, a lost time adjustment of -2 seconds has been applied to the eastbound through, westbound through, and northbound through movements to account for vehicles moving slightly more efficiently through the intersection.

- Killaly Street and Elizabeth Street
 - Provide All-Way Stop Control at the intersection to improve traffic operations and to support pedestrian movements.

The performance metrics below show the intersection operations with recommended improvements.

Appendix R contains the 2031 future total detailed capacity analysis per the above proposed recommendations.

7.2.1.3 2031 Intersection Operation - Optimized

Based on the optimized intersection operations presented below, the intersection of Highway 140/Elizabeth Street and Main Street East is forecasted to operate within capacity. The eastbound left-turn movement is expected to improve from LOS F to LOS D during the weekday AM peak and to LOS C during the Saturday peak, with corresponding reductions in delay of 73.8 seconds and 186.2 seconds, respectively. The westbound left-turn movement is anticipated to improve from LOS F to LOS C, with a reduction in delay of 98 seconds and a maximum v/c ratio of 0.47 in the Saturday peak hour. Similarly, the southbound left-turn movement is expected to improve, with reductions in delay of 34.6 seconds, 446.8 seconds, and 465.9 seconds in the Saturday peak hour, and a maximum v/c ratio of 0.94 during the same period.

The proposed All-Way Stop Control at the intersection of Killaly Street East and Elizabeth Street is also expected to enhance intersection capacity, reducing delays for the southbound left, through, and right movements, with the v/c ratio projected to decrease from 1.01 to 0.88 in the weekday AM peak hour.

The recommended improvements are intended to enhance overall traffic operations; however, they are based on conservative traffic volume estimates, as the development will proceed in phases and traffic conditions may evolve over time. As the phasing plan has not yet been finalized, updated Transportation Impact Studies will be submitted with future applications for the respective development phases to confirm the timing and extent of any required improvements.

Table 26: 2031 Future Total Intersection Operations Optimized

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
Elizabeth Street/Highway 140 & Main St. E. (Highway 3) (Signalized)	Overall	C	D	E	31.1	48.6	57.3	0.79	0.91	0.94
	EBL	C	D	C	22.3	37.0	34.1	0.51	0.75	0.71
	EBT	C	D	E	27.1	49.7	62.3	0.40	0.81	0.93
	EBR	A	A	A	4.8	4.6	6.8	0.23	0.16	0.22
	WBL	B	C	C	16.6	21.5	26.3	0.20	0.18	0.47
	WBT	D	E	E	45.8	72.6	67.2	0.79	0.90	0.92
	WBR	B	A	A	15.5	0.4	0.4	0.49	0.22	0.24
	NBL	C	D	E	28.5	43.9	58.7	0.61	0.38	0.70
	NBT	D	F	F	44.9	84.5	106.0	0.69	0.84	0.91
	NBR	A	A	B	6.1	0.7	10.9	0.25	0.12	0.26
	SBL	E	F	F	61.4	85.0	100.5	0.70	0.91	0.94
	SBL2	E	F	F	61.4	85.0	100.5	0.70	0.91	0.94
	SBT	D	D	E	40.3	52.8	67.0	0.45	0.65	0.56
	SBR	B	A	A	13.3	0.6	0.2	0.45	0.28	0.13
Elizabeth Street & Killaly St. E (Unsignalized)	Overall	D	B	B	25.6	10.5	10.9	0.88	0.40	0.43
	EBLTR	E	B	B	37.1	11.3	11.9	0.88	0.40	0.43
	WBLTR	C	A	A	19.1	9.7	10.0	0.64	0.27	0.27
	NBLTR	B	A	A	11.1	8.8	8.9	0.09	0.05	0.06
	SBLTR	C	B	B	16.3	10.3	10.7	0.54	0.33	0.37

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/c ratios of 0.85 and greater than 0.85 are bolded and greater than 1.00 are bolded with red text.

The critical v/c threshold for intersections with Regional Roads and provincial Roads (Highway 140 & Highway 3) is 0.85 for all movements per Niagara Region and MTO guidelines..

Table 27: 2031 Future Total Conditions Queuing Assessment Optimized

Intersection	Performance Metrics				
	Movement	95 th Percentile Queue Length (m) [50 th Percentile Queue Length (m)]			Auxiliary Lane Storage Length (m)
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	40	75	55	115
	EBR	15	15	25	110
	WBL	25	15	30	100
	WBR	45	0	0	30
	NBL	80	40	110 [100]	100
	NBR	15	0	15	30
	SBL	45	150 [100]	155 [115]	115
	SBR	25	25	25	25

Based on the observed queues under the optimized signal timing scenario, the following increases in storage length are proposed:

Table 28: Recommended Storage Lengths

Intersection	Movement	Proposed Storage (m)	Existing Storage Length (m)
Hwy 140/Elizabeth Street and Main Street (Signal)	WBR	60	30
	NBL	110	100
	SBL	155	115
	SBR	35	25

7.2.2 2036 Intersection Operations

Table 29 outlines the 2036 future total conditions traffic operations at the signalized and unsignalized intersections and **Table 30** outlines the 2036 future total queuing assessment.

Under 2036 Future Total conditions, the unsignalized intersections are generally expected to operate similarly to the 2031 Future Total conditions. However, the intersection of Highway 140/Elizabeth Street and Main Street East is forecast to experience some additional delay due to background traffic growth. The westbound through movement is expected to experience a minor increase in delay of approximately 7 seconds during the weekday PM peak and 5 seconds during the Saturday peak, with the v/c ratio increasing from 0.90 to 0.94 in the weekday PM peak and from 0.92 to 0.95 in the Saturday peak. The northbound through movement is also expected to experience a minor increase in delay of 14.2 seconds and 8.6 seconds in the weekday PM and Saturday peak hours, respectively, with the v/c ratio remaining below 1.0. The southbound left-turn movement is anticipated to experience a maximum delay of 106.8 seconds in the Saturday peak hour, with a v/c ratio of 0.96.

Overall, the 95th percentile queues are not forecast to change significantly. However, the southbound left-turn queue at the intersection of Highway 140/Elizabeth Street and Main Street East is expected to increase by approximately 5 metres during the weekday PM peak hour.

No notable changes are expected at the remaining study intersections compared to the 2031 Future Total conditions.

Appendix S contains the 2036 future total conditions detailed capacity analysis.

Figure 23 shows the 2036 future total traffic volumes.

Table 29: 2036 Future Total Intersection Operations

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
Elizabeth Street/Highway 140 & Main St. E. (Highway 3) (Signalized)	Overall	C	D	E	33.0	53.3	60.7	0.84	0.94	0.96
	EBL	C	D	D	25.5	47.5	46.4	0.60	0.84	0.83
	EBT	C	D	E	28.0	49.3	63.6	0.44	0.82	0.94
	EBR	A	A	A	4.7	5.4	7.4	0.25	0.16	0.23
	WBL	B	C	C	16.7	21.3	28.5	0.22	0.19	0.52
	WBT	D	E	E	49.4	79.5	72.6	0.84	0.94	0.95
	WBR	B	A	A	17.3	0.4	0.4	0.52	0.23	0.24
	NBL	C	D	E	30.9	47.9	62.5	0.64	0.41	0.73
	NBT	D	F	F	47.5	98.7	114.6	0.71	0.90	0.94
	NBR	A	A	B	6.1	0.7	10.9	0.26	0.13	0.26
	SBL	E	F	F	63.9	94.3	106.8	0.72	0.94	0.96
	SBL2	E	F	F	63.9	94.3	106.8	0.72	0.94	0.96
	SBT	D	E	E	42.5	58.8	70.0	0.49	0.70	0.59
	SBR	B	A	A	14.7	0.6	0.2	0.46	0.30	0.14
Snider Road & Main St. E. (Highway 3) (Signalized)	Overall	C	C	D	21.1	29.1	44.9	0.76	0.89	0.94
	EBL	A	C	D	9.8	23.4	40.3	0.28	0.70	0.88
	EBT	B	B	B	11.6	17.7	18.9	0.38	0.58	0.47
	EBR	A	A	A	2.8	2.5	2.9	0.06	0.18	0.13
	WBL	B	B	C	11.6	15.9	25.7	0.01	0.06	0.04
	WBT	C	D	E	28.5	39.2	57.1	0.76	0.83	0.86
	WBR	A	A	B	0.1	6.1	10.4	0.03	0.21	0.25
	NBL	C	C	E	31.1	25.2	73.6	0.58	0.43	0.87
	NBTR	C	C	E	26.6	32.7	69.5	0.26	0.43	0.80
	SBL	C	D	E	20.6	51.6	60.8	0.07	0.89	0.90
	SBT	C	D	E	29.7	46.9	73.6	0.12	0.79	0.94
	SBR	A	A	A	9.0	7.0	7.3	0.26	0.43	0.54
	Overall	C	D	C	15.8	35.0	21.2	0.15	0.50	0.31
Lorraine Road/Babion Road & Main St. E. (Highway 3) (Unsignalized)	EBLT	A	A	A	0.4	0.4	0.6	0.00*	0.02	0.02
	EBR	A	A	A	0.0	0.0	0.0	0.01	0.08	0.07
	WBLT	A	A	A	0.3	0.5	0.3	0.00*	0.02	0.00*
	WBR	A	A	A	0.0	0.0	0.0	0.00	0.00	0.00*
	Overall	C	D	C	15.8	35.0	21.2	0.15	0.50	0.31

	NBLTR	C	D	C	15.8	35.0	21.2	0.15	0.50	0.31
	SBLTR	B	C	B	13.4	15.2	11.8	0.00*	0.09	0.04
Killaly St. E & Lorraine Road (Unsignalized)	Overall	B	C	B	10.9	17.6	14.2	0.07	0.40	0.30
	EBLTR	A	A	A	0.6	0.6	0.4	0.01	0.01	0.01
	WBLTR	A	A	A	0.4	0.3	0.3	0.01	0.01	0.01
	NBLTR	B	B	B	10.4	11.7	10.1	0.02	0.04	0.02
	SBLTR	B	C	B	10.9	17.6	14.2	0.07	0.40	0.30
	Overall	D	B	B	25.6	10.5	10.9	0.88	0.40	0.43
Elizabeth Street & Killaly St. E (Unsignalized)	EBLTR	E	B	B	37.1	11.3	11.9	0.88	0.40	0.43
	WBLTR	C	A	A	19.1	9.7	10.0	0.64	0.27	0.27
	NBLTR	B	A	A	11.1	8.8	8.9	0.09	0.05	0.06
	SBLTR	C	B	B	16.3	10.3	10.7	0.54	0.33	0.37
	Overall	D	D	D	26.5	25.2	29.2	0.49	0.19	0.32
Elizabeth Street & Street A (Unsignalized)	WBL	D	D	D	26.5	25.2	29.2	0.32	0.12	0.26
	WBR	C	B	B	17.9	10.9	13.7	0.49	0.16	0.32
	NBTR	-	-	-	0.0	0.0	0.0	0.34	0.19	0.28
	SBLT	A	A	A	2.3	4.4	4.1	0.07	0.16	0.15
	Overall	C	B	B	17.1	10.8	12.1	0.37	0.16	0.23
Elizabeth Street & Street B (Unsignalized)	WBTR	C	B	B	17.1	10.8	12.1	0.37	0.09	0.15
	NBTR	-	-	-	0.0	0.0	0.0	0.28	0.16	0.23
	SBLT	A	A	A	1.4	2.7	2.1	0.05	0.07	0.06
	Overall	B	B	A	14.0	10.8	0.0	0.28	0.16	0.23
Elizabeth Street & Elementary School Access (Unsignalized)	WBTR	B	B	A	14.0	10.8	0.0	0.10	0.02	0.02
	NBTR	-	-	-	0.0	0.0	0.0	0.28	0.16	0.23
	SBLT	A	A	-	0.8	0.3	0.0	0.02	0.01	0.00
	Overall	B	A	A	10.5	9.9	9.6	0.19	0.09	0.09
Killaly St. E & Commercial Access (Unsignalized)	EBLT	A	A	A	0.9	1.3	1.3	0.02	0.02	0.02
	WBTR	-	-	-	0.0	0.0	0.0	0.19	0.09	0.09
	SBTR	B	A	A	10.5	9.9	9.6	0.03	0.04	0.03
	Overall	B	B	A	10.4	10.4	10.0	0.15	0.10	0.09
Killaly St. E & Street D (Unsignalized)	EBLT	A	A	A	1.0	0.1	0.4	0.02	0.00	0.00
	WBTR	-	-	-	0.0	0.0	0.0	0.15	0.10	0.09

	SBTR	B	B	A	10.4	10.4	10.0	0.08	0.04	0.04
Killaly St. E & Street F (Unsignalized)	Overall	A	B	A	9.6	10.6	9.9	0.09	0.10	0.07
	EBLT	A	A	A	1.3	0.1	0.4	0.02	0.00	0.01
	WBTR	-	-	-	0.0	0.0	0.0	0.09	0.10	0.07
	SBTR	A	B	A	9.6	10.6	9.9	0.08	0.04	0.04
Killaly St. E & Street G (Unsignalized)	Overall	A	B	A	9.3	10.8	10.0	0.07	0.10	0.07
	EBLT	A	A	A	0.7	0.0	0.2	0.01	0.00	0.00
	WBTR	-	-	-	0.0	0.0	0.0	0.07	0.10	0.07
	SBTR	A	B	A	9.3	10.8	10.0	0.04	0.03	0.03
Street E & Killaly St. E (Unsignalized)	Overall	B	B	A	12.2	10.7	9.9	0.05	0.02	0.03
	EBLTR	A	A	A	0.8	0.1	0.2	0.01	0.00	0.00
	WBLTR	-	-	-	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	B	A	A	12.2	9.9	9.9	0.04	0.01	0.02
	SBLTR	A	B	A	9.8	10.7	9.9	0.05	0.02	0.03
Lorraine Road & Site Access (Unsignalized)	Overall	A	A	A	8.8	9.7	9.5	0.03	0.11	0.09
	EBTR	A	A	A	8.8	9.7	9.5	0.01	0.03	0.03
	NBLT	A	A	A	0.4	0.6	0.4	0.00	0.01	0.00
	SBTR	-	-	-	0.0	0.0	0.0	0.03	0.11	0.09
Lorraine Road & Street A (Unsignalized)	Overall	A	A	A	8.7	9.7	9.4	0.02	0.10	0.08
	EBTR	A	A	A	8.7	9.7	9.4	0.02	0.06	0.05
	NBLT	A	A	A	0.8	1.3	0.8	0.00	0.01	0.01
	SBTR	-	-	-	0.0	0.0	0.0	0.02	0.10	0.08
Street C/Commercial Access & Main St. E. (Highway 3) (Unsignalized)	Overall	B	C	E	14.8	18.6	41.6	0.26	0.51	0.87
	EBL	B	B	D	10.7	13.7	33.7	0.22	0.51	0.87
	EBTR	A	A	A	0.0	0.0	0.0	0.26	0.45	0.44
	WBLTR	A	A	A	0.1	0.3	0.2	0.00*	0.01	0.00*
	NBR	B	B	B	10.8	13.6	13.7	0.01	0.03	0.03
	SBR	B	C	E	14.8	18.6	41.6	0.19	0.47	0.82

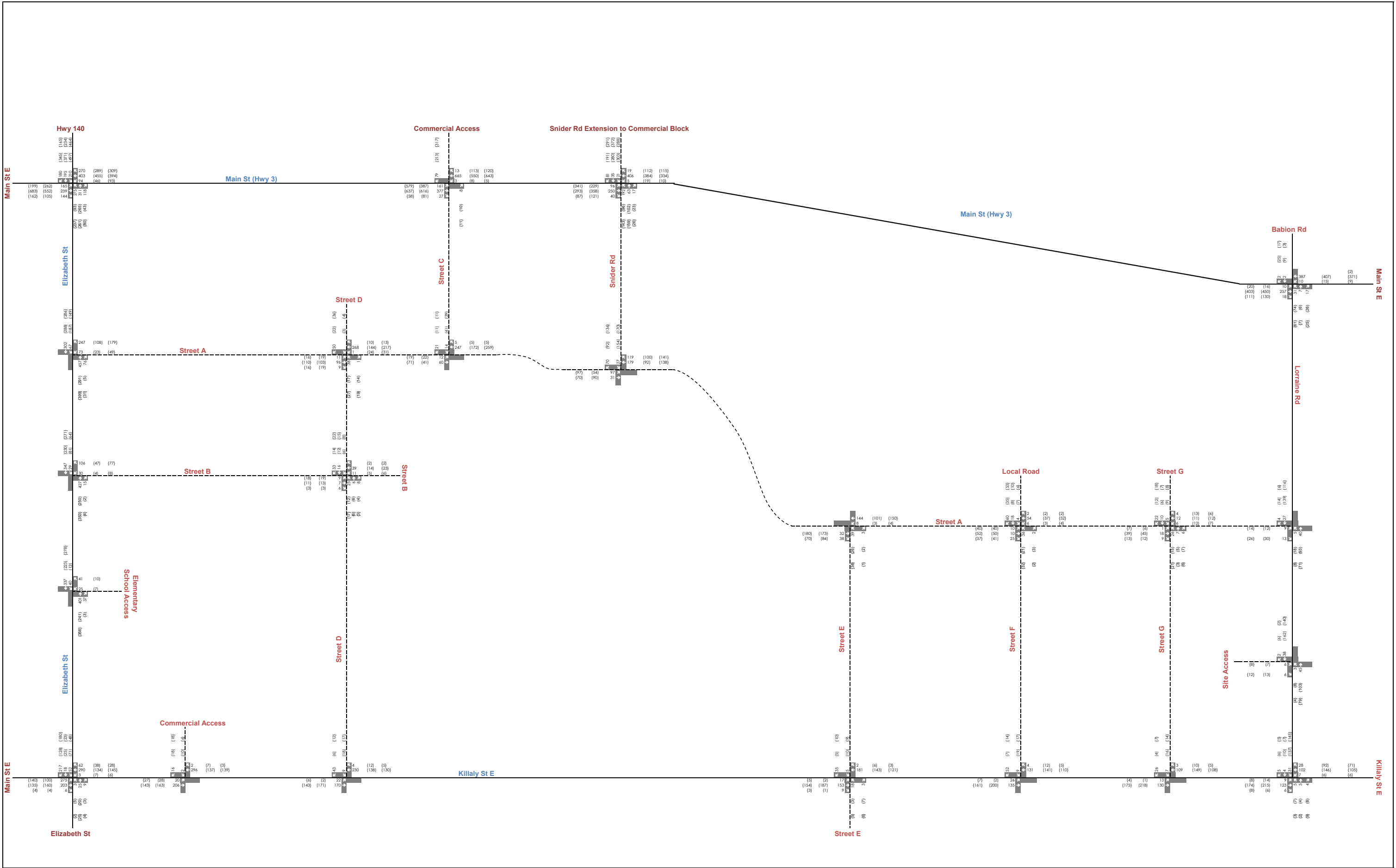
Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/c ratios of 0.85 and greater than 0.85 are bolded and greater than 1.00 are bolded with red text.

The critical v/c threshold for intersections with Regional Roads and provincial Roads (Highway 140 & Highway 3) is 0.85 for all movements per Niagara Region and MTO guidelines..

Table 30: 2036 Future Total Conditions Queuing Assessment

Intersection	Movement	Performance Metrics			
		95 th Percentile Queue Length (m) [50 th Percentile Queue Length (m)]			Auxiliary Lane Storage Length (m)
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	60	110	75	115
	EBR	15	15	25	110
	WBL	25	15	30	100
	WBR	25	0	0	60
	NBL	80	40	110	110
	NBR	15	0	15	30
	SBL	50	155	160 [115]	155
	SBR	25	0	0	35
Main Street East and Snider Road	EBL	15	45	105	120
	EBR	5	10	10	60
	WBL	5	10	10	20
	WBR	0	15	25	30
	NBL	50	25	60	60
	SBL	10	110	105	110
	SBR	15	20	25	80
Elizabeth Street and Street A	WBL	30	5	10	
	WBR	20	5	15	
Main Street East & Street C/Commercial Access	EBL	10	25	85	105



7.2.3 2041 Intersection Operations

Table 31 delineates the 2041 future total conditions traffic operations at the signalized and unsignalized intersections and **Table 32** outlines the 2041 future total queuing assessment.

Under 2041 Future Total conditions, the unsignalized intersections are generally expected to operate similarly to the 2036 conditions. However, a minor increase in delays is anticipated at the intersection of Highway 140/Elizabeth Street and Main Street East due to background traffic growth.

The westbound through movement is expected to experience a slight increase in delay of approximately 9.6 seconds during the weekday PM peak and 8 seconds during the Saturday peak, with the v/c ratio increasing from 0.94 to 0.98 in the weekday PM peak and from 0.95 to 0.99 in the Saturday peak. The northbound through movement is also expected to experience a minor increase in delay of 19.6 seconds and 8.6 seconds in the weekday PM and Saturday peak hours, respectively, with the v/c ratio remaining below 1.0. The southbound left-turn movement is anticipated to experience an increase in delay of 9.6 seconds during the weekday PM peak and 10.3 seconds during the Saturday peak, with a maximum v/c ratio of 0.99 in the Saturday peak hour.

Overall, the 95th percentile queues are generally expected to be accommodated within the available storage lengths at the unsignalized intersections. Exceptions are forecast at the intersection of Highway 140/Elizabeth Street and Main Street East, where the eastbound left-turn and southbound left-turn queues are expected to exceed the available storage by approximately 45 metres and 5 metres, respectively, during the weekday PM peak hour.

Appendix T contains the 2041 future total conditions detailed capacity analysis.

Figure 24 shows the 2041 future background traffic volumes.

7.2.4 Recommendations

To accommodate the 95th percentile queues at the intersection of Highway 140/Elizabeth Street and Main Street East, it is recommended that the storage lengths for the eastbound left-turn storage should be increased to 160 metres, and the southbound left-turn storage should also be increased to 160 metres.

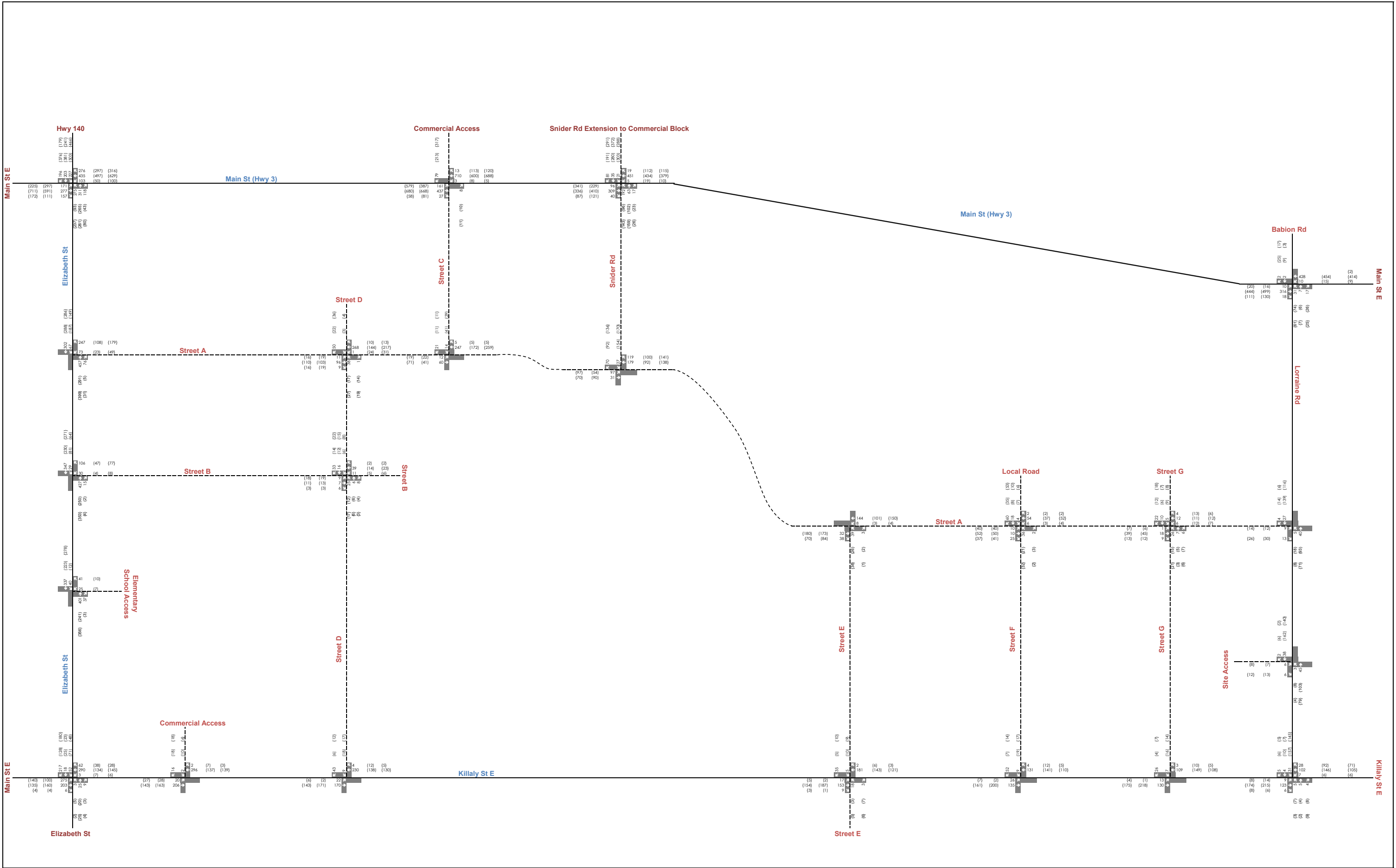


Table 31: 2041 Future Total Traffic Operations

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
Elizabeth Street/Highway 140 & Main St. E. (Highway 3) (Signalized)	Overall	D	E	E	35.1	60.2	66.6	0.88	0.98	0.99
	EBL	C	E	E	28.4	72.5	78.0	0.66	0.95	0.98
	EBT	C	D	E	29.1	50.3	65.5	0.49	0.83	0.95
	EBR	A	A	A	4.5	6.2	7.9	0.27	0.16	0.24
	WBL	B	C	C	17.1	21.5	31.9	0.26	0.21	0.58
	WBT	D	F	F	53.3	89.1	80.4	0.88	0.98	0.99
	WBR	B	A	A	18.5	0.4	0.4	0.52	0.23	0.25
	NBL	C	D	E	32.8	52.0	67.8	0.67	0.47	0.78
	NBT	D	F	F	49.6	118.3	123.2	0.73	0.98	0.97
	NBR	A	A	B	6.2	0.8	11.0	0.26	0.14	0.27
	SBL	E	F	F	68.2	103.9	117.1	0.77	0.98	0.99
	SBL2	E	F	F	68.2	103.9	117.1	0.77	0.98	0.99
	SBT	D	E	E	44.1	65.0	73.4	0.52	0.75	0.63
	SBR	B	A	A	16.2	0.7	0.3	0.50	0.33	0.16
Snider Road & Main St. E. (Highway 3) (Signalized)	Overall	C	C	D	23.5	33.0	49.6	0.84	0.94	0.98
	EBL	B	C	D	10.2	29.9	52.8	0.30	0.77	0.95
	EBT	B	C	C	13.0	20.3	20.6	0.46	0.66	0.54
	EBR	A	A	A	2.8	2.5	2.9	0.06	0.18	0.13
	WBL	B	B	C	11.8	16.1	25.8	0.01	0.07	0.04
	WBT	C	D	E	34.9	54.3	77.7	0.84	0.94	0.98
	WBR	A	A	B	0.1	6.1	10.4	0.03	0.21	0.25
	NBL	C	C	E	31.1	25.2	73.6	0.58	0.43	0.87
	NBTR	C	C	E	26.6	32.7	69.5	0.26	0.43	0.80
	SBL	C	D	E	20.6	51.6	60.8	0.07	0.89	0.90
	SBT	C	D	E	29.7	46.9	73.6	0.12	0.79	0.94
	SBR	A	A	A	9.0	7.0	7.3	0.26	0.43	0.54
Lorraine Road/Babion Road & Main St. E. (Highway 3) (Unsignalized)	Overall	C	E	D	18.0	46.2	28.9	0.18	0.58	0.40
	EBLT	A	A	A	0.4	0.4	0.6	0.01	0.02	0.02
	EBR	-	-	-	0.0	0.0	0.0	0.01	0.08	0.07
	WBLT	A	A	A	0.3	0.5	0.3	0.01	0.02	0.01
	WBR	-	-	-	0.0	0.0	0.0	0.00	0.00	0.00

	NBLTR	C	E	D	18.0	46.2	28.9	0.18	0.58	0.40
	SBLTR	B	C	B	14.5	16.5	13.0	0.01	0.11	0.04
Killaly St. E & Lorraine Road (Unsignalized)	Overall	B	C	B	10.9	17.6	14.2	0.07	0.40	0.30
	EBLTR	A	A	A	0.6	0.6	0.4	0.01	0.01	0.01
	WBLTR	A	A	A	0.4	0.3	0.3	0.01	0.01	0.01
	NBLTR	B	B	B	10.4	11.7	10.1	0.02	0.04	0.02
	SBLTR	B	C	B	10.9	17.6	14.2	0.07	0.40	0.30
	Overall	D	B	B	25.6	10.5	10.9	0.88	0.40	0.43
Elizabeth Street & Killaly St. E (Unsignalized)	EBLTR	E	B	B	37.1	11.3	11.9	0.88	0.40	0.43
	WBLTR	C	A	A	19.1	9.7	10.0	0.64	0.27	0.27
	NBLTR	B	A	A	11.1	8.8	8.9	0.09	0.05	0.06
	SBLTR	C	B	B	16.3	10.3	10.7	0.54	0.33	0.37
	Overall	D	D	D	26.5	25.2	29.0	0.49	0.19	0.32
Elizabeth Street & Street A (Unsignalized)	WBL	D	D	D	26.5	25.2	29.0	0.32	0.12	0.26
	WBR	C	B	B	17.9	10.9	13.7	0.49	0.16	0.32
	NBTR	-	-	-	0.0	0.0	0.0	0.34	0.19	0.28
	SBLT	A	A	A	2.3	4.4	4.1	0.07	0.16	0.15
	Overall	C	B	B	15.7	10.5	12.1	0.31	0.16	0.23
Elizabeth Street & Street B (Unsignalized)	WBTR	C	B	B	15.7	10.5	12.1	0.31	0.08	0.15
	NBTR	-	-	-	0.0	0.0	0.0	0.28	0.16	0.23
	SBLT	A	A	A	1.0	2.6	2.1	0.03	0.07	0.06
	Overall	B	B	A	15.0	10.9	0.0	0.28	0.16	0.23
Elizabeth Street & Elementary School Access (Unsignalized)	WBTR	B	B	A	15.0	10.9	0.0	0.17	0.03	0.03
	NBTR	-	-	-	0.0	0.0	0.0	0.28	0.16	0.23
	SBLT	A	A	-	1.3	0.5	0.0	0.04	0.01	0.00
	Overall	B	A	A	10.5	9.9	9.6	0.19	0.09	0.09
Killaly St. E & Commercial Access (Unsignalized)	EBLT	A	A	A	0.9	1.3	1.3	0.02	0.02	0.02
	WBTR	-	-	-	0.0	0.0	0.0	0.19	0.09	0.09
	SBTR	B	A	A	10.5	9.9	9.6	0.03	0.04	0.03
	Overall	B	B	A	10.4	10.4	10.0	0.15	0.10	0.09
Killaly St. E & Street D (Unsignalized)	EBLT	A	A	A	1.0	0.1	0.4	0.02	0.00	0.00
	WBTR	-	-	-	0.0	0.0	0.0	0.15	0.10	0.09

	SBTR	B	B	A	10.4	10.4	10.0	0.08	0.04	0.04
Killaly St. E & Street F (Unsignalized)	Overall	A	B	A	9.6	10.6	9.9	0.09	0.10	0.07
	EBLT	A	A	A	1.3	0.1	0.4	0.02	0.00	0.01
	WBTR	-	-	-	0.0	0.0	0.0	0.09	0.10	0.07
	SBTR	A	B	A	9.6	10.6	9.9	0.08	0.04	0.04
Killaly St. E & Street G (Unsignalized)	Overall	A	B	A	9.3	10.8	10.0	0.07	0.10	0.07
	EBLT	A	A	A	0.7	0.0	0.2	0.01	0.00	0.00
	WBTR	-	-	-	0.0	0.0	0.0	0.07	0.10	0.07
	SBTR	A	B	A	9.3	10.8	10.0	0.04	0.03	0.03
Street E & Killaly St. E (Unsignalized)	Overall	B	B	A	12.2	10.7	9.9	0.05	0.02	0.03
	EBLTR	A	A	A	0.8	0.1	0.2	0.01	0.00	0.00
	WBLTR	-	-	-	0.0	0.0	0.0	0.00	0.00	0.00
	NBLTR	B	A	A	12.2	9.9	9.9	0.04	0.01	0.02
	SBLTR	A	B	A	9.8	10.7	9.9	0.05	0.02	0.03
Lorraine Road & Site Access (Unsignalized)	Overall	A	A	A	8.8	9.7	9.5	0.03	0.11	0.09
	EBTR	A	A	A	8.8	9.7	9.5	0.01	0.03	0.03
	NBLT	A	A	A	0.4	0.6	0.4	0.00	0.01	0.00
	SBTR	-	-	-	0.0	0.0	0.0	0.03	0.11	0.09
Lorraine Road & Street A (Unsignalized)	Overall	A	A	A	8.7	9.7	9.4	0.02	0.10	0.08
	EBTR	A	A	A	8.7	9.7	9.4	0.02	0.06	0.05
	NBLT	A	A	A	0.8	1.3	0.8	0.00	0.01	0.01
	SBTR	-	-	-	0.0	0.0	0.0	0.02	0.10	0.08
Street C/Commercial Access & Main St. E. (Highway 3) (Unsignalized)	Overall	C	C	F	15.5	20.1	50.9	0.30	0.55	0.94
	EBL	B	C	E	11.2	15.2	46.6	0.23	0.55	0.94
	EBTR	A	A	A	0.0	0.0	0.0	0.30	0.48	0.47
	WBLTR	A	A	A	0.1	0.3	0.2	0.00*	0.01	0.00*
	NBR	B	B	B	11.3	14.2	14.3	0.02	0.03	0.03
	SBR	C	C	F	15.5	20.1	50.9	0.20	0.50	0.87

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro).

Note 2: All v/c ratios of 0.85 and greater than 0.85 are bolded and greater than 1.00 are bolded with red text.

The critical v/c threshold for intersections with Regional Roads and provincial Roads (Highway 140 & Highway 3) is 0.85 for all movements per Niagara Region and MTO guidelines..

Table 32: 2041 Future Total Conditions Queuing Assessment

Intersection	Performance Metrics				
	Movement	95 th Percentile Queue Length (m) [50 th Percentile Queue Length (m)]			Auxiliary Lane Storage Length (m)
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	50	160 [90]	125 [60]	115
	EBR	15	15	30	110
	WBL	25	20	30	100
	WBR	30	0	0	60
	NBL	80	40	110	110
	NBR	15	0	15	30
	SBL	55	160 [115]	160 [115]	155
	SBR	30	35	0	35
Main Street East and Snider Road	EBL	15	50	115	120
	EBR	5	10	10	60
	WBL	5	10	10	20
	WBR	0	15	25	30
	NBL	50	25	60	60
	SBL	10	110	105	110
	SBR	15	20	25	80
Elizabeth Street and Street A	WBL	30	5	10	30
	WBR	20	5	15	-
Main Street East & Street C/Commercial Access	EBL	10	30	105	105

Table 33: 2041 Future Total Optimized Operations

Intersection	Movement	LOS			Delay (s)			v/c Ratio		
		A.M.	P.M.	SAT	A.M.	P.M.	SAT	A.M.	P.M.	SAT
Elizabeth Street/Highway 140 & Main St. E. (Highway 3) (Signalized)	Overall	D	E	E	35.1	60.1	66.6	0.88	0.98	0.99
	EBL	C	E	E	28.4	72.5	77.8	0.66	0.95	0.98
	EBT	C	D	E	29.1	50.3	65.4	0.49	0.83	0.95
	EBR	A	A	A	4.5	6.2	7.9	0.27	0.16	0.24
	WBL	B	C	C	17.1	21.5	31.9	0.26	0.21	0.58
	WBT	D	F	F	53.3	89.2	80.4	0.88	0.98	0.99
	WBR	B	A	A	18.6	0.4	0.4	0.53	0.24	0.25
	NBL	C	D	E	32.8	52.0	67.8	0.67	0.47	0.78
	NBT	D	F	F	49.6	119.4	123.3	0.73	0.98	0.97
	NBR	A	A	B	6.2	0.8	10.9	0.26	0.14	0.27
	SBL	E	F	F	68.2	102.8	117.1	0.77	0.97	0.99
	SBL2	E	F	F	68.2	102.8	117.1	0.77	0.97	0.99
	SBT	D	E	E	44.1	65.0	73.4	0.52	0.75	0.63
	SBR	B	A	A	16.2	0.7	0.3	0.50	0.33	0.16
Elizabeth Street/ Killaly Street East	Overall	E	B	B	38.8	11.5	12.2	0.89	0.41	0.44
	EBLTR	E	B	B	38.8	11.5	12.2	0.89	0.41	0.44
	WBLTR	C	B	B	20.7	10.1	10.4	0.66	0.28	0.29
	NBLTR	B	A	A	11.2	8.8	9.0	0.08	0.05	0.05
	SBLTR	C	B	B	16.5	104	10.8	0.55	0.33	0.37

It is noted that with the implementation of revised signal timings and the addition of turn lanes, the signalized intersection is anticipated to operate under capacity with acceptable delays. Volume-to-capacity (v/c) ratios approaching or exceeding 0.90 are anticipated as a result of high traffic volumes associated with background growth and site-generated traffic. Notwithstanding, the optimized signal timing is forecast to maintain overall intersection operations under capacity.

The unsignalized intersection is also forecast to operate satisfactorily, with minimal delays anticipated for all movements.

Table 34: 2041 Future Total Optimized Queuing Assessment

Intersection	Performance Metrics				Auxiliary Lane Storage Length (m)
	Movement	95 th Percentile Queue Length (m) [50 th Percentile Queue Length (m)]			
		AM	PM	SAT	
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	40	150 [85]	120 [55]	115
	EBR	15	15 [5]	30	110
	WBL	25	20 [10]	30	100
	WBR	60 [30]	0	0	30
	NBL	80	40 [25]	110 [80]	100
	NBR	15	0	15	30
	SBL	50	150 [110]	150 [110]	115
	SBR	35 [15]	0	0	25

Based on the observed queues under the optimized signal timing scenario, the following increases in storage length are proposed:

Table 35: Recommended Storage Lengths

Intersection	Movement	Proposed Storage (m)	Existing Storage Length (m)
Hwy 140/Elizabeth Street and Main Street (Signal)	EBL	150	115
	WBR	60	30
	NBL	110	100
	SBL	150	115
	SBR	35	25

8.0 Intersection Spacing Review

The development proposal includes one site accesses at Main Street East, Elizabeth Street, Killaly Street East and Lorraine Road. This section evaluates the suitability of the site accesses from a transportation safety perspective and recommends mitigation measures, if warranted. The safety review of the accesses includes an assessment of intersection spacing in accordance with the applicable MTO and TAC GDGCR Guidelines.

8.1 Spacing Along Arterial Roadways

Elizabeth Street and Killaly Street are identified as arterial roadways in Schedule D of the City of Port Colborne Official Plan. According to the TAC Geometric Design Guide for Canadian Roads (GDGCR), a minimum intersection spacing of 200 metres is generally acceptable along arterial roadways. Intersections along arterial roadways where site access is proposed are not recommended to be signalized and are anticipated to operate effectively with stop control on the minor approach. The review is summarized in

Table 36.

Table 36: Intersection Spacing Review – Arterial Roadways

Roadway	Intersection	TAC Requirements	Site Plan Measurement
Elizabeth Street	Main Street East & Street A	200 m	351 m
	Street A & Street B		331 m
	Street B & Killaly Street East		340 m
Killaly Street East	Elizabeth Street & Street D		378 m
	Street D & Street E		511 m
	Street E & Street F		297 m
	Street F & Street G		340 m
	Street G & Lorraine Road		118 m

As outlined above, the site accesses generally meet the applicable spacing requirements along the arterial roadways. The spacing between Street G and Lorraine Road does not fully meet the standard requirement. However, the 200 m spacing criterion is intended to accommodate back-to-back left-turn storage. No left-turn storage is proposed at the Street G or Lorraine Road intersections with Killaly Street East. As vehicle queues are not anticipated, the available spacing is considered adequate.

8.2 Spacing Along Local Roadways

The site offers local road connections to Lorraine Road. Street A and another local Street connection is proposed north of the intersection of Killaly Street East and Lorraine Road.

Table 37: Intersection Spacing Review – Local Roadways

Roadway	Intersection	TAC Requirements	Site Plan Measurement
Lorraine Road	Main Street East & Street A	40 m	505 m
	Street A & Site Access		267 m
	Site Access & Killaly Street East		118 m

The site access connections to Lorraine Road meet the minimum 40 metre requirements as outlines in TAC GDGCR Guidelines.

8.3 Spacing Along MTO Highway

Main Street East is classified as a Class 2B Arterial Highway in accordance with Figure 4.5.3 (Access Management Classification System for Southern Ontario) of the Ministry of Transportation of Ontario (MTO) Highway Corridor Management Manual. The subject site is located within the planned urban boundary. This section evaluates the proposed access connections, spacing compliance, and operational considerations in accordance with MTO access management policies and is supported by the findings of the Traffic Impact Study.

The proposed development includes two public road connections to Main Street East, namely Snider Road and Street C. Snider Road currently exists as a gravel roadway and is not fully constructed, while Street C is proposed west of Snider Road. Both connections are proposed to form four-leg intersections with Main Street East. Snider Road includes a northern extension to provide a future connection to the commercial lands north of Main Street East, while Street C is proposed to include a commercial access connection.

In accordance with MTO access spacing guidelines, a minimum spacing of 800 m is required between public road connections on a Class 2B arterial highway. Snider Road satisfies the spacing requirements, maintaining approximately 840 m separation from Highway 140/Elizabeth Street and approximately 844 m separation from Lorraine Road/Babion Road. Street C is located approximately 570 m from Highway 140/Elizabeth Street and approximately 268 m from Snider Road and does not meet the minimum spacing guideline.

It is recognized that Snider Road alone would not adequately accommodate the traffic generated by the proposed residential development south of Main Street East and the commercial lands to the north. Accordingly, an additional public road connection is required to support acceptable traffic operations and overall network connectivity. While the proposed Street C connection does not meet the standard spacing requirement, it is considered functionally necessary to support future traffic demands associated with the site.

Based on the traffic operations analysis, signal control is recommended at the Snider Road and Main Street East intersection. The Street C and Main Street East intersection is recommended to

operate under stop control on the minor approach and as a left-in/right-in/right-out configuration, with left-out movements restricted to minimize potential operational and safety impacts. The 2041 future total queue analysis indicates that the available spacing is sufficient to accommodate the required turning-lane storage.

The section of Main Street East west of Highway 140 operates under the jurisdiction of the City of Port Colborne and currently has a posted speed limit of 50 km/h. Given the planned urban context and proposed development, a reduced posted speed limit is recommended for the section of Main Street East of Highway 140 adjacent to the site.

As noted in Table 4.6.1, "Spacing and Density of Various Access Connection Types," Note (h) of the MTO Highway Corridor Management Manual, minimum spacing requirements are based on a posted speed of 70 km/h, and reduced spacing may be considered by MTO where lower posted speeds apply, subject to review and acceptance of a Traffic Impact Study. Therefore, it is recommended that the posted speed along the site frontage be reduced to 50 km/h, consistent with the speed limit west of Highway 140 in the urban area, and that site access be considered accordingly.

Conclusion

The proposed Snider Road and Street C connections to Main Street East provide necessary access to support the residential and commercial development while maintaining overall network connectivity. Although Street C does not fully meet MTO spacing guidelines, it is functionally required to accommodate future traffic demands. Traffic analysis supports signal control at Snider Road and restricted movements at Street C, and the available lane storage is sufficient for projected 2041 traffic. A reduced 50 km/h speed limit along the site frontage is recommended to ensure safe and efficient access consistent with the surrounding urban area.

9.0 Parking Review

Per the City of Port Colborne's Comprehensive Zoning y-Law 6575/30/18, April 2018, Section 03, single-detached, attached townhouse dwellings require one parking spaces per dwelling unit and the commercial blocks require minimum one space per 25 square metres GFA. The plan proposes single detached homes and townhomes throughout the subject lands as accessed by public streets.

The development is anticipated to meet parking requirements. Specific details regarding the parking spaces will be provided as a part of subsequent applications.

10.0 Active Transportation Review

The City of Port Colborne is currently in the process of preparing an Active Transportation Master Plan (ATMP), which has not yet been finalized. However, a draft of the ATMP has been reviewed to assess planned active transportation infrastructure improvements relevant to the subject site.

The subject lands are located within an area identified in the draft ATMP as being served by multiple future active transportation corridors. The ATMP establishes a long-term framework to enhance walking and cycling connectivity along key arterial and collector roads throughout the City, including Killaly Street East, Main Street East, and Elizabeth Street, which bound or are adjacent to the subject site.

Killaly Street East is identified as a priority east-west utilitarian cycling corridor within the recommended cycling network. The ATMP proposes the implementation of paved shoulders with

separation from vehicular traffic, along with signed bicycle route treatments, to improve safety and comfort for cyclists. This corridor is intended to support utilitarian cycling trips and provide improved access to nearby schools, residential neighbourhoods, and commercial areas along the Killaly Street and Main Street corridors.

Elizabeth Street, which forms the western boundary of the subject site, is identified in the ATMP as a planned bicycle boulevard. Bicycle boulevards are designed as low-speed, low-volume routes that prioritize cycling through traffic calming measures and shared street design. The proposed Elizabeth Street bicycle boulevard is intended to provide a north–south active transportation connection linking surrounding neighbourhoods to Killaly Street East and other key east–west routes within the City's cycling network.

In addition to planned cycling infrastructure, the ATMP identifies the broader Killaly Street East and Elizabeth Street area as part of the City's priority urban walking network. Future pedestrian-focused improvements are intended to support continuous sidewalks along arterial roads, enhance safety at intersections and near schools, and improve connectivity between residential areas and commercial destinations.

The subject site is anticipated to provide pedestrian connections primarily along the planned 23-metre-wide collector roads, facilitating connectivity to the surrounding road network and nearby amenities within the City.

Further details regarding the proposed right-of-way (ROW) will be provided in subsequent submissions.

11.0 Conclusion and Recommendations

The findings contained herein analyzes the subject lands based on the most recent demonstration plan dated January 29, 2026, which proposes a total of 1,258 single detached units, 383 townhouse units, 362 back-to-back townhouse units, 10,000 square feet commercial area north of Killaly Street East, 700,000 square feet commercial area north of Main Street East and Elementary school. This results in a very conservative outcome and conclusions and recommendations are subject to change upon further study as the total gross floor area of the proposed commercial is adjusted through future planning applications.

Minor changes to the development statistics are not expected to materially impact the findings of this report, however, if proposed commercial GFA is reduced significantly, we would anticipate a change to the required improvements outlined in this report and summarized below. Findings are summarized as the following:

Existing Conditions

The existing roadway network generally operates at Level of Service (LOS) "C" or better, with minimal delays and well under capacity, except for the eastbound left-turn movement at the intersection of Highway 140/Elizabeth Street and Main Street East, which operates at LOS "D" during the weekday PM peak hour while remaining under capacity. The 95th percentile queues are not expected to exceed the available storage.

Future Background Conditions

2031 Intersection Operations

The study intersections are forecast to operate at LOS "C" or better during all peak hours, with the exception of the eastbound left-turn movement at the intersection of Highway 140/Elizabeth Street and Main Street East, which is expected to operate at LOS "D" during the weekday PM peak hour with a v/c ratio of 0.87. However, no critical movements are anticipated under the forecast conditions.

The 95th percentile queues at the study intersections are anticipated to be accommodated within the available storage lengths.

2036 Intersection Operations

The eastbound left-turn movement at the intersection of Highway 140/Elizabeth Street and Main Street East is forecasted to operate at LOS "D", LOS "E", and LOS "D" during the weekday AM, weekday PM, and Saturday peak hours, respectively. The v/c ratio for this movement is anticipated to increase to 0.96 during the weekday PM peak hour. However, the 95th percentile queues are expected to remain within the available storage capacity.

All other study intersections are forecast to operate at LOS "C" or better, with acceptable delays under the forecast conditions.

2041 Intersection Operations

In comparison to the 2036 Future Background conditions, the eastbound left-turn movement at the intersection of Highway 140/Elizabeth Street and Main Street East is forecasted to deteriorate to LOS "F" during the weekday PM peak hour, with an increase in delay of approximately 78 seconds. The

v/c ratio is projected to exceed capacity during this period. The 95th percentile queues are expected to operate at the available storage limit.

Under this scenario, intersection improvements are not currently recommended, as any upgrades are expected to be identified and implemented as the area develops. The queue analysis indicates that the eastbound left-turn queue is expected to operate within the available storage.

Trip Generation

The proposed development is anticipated to generate a total of 1,910 net external trips (745 inbound, 1,164 outbound) during the weekday A.M. peak hour, 2,185 net trips (1,227 inbound, 958 outbound) during the weekday P.M. peak hour, and 2,732 net trips (1,401 inbound, 1,331 outbound) during the Saturday peak hour. Trip generation has been calculated based on the maximum number of residential units and commercial floor area; these figures may change or decrease in the future as the development proceeds in stages, which are currently yet to be determined.

The residential units are expected to generate a total of 1,184 net external trips (309 inbound, 875 outbound) during the weekday A.M. peak hour, 1,020 net trips (582 inbound, 438 outbound) during the weekday P.M. peak hour, and 1,053 net trips (435 inbound, 618 outbound) during the Saturday peak hour.

The commercial area is expected to generate a total of 584 net external trips (360 inbound, 224 outbound) during the weekday A.M. peak hour, 1,134 net trips (631 inbound, 503 outbound) during the weekday P.M. peak hour, and 1,679 net trips (966 inbound, 713 outbound) during the Saturday peak hour.

The elementary school is expected to generate a total of 142 (76 inbound and 65 outbound) during the weekday A.M. peak hour, 31 (17 inbound and 14 outbound) during the weekday P.M. peak hour.

The trip generation has been estimated as per the ITE Trip Generation Manual 12th edition.

Highway 3 Access Sensitivity

According to the sensitivity analysis conducted for Street C connecting to Main Street East, the Snider Road connection alone would not be sufficient to support the residential units south of Main Street East and the commercial area north of Main Street East. Therefore, a direct connection of Street C / Commercial Access to Main Street East will be essential to accommodate the significant number of trips generated. The Street C / Commercial Access intersection with Main Street East is proposed to operate as uncontrolled left-in/right-in/right-out access. The intersection of Main Street East and Snider Road is recommended to be signalized to support the traffic volumes.

The recommendations are identified below:

Horizon Year	Intersection/Segment	Improvements
2031	Main Street and Snider Road	• Signalize intersection • Implement left/right turn lanes for southbound, eastbound and westbound approaches and left-turn lane for northbound approach with following storage/taper lengths in meters: ◦ Eastbound Left (EBL): 105 / 50

		○ Eastbound Right (EBR): 60 / 55 ○ Westbound Left (WBL): 20 / 50 ○ Westbound Right (WBR): 30 / 20 ○ Northbound Left (NBL): 60 / 30 ○ Southbound Left (SBL): 110 / 30 ○ Southbound Right (SBR): 80 / 35
	Main Street East and Street C/Commercial Access	● Implement eastbound left-turn lane with 105 m storage and 50 meter taper.

Future Total Conditions Internal Intersection Operations

Based on the internal intersection operations analysis, the internal street intersections are anticipated to operate satisfactorily with stop control on the minor approaches. Therefore, no additional improvements or operational measures are recommended at this time.

Future Total Conditions External Intersection Operations

2031 Intersection Operations

- The signalized intersection of Highway 140 / Elizabeth Street and Main Street is expected to deteriorate to an overall Level of Service (LOS) "F" during the weekday P.M. and weekend peak hours. The eastbound left-turn movement is forecast to operate poorly during the weekday P.M. and weekend peak hours, while the eastbound through and westbound left-turn movements are expected to operate poorly during the weekend peak hour. The southbound left-turn movement is forecast to operate poorly during all peak hours. A maximum delay of 566.4 seconds is projected for the southbound left-turn movement, with a corresponding v/c ratio of 2.18.
- The 95th percentile queue lengths for the southbound left-turn and southbound right-turn movements at the signalized intersection are expected to exceed the available storage during both the weekday P.M. and weekend peak hours.
- The shared southbound left/through/right movement is also anticipated to operate near capacity during the weekday A.M. peak hour, with an estimated delay of 90.5 seconds.

To address the intersection operations, several improvements are recommended below:

Horizon Year	Intersection/Segment	Improvements
2031	Highway 140/ Elizabeth Street and Main Street	• Signal Optimization • Implement dual southbound left-turn lanes with protected left phase • Implement Northbound right-Turn lane • Provide storage as suggested: ○ Westbound right-turn: Increase to 60 m (increase of 30 m) ○ Northbound left-turn: Increase to 110 m (increase of 40 m)

		- Southbound left-turn: Increase to 150 m (increase of 35 m) - Southbound right-turn: Increase to 35 m (increase of 10 m)
	Killaly Street and Elizabeth Street	Implement All-Way Stop Control

Based on the All-Way Stop Control warrant conducted for the intersection of Killaly Street and Elizabeth Street, the volumes in the average hourly volumes are close to the threshold and the Weekday P.M. peak hour volumes surpass the threshold. Therefore, an All-Way Stop is recommended at the intersection.

It should be noted that Phase 1 of the development may not require the upgrades outlined above and is expected to function adequately without them; this will be confirmed through future Transportation Impact Study Addendums. Any required upgrades will be identified on a phase-by-phase basis through respective future Draft Plan of Subdivision applications.

2036 Intersection Operations

- The unsignalized intersections are generally expected to operate similarly to the 2031 Future Total conditions. The intersection of Highway 140/Elizabeth Street and Main Street East may experience minor additional delays due to background traffic growth. The westbound and northbound through movements are forecast to see small increases in delay, with v/c ratios remaining below 1.0, while the southbound left-turn movement is expected to reach a maximum delay of 106.8 seconds in the Saturday peak.
- Overall, the 95th percentile queues are not expected to change significantly, although the southbound left-turn queue may increase by approximately 5 metres during the weekday PM peak.

2041 Intersection Operations

- Under 2041 Future Total conditions, the unsignalized intersections are generally expected to operate similarly to the 2036 conditions, with minor additional delays forecast at the intersection of Highway 140/Elizabeth Street and Main Street East due to background traffic growth. The westbound and northbound through movements are expected to experience slight increases in delay during the weekday PM and Saturday peaks, with v/c ratios remaining below 1.0, while the southbound left-turn movement may experience delays of up to 10.3 seconds and a maximum v/c ratio of 0.99 in the Saturday peak.
- Overall, the 95th percentile queues are expected to be accommodated within available storage, except for the eastbound and southbound left-turn queues at this intersection, which may exceed storage by approximately 45 metres and 5 metres, respectively, during the weekday PM peak.

2041 Transportation Recommendations

To accommodate the 95th percentile queues at the intersection of Highway 140/Elizabeth Street and Main Street East, it is recommended that the storage lengths for the eastbound left-turn storage should be increased to 160 metres, and the southbound left-turn storage should also be increased to 160 metres

Intersection Spacing Review

The proposed new public road intersections generally comply with local and arterial roadway spacing requirements in accordance with the TAC GDGCR Guidelines (2017), with the exception of Street G in relation to Killaly Street East. Despite the reduced spacing at this location, no significant left-turn queues are anticipated, and no additional storage is required. As such, the intersection of Killaly Street East and Street G is considered operationally supportable.

The Street C access along Main Street East, however, does not meet MTO spacing standards, which require 800 metres between public road connections on a Class 2B Arterial Highway. While the intersection of Main Street East and Snider Road satisfies this requirement, Street C is located 570 metres from Highway 140 and 268 metres from Snider Road. Based on sensitivity analyses, a secondary access along Main Street East is necessary to accommodate the projected traffic volumes associated with the development. Consequently, the Street C access is recommended, as it provides additional capacity and improves overall network performance. Furthermore, the proposed auxiliary lanes between Street C and Snider Road are not expected to create operational or spacing conflicts and are considered supportive from a network planning perspective.

Overall, the proposed public road network, including the recommended Street C access and auxiliary lanes, is anticipated to provide adequate capacity, maintain safe operations, and support efficient traffic flow throughout the study area.

Parking

Per the City of Port Colborne's Comprehensive Zoning y-Law 6575/30/18, April 2018, Section 03, single-detached, attached townhouse dwellings require one parking spaces per dwelling unit and the commercial blocks require minimum one space per 25 square metres GFA. The subject development is anticipated to meet the residential and commercial parking supply. Any details regarding the parking will be provided in subsequent applications.

Active Transportation and Pedestrian Considerations

The subject site is located within an area identified in the draft Active Transportation Master Plan (ATMP) for multiple future cycling and walking corridors. Killaly Street East is planned as a priority east-west cycling route, while Elizabeth Street will serve as a north-south bicycle boulevard. Pedestrian improvements, including continuous sidewalks and enhanced intersection safety, are also planned. The site is expected to provide connections via the 23-metre-wide collector roads, with further right-of-way details to be provided in subsequent submissions.

Conclusion

The study concludes that the proposed mixed-use development can be successfully accommodated from a traffic operations perspective, provided the recommended improvements are implemented. The proposed network enhancements are designed to maintain safe and efficient vehicular, cycling, and pedestrian connectivity throughout the surrounding road network, while supporting the anticipated increase in traffic volumes.

It is anticipated that the commercial area north of Main Street East may be reduced, and this will be further assessed as part of future planning applications. The road network upgrades will be confirmed on a phase-by-phase basis through future Draft Plan of Subdivision applications, ensuring that any necessary modifications are implemented as the development progresses.

Additionally, details regarding right-of-ways, including their configuration and operational requirements, will be addressed through these future applications to ensure the development integrates effectively and safely with the existing transportation network.

The analysis undertaken herein was prepared using the most recent demonstration plan. Any minor changes to the Plan will not materially affect the conclusions contained within this report.

In conclusion, the proposed mixed-use residential/commercial development can be supported from a traffic operations and safety perspective.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.



Aarzoo Dhanani, M.Eng, EIT
Engineering Intern, Transportation

C.F. CROZIER & ASSOCIATES INC.



Brandon Bradt, M. Eng. CEM, P. Eng.
Manager, Transportation Planning

BB/AD

\\Crozier-Files\Projects\2500\2578 - 705 Main, Elite Holdings\6905 - 806 Killaly Street E, Port Colborne\Reports\Transportation\2nd Submission\2026.03.05 - Transportation Impact Study Update - 806 Killaly St.docx

APPENDIX A

Agency Correspondence

Aarzoo Dhanani

From: Dunsmore, Susan <Susan.Dunsmore@niagararegion.ca>
Sent: Thursday, November 2, 2023 4:27 PM
To: Aarzoo Dhanani; David Schulz; Paul.Nunes@ontario.ca
Cc: Aaron Wignall; Brandon Bradt
Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Hello,

The Region has no further comments, we would like to advise that if you are using the Region's guidelines they have been updated and are accessible at:

<https://www.niagararegion.ca/business/default.aspx?topnav=1>

Thank you



Susan M. Dunsmore, P.Eng.

MANAGER, DEVELOPMENT ENGINEERING

Niagara Region, 1815 Sir Isaac Brock Way, Thorold, ON, L2V 4T7

P : (905) 980 - 6000 ext. 3661

W : www.niagararegion.ca

E : susan.dunsmore@niagararegion.ca



From: Aarzoo Dhanani <adhanani@cfcrozier.ca>
Sent: Thursday, October 26, 2023 2:32 PM
To: David Schulz <David.Schulz@portcolborne.ca>; Dunsmore, Susan <Susan.Dunsmore@niagararegion.ca>; Paul.Nunes@ontario.ca
Cc: Aaron Wignall <awignall@cfcrozier.ca>; Brandon Bradt <bbradt@cfcrozier.ca>
Subject: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

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Hello,

C.F. Crozier and Associates Inc. (Crozier) has been retained to prepare a Transportation Impact Study (TIS) in support of the Draft Plan of Subdivision Application, Zoning By-Law Amendment, and Secondary Plan related to the proposed mixed-use development located at 806 Killaly Street in the City of Port Colborne, Niagara Region.

The subject site currently consists of vacant lands surrounded by Killaly Street East to the south, Main Street East (Highway 3) to the north, Elizabeth Street to the west, and Lorraine Road to the south. A small parcel is located to the southeast corner of Killaly Street East and Snider Road as well.

Please note that Snider Road passing through the proposed development is currently not developed to an Urban Standard and is not actively used for public traffic.

The development would be split into five parcels. According to the master plan, the element envisioned for this development include:

- A total of 2242 units consisting of single detached, lane-based townhouse, Street townhouse and Condominium townhouse
- A total of 2.43 ha of commercial area
- Accesses to the roadway and internal intersections

Please see the attached master plan for more details.

We are kindly requesting that you review the ToR and provide feedback regarding our scope of work and request for data.

Study Methodology for the Transportation Impact Study

The following intersections are proposed to be analyzed as part of the scope of the study:

- Main St. E. (Highway 3) at Lorraine Road/Babion Road
- Main St. E. (Highway 3) at Snider Road
- Main St. E. (Highway 3) at Highway 140/Elizabeth Street
- Killaly St. E. at Lorraine Road
- Killaly St. E. at Snider Road
- Killaly St. E. at Elizabeth Street
- All proposed accesses to the development and major internal intersections

We will consult specialty traffic counting firms we typically work with to obtain traffic data for the intersections listed above unless the City of Port Colborne, Niagara Region or MTO has data for these intersections. If the data is available and preferred, please let us know. **Please confirm the above noted intersections are sufficient for the study.**

Analysis Periods and Scenarios

It is proposed that the TIS include weekday A.M. and P.M. peak hours. The peak hours identified would be analyzed for the following assumed time horizons: Full build-out, Five years from build-out and 10-years from build-out.

Please note that the development phasing is currently unknown. If we become aware of the phasing, we will add horizon years for the respective phases.

The horizon years will be analyzed for future background and total traffic conditions. **Please confirm if the peak hour periods and the horizon year is sufficient for the analysis.**

Background Developments

Please confirm if any background development should be included in the analysis. If there are developments that need to be considered, please provide the associated transportation impact studies that should be included in our analysis.

Roadway and Transit Improvements

Please confirm and please provide us with details of the expected roadway changes within the study area network.

Traffic Growth

We kindly request a recommended growth rate applicable to traffic volumes in the study area, to sufficiently reflect future conditions in the horizon years.

Please provide the growth rate that can be used for Highway 3 (Main Street East), Killaly Street East, Elizabeth Road, Lorraine Road and Babion Road, or alternatively any historical data that can be used to calculate the growth rate in combination with the existing traffic data.

Trip Generation and Distribution

Trip generation for the proposed development will be forecasted using the Trip Generation Manual, 11th Edition, prepared by the Institute of Transportation Engineers (ITE). Single-Family Detached Housing (Land Use Code 210), Single-Family Attached Housing (Land Use Code 215) and Multi-Family Housing Low-Rise (Land Use Code 220) will be used to calculate the trips. **Please confirm if this is acceptable.**

Existing traffic and data from the 2016 Transportation Tomorrow Survey (TTS) will be used to determine the trip distribution for the A.M. and P.M. periods to the proposed development. **Please confirm if this is acceptable.**

Analysis Procedures

Weekday A.M. and P.M. peak hours will be analyzed using Synchro 11.0 analysis software based on Highway Capacity Manual (HCM) procedures. **Please confirm if this is acceptable.**

Site Accesses and Internal Roadway Review

The number and location of the proposed accesses will be assessed in accordance with the requirements set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), as well as the MTO TAC Supplement.

Parking Review

The parking supply at the proposed site will be reviewed and compared with the City of Port Colborne's "Comprehensive Zoning By-Law 6575/30/18, April 2018, Section 03". The review will determine whether the proposed parking supply at the site is sufficient to meet the City's By-Law requirements.

Summary

We request the following information for inclusion in the study, along with any comments that arise with regards to the above Terms of Reference.

Please provide:

- Confirmation that the intersections of study are sufficient.
- Relevant growth rate(s) applicable to the roadways of study.
- Confirm the study horizon years are acceptable.
- Any relevant background developments and the associated traffic impact studies that are to be included in our analysis.
- Provide details of any planned roadway or transit improvements in the surrounding study area within the horizon years, if there are any.

I hope the contents outlined in this email are acceptable. Should you not be the appropriate person for correspondence, it would be appreciated to be directed to the appropriate contact.

Please feel free to contact us if you have any questions or require further information.

Kind Regards,

Aarzoo Dhanani

Aarzo Dhanani, M.Eng., EIT
Engineering Intern, Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph

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Aarzo Dhanani

From: David Schulz <David.Schulz@portcolborne.ca>
Sent: Friday, November 10, 2023 4:06 PM
To: Brandon Bradt; Ted Lagakos
Cc: Amirpour, Siavash (MTO); Nunes, Paul (MTO); Pillay, David (MTO); Aaron Wignall; Aarzo Dhanani
Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)
Attachments: 18. Traffic Impact Study, IBI, 19Oct20.pdf

Hi Brandon,

Ted can correct me if I am wrong, but I believe the MTO is not in a position to provide comments on the ToR until the proposed site design meets their criteria.

I would think from a City perspective, we would be supportive of the MTO downloading this area of the highway in order to better support the development from an access and planning perspective, however I am not sure how those logistics would be worked out. I am open to keeping the discussion going with respect to that.

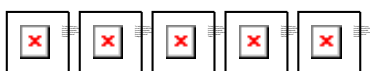
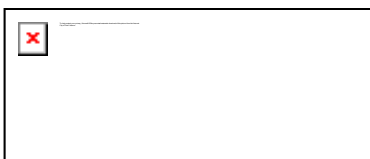
The Snider Road road allowance is still in place and would be supported to be used at minimum to access the site.

Please find the TIS for the Port Colborne Quarries expansion attached. This development is still very relevant. Council will be making a decision on the land use for the expansion on Tuesday.

I hope this helps.

Regards,

David



David Schulz BURPI, MCIP, RPP
Senior Planner
City of Port Colborne

66 Charlotte Street
Port Colborne, ON L3K 3C8

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From: Brandon Bradt <bbradt@cfcrozier.ca>

Sent: Wednesday, November 8, 2023 1:35 PM

To: David Schulz <David.Schulz@portcolborne.ca>; Ted Lagakos <ted.lagakos@ontario.ca>

Cc: Amirpour, Siavash (MTO) <Siavash.Amirpour@ontario.ca>; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>; Pillay, David (MTO) <David.Pillay@ontario.ca>; Aaron Wignall <awignall@cfcrozier.ca>; Aarzo Dhanani <adhanani@cfcrozier.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Thanks David,

We note that the email you attached from Ted is from 2021. Should we assume the MTO doesn't wish to change anything within that given the TOR we sent? We note that no confirmation has been provided on the study area network we proposed as well, which we will need as soon as possible so that we can schedule traffic counts.

We also understand that the accesses as currently proposed do not meet ministry guidelines, was there any discussion between yourself and Ted on whether this portion of Main Street would eventually be transferred to out of MTO ownership similar to Main Street west of Highway 140 given the proposed development would effectively expand the urbanized area of Port Colborne? This will be key in us going back to our client to refine the draft plan.

Can we assume that the Snider Road alignment as shown within the City's current ROW is acceptable? This is also a major piece of the draft plan we need to confirm.

Lastly, is there anything you can share on the Port Colborne Quarries expansion mentioned in Ted's email? TIS report etc, assuming that development is still relevant?

Kind Regards,

Brandon

Brandon Bradt, M.Eng. CEM, P.Eng.
Manager (Planning), Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph



From: David Schulz <David.Schulz@portcolborne.ca>

Sent: Wednesday, November 8, 2023 11:06 AM

To: Ted Lagakos <ted.lagakos@ontario.ca>; Aarzoo Dhanani <adhanani@cfcrozier.ca>

Cc: Amirpour, Siavash (MTO) <Siavash.Amirpour@ontario.ca>; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>; Pillay, David (MTO) <David.Pillay@ontario.ca>; Brandon Bradt <bbradt@cfcrozier.ca>; Aaron Wignall <awignall@cfcrozier.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Hi Aarzoo and Ted,

I sent a response on Monday this week based on my conversation with Ted.

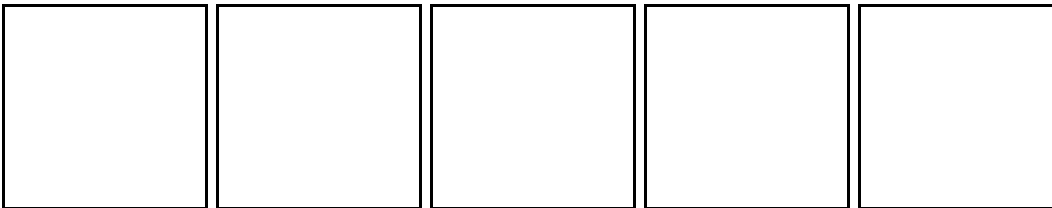
I have attached it to this email.

Thanks,

David



David Schulz BURPI, MCIP, RPP
Senior Planner
City of Port Colborne



66 Charlotte Street
Port Colborne, ON L3K 3C8
Phone 905-835-2900 x202
Email David.Schulz@portcolborne.ca

www.portcolborne.ca

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From: Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>

Sent: Wednesday, November 8, 2023 10:57 AM

To: Aarzoo Dhanani <adhanani@cfcrozier.ca>

Cc: Amirpour, Siavash (MTO) <Siavash.Amirpour@ontario.ca>; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>; Pillay,

David (MTO) <David.Pillay@ontario.ca>; Brandon Bradt <bbradt@cfcrozier.ca>; Aaron Wignall <awignall@cfcrozier.ca>;
David Schulz <David.Schulz@portcolborne.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Afternoon Aarzo,

I spoke directly with David at the municipality and they will be getting back to you regarding this request.

Ted Lagakos | Senior Project Manager (West)

Highway Corridor Management Section | Central Operations | Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor, Toronto, ON. M3M 0B7
Telephone: 416-268-3932 | Email: ted.lagakos@ontario.ca



From: Aarzo Dhanani <adhanani@cfcrozier.ca>

Sent: November 8, 2023 10:45 AM

To: Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>

Cc: Amirpour, Siavash (MTO) <Siavash.Amirpour@ontario.ca>; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>; Pillay, David (MTO) <David.Pillay@ontario.ca>; Brandon Bradt <bbradt@cfcrozier.ca>; Aaron Wignall <awignall@cfcrozier.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

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Good morning Ted,

Hope you are doing well!

I'm just following up to see if you've had the meeting with the Town? We are seeking to obtain traffic signal timing data for the intersection of Main St. E. (Highway 3) at Highway 140/Elizabeth Street as well. Please let us know if you'd like us to contact the appropriate source for obtaining this data.

Furthermore, could you confirm whether the selected study intersections are suitable in the meantime? We would like to proceed with scheduling the traffic counts.

Kind Regards,

Aarzo

Aarzo Dhanani, M.Eng., EIT
Engineering Intern, Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Brandon Bradt <bbradt@cfcrozier.ca>

Sent: Wednesday, November 1, 2023 2:45 PM

To: Ted Lagakos <ted.lagakos@ontario.ca>

Cc: Amirpour, Siavash (MTO) <Siavash.Amirpour@ontario.ca>; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>; Pillay, David (MTO) <David.Pillay@ontario.ca>; Aaron Wignall <awignall@cfcrozier.ca>; Aarzoo Dhanani <adhanani@cfcrozier.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Makes sense, we'll take this back to the team in the meantime too.

I'll likely give you a ring once I've had a chance to discuss internally.

Cheers,

Brandon

Brandon Bradt, M.Eng. CEM, P.Eng.
Manager (Planning), Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>

Sent: Wednesday, November 1, 2023 9:31 AM

To: Brandon Bradt <bbradt@cfcrozier.ca>

Cc: Amirpour, Siavash (MTO) <Siavash.Amirpour@ontario.ca>; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>; Pillay, David (MTO) <David.Pillay@ontario.ca>; Aaron Wignall <awignall@cfcrozier.ca>; Aarzoo Dhanani <adhanani@cfcrozier.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Morning,

I would like to have a discussion with the Town first as this is a municipal led process that we participate in before having a possible follow up meeting.

You can call me directly if you want to discuss further.

Take care,

Ted Lagakos | Senior Project Manager (West)

Highway Corridor Management Section | Central Operations | Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor, Toronto, ON. M3M 0B7
Telephone: 416-268-3932 | Email: ted.lagakos@ontario.ca



From: Brandon Bradt <bbradt@cfcrozier.ca>

Sent: November 1, 2023 9:23 AM

To: Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>

Cc: Amirpour, Siavash (MTO) <Siavash.Amirpour@ontario.ca>; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>; Pillay, David (MTO) <David.Pillay@ontario.ca>; Aaron Wignall <awignall@cfcrozier.ca>; Aarzoo Dhanani <adhanani@cfcrozier.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

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Good Morning Ted,

Thanks for the quick response on this. Would it be appropriate to have call between the MTO, Town and yourself to discuss this issue? The applicant would like to submit the application before the end of the year so I'm thinking this may be the fastest path forward to make sure we're proposing something that can be supported by the MTO.

Let me know if that makes sense.

Kind Regards,

Brandon

Brandon Bradt, M.Eng. CEM, P.Eng.
Manager (Planning), Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>

Sent: Wednesday, November 1, 2023 9:10 AM

To: Aarzoo Dhanani <adhanani@cfcrozier.ca>

Cc: Brandon Bradt <bbradt@cfcrozier.ca>; Amirpour, Siavash (MTO) <Siavash.Amirpour@ontario.ca>; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>; Pillay, David (MTO) <David.Pillay@ontario.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Morning Aarzoo,

This is a follow up to my recent voicemail.

Comments on your TOR/preparation of a traffic study is premature at this time as the site does not comply with the ministry's access management policies (e.g. access onto Hwy 3 is not permitted). Until the access issues are resolved to our satisfaction, we cannot support this site moving forward.

Note that I have already sent an email to David at the Town to discuss the access issue further.

Please do not hesitate to call me at the number below if you have any further questions.

Take care,

Ted Lagakos | Senior Project Manager (West)

Highway Corridor Management Section | Central Operations | Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor, Toronto, ON. M3M 0B7
Telephone: 416-268-3932 | Email: ted.lagakos@ontario.ca



From: Aarzoo Dhanani <adhanani@cfcrozier.ca>

Sent: November 1, 2023 8:50 AM

To: Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>

Cc: Brandon Bradt <bbradt@cfcrozier.ca>

Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

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Good morning Mr. Ted,

Hope you are doing well!

I wish to follow up on the Terms of Reference below for the site located at 806 Killaly Street East in the City of Port Colborne, Niagara Region. We are in the process of putting together a Transportation Impact Study and would greatly appreciate if you could provide prompt feedback due to pressing project timelines.

Should you have any concerns or questions, please do not hesitate to reach out to us.

Thank you for your attention to this matter.

Kind Regards,

Aarzoo

Aarzoo Dhanani, M.Eng., EIT
Engineering Intern, Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Aarzoo Dhanani
Sent: Thursday, October 26, 2023 4:08 PM
To: Ted Lagakos <ted.lagakos@ontario.ca>
Cc: Brandon Bradt <bbradt@cfcrozier.ca>; Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Good afternoon Ted,

Regarding the Terms of Reference below, could you please review them and let us know if you have any questions!

Kind Regards,

Aarzoo

From: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>
Sent: Thursday, October 26, 2023 3:43 PM
To: Aarzoo Dhanani <adhanani@cfcrozier.ca>
Cc: David Schulz <David.Schulz@portcolborne.ca>; 'Dunsmore, Susan' <Susan.Dunsmore@niagararegion.ca>
Subject: RE: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

Hello Aarzoo,

Please redirect this email to Mr. Ted Lagakos, the MTO Senior Project Manager for the Region of Niagara.

Ted Lagakos | Senior Project Manager (West)
Highway Corridor Management Section | Central Operations | Ministry of Transportation
Telephone: 416-268-3932 | Email: ted.lagakos@ontario.ca

Thanks,

PaulN

From: Aarzoo Dhanani <adhanani@cfcrozier.ca>
Sent: October 26, 2023 2:32 PM
To: david.schulz@portcolborne.ca; Susan.Dunsmore@niagararegion.ca; Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>

Cc: Aaron Wignall <awignall@cfcrozier.ca>; Brandon Bradt <bbradt@cfcrozier.ca>

Subject: 806 Killaly St E - Transportation Impact Study - Terms of Reference CFC(#2578-6905)

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Hello,

C.F. Crozier and Associates Inc. (Crozier) has been retained to prepare a Transportation Impact Study (TIS) in support of the Draft Plan of Subdivision Application, Zoning By-Law Amendment, and Secondary Plan related to the proposed mixed-use development located at 806 Killaly Street in the City of Port Colborne, Niagara Region.

The subject site currently consists of vacant lands surrounded by Killaly Street East to the south, Main Street East (Highway 3) to the north, Elizabeth Street to the west, and Lorraine Road to the south. A small parcel is located to the southeast corner of Killaly Street East and Snider Road as well.

Please note that Snider Road passing through the proposed development is currently not developed to an Urban Standard and is not actively used for public traffic.

The development would be split into five parcels. According to the master plan, the element envisioned for this development include:

- A total of 2242 units consisting of single detached, lane-based townhouse, Street townhouse and Condominium townhouse
- A total of 2.43 ha of commercial area
- Accesses to the roadway and internal intersections

Please see the attached master plan for more details.

We are kindly requesting that you review the ToR and provide feedback regarding our scope of work and request for data.

Study Methodology for the Transportation Impact Study

The following intersections are proposed to be analyzed as part of the scope of the study:

- Main St. E. (Highway 3) at Lorraine Road/Babion Road
- Main St. E. (Highway 3) at Snider Road
- Main St. E. (Highway 3) at Highway 140/Elizabeth Street
- Killaly St. E. at Lorraine Road
- Killaly St. E. at Snider Road
- Killaly St. E. at Elizabeth Street
- All proposed accesses to the development and major internal intersections

We will consult specialty traffic counting firms we typically work with to obtain traffic data for the intersections listed above unless the City of Port Colborne, Niagara Region or MTO has data for these intersections. If the data is available and preferred, please let us know. **Please confirm the above noted intersections are sufficient for the study.**

Analysis Periods and Scenarios

It is proposed that the TIS include weekday A.M. and P.M. peak hours. The peak hours identified would be analyzed for the following assumed time horizons: Full build-out, Five years from build-out and 10-years from build-out.

Please note that the development phasing is currently unknown. If we become aware of the phasing, we will add horizon years for the respective phases.

The horizon years will be analyzed for future background and total traffic conditions. **Please confirm if the peak hour periods and the horizon year is sufficient for the analysis.**

Background Developments

Please confirm if any background development should be included in the analysis. If there are developments that need to be considered, please provide the associated transportation impact studies that should be included in our analysis.

Roadway and Transit Improvements

Please confirm and please provide us with details of the expected roadway changes within the study area network.

Traffic Growth

We kindly request a recommended growth rate applicable to traffic volumes in the study area, to sufficiently reflect future conditions in the horizon years.

Please provide the growth rate that can be used for Highway 3 (Main Street East), Killaly Street East, Elizabeth Road, Lorraine Road and Babion Road, or alternatively any historical data that can be used to calculate the growth rate in combination with the existing traffic data.

Trip Generation and Distribution

Trip generation for the proposed development will be forecasted using the Trip Generation Manual, 11th Edition, prepared by the Institute of Transportation Engineers (ITE). Single-Family Detached Housing (Land Use Code 210), Single-Family Attached Housing (Land Use Code 215) and Multi-Family Housing Low-Rise (Land Use Code 220) will be used to calculate the trips. **Please confirm if this is acceptable.**

Existing traffic and data from the 2016 Transportation Tomorrow Survey (TTS) will be used to determine the trip distribution for the A.M. and P.M. periods to the proposed development. **Please confirm if this is acceptable.**

Analysis Procedures

Weekday A.M. and P.M. peak hours will be analyzed using Synchro 11.0 analysis software based on Highway Capacity Manual (HCM) procedures. **Please confirm if this acceptable.**

Site Accesses and Internal Roadway Review

The number and location of the proposed accesses will be assessed in accordance with the requirements set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), as well as the MTO TAC Supplement.

Parking Review

The parking supply at the proposed site will be reviewed and compared with the City of Port Colborne's "Comprehensive Zoning By-Law 6575/30/18, April 2018, Section 03". The review will determine whether the proposed parking supply at the site is sufficient to meet the City's By-Law requirements.

Summary

We request the following information for inclusion in the study, along with any comments that arise with regards to the above Terms of Reference.

Please provide:

- Confirmation that the intersections of study are sufficient.
- Relevant growth rate(s) applicable to the roadways of study.
- Confirm the study horizon years are acceptable.

- Any relevant background developments and the associated traffic impact studies that are to be included in our analysis.
- Provide details of any planned roadway or transit improvements in the surrounding study area within the horizon years, if there are any.

I hope the contents outlined in this email are acceptable. Should you not be the appropriate person for correspondence, it would be appreciated to be directed to the appropriate contact.

Please feel free to contact us if you have any questions or require further information.

Kind Regards,

Aarzo Dhanani

Aarzo Dhanani, M.Eng., EIT
Engineering Intern, Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph

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Aarzoo Dhanani

From: Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>
Sent: Tuesday, September 14, 2021 3:56 PM
To: David Schulz
Cc: Dutchak, Lance (MTO); Nunes, Paul (MTO); Hakomaki, Eric (MTO); Lawrence, Morgan (MTO)
Subject: RE: Port Colborne - Highway 3/Killaly Street East Secondary Plan - Traffic Terms of Reference

Afternoon David,

Thank you for bringing this issue to our attention. Paul Nunes forwarded this request to my attention for response.

The following are the ministry's comments:

Terms of Reference

- On other development proposals, the ministry has accepted the Region of Niagara SatFlow of 1750 and PHF of 0.92.
- The ministry is not favourable to the location of any school within 150m or fronting onto Highway 3.
- The use of Synchro / SimTraffic version 11 is acceptable.
- Include analysis period of Weekend Mid-day. Horizon years: 5 and 10 years after Full build-out / occupancy.
- Indicate phases of the development and expected completion / full occupancy of each phase, if applicable.
- For background growth, the ministry will accept volumes up to 2019 projected to the base year of analysis using an appropriate background growth rate.
- Background growth rate can be estimated from historical trends in AADTs, don't necessarily default to 2%.
- The TOR states 621 residential units are proposed. Please confirm how many commercial / institutional uses are proposed as well.
- The largest development in proximity is the Port Colborne Quarries expansion. Applicant is advised to contact the Town for details on this development.

Preliminary Comments on Proposed Concept

- In principle, the ministry has no objection to the proposed development.

- Subject lands are within the ministry's permit control limits (extends up to 800m from MTO property); hence, ministry permits will be required (e.g. grading/servicing, building and land use, etc..). Please make the proponent aware that MTO permits will need to be secured prior to the commencement of any on-site works.
- At this time, setbacks will be a minimum of 14.0m from all ministry lands (may change depending when proponent plans to start construction). No features which are essential to the overall viability of the site are permitted within the MTO 14.0m setback area. Essential features include, but are not limited to, buildings/structures (above or below grade), required parking spaces (required per the municipal zoning by-law), retaining walls, utilities (includes parking lot lighting), stormwater management features, snow storage, loading spaces, fire routes, essential landscaping, etc. Please note that non-essential parking may be located within the MTO 14.0m setback area and must be set back a minimum of 3m from the MTO property line. Information regarding the application process, forms and the policy can be found at the link:

<http://www.mto.gov.on.ca/english/engineering/management/corridor/building.shtml>

- As part of a future subdivision/site plan application process, MTO will most likely impose draft plan/site plan conditions/requirements for (i) engineering/internal road construction plans, (ii) lighting, (iii) drainage and, (iv) traffic. Please make the applicant aware that any required highway improvements, as a result of the subject development, will require the proponent to enter into a legal agreement with MTO. Proponent will be 100% responsible for all associated costs (design/construction, etc..).
- The following materials will most likely need to be submitted by the proponent to support MTO's draft plan conditions/requirements:
 - One (1) digital copy of the subdivision/site plan;
 - One (1) digital copy of the civil engineering plans, stamped and signed by a Professional Engineer of Ontario;
 - One (1) digital copy of a Stormwater Management Report, stamped and signed by a Professional Engineer of Ontario;
 - One (1) digital copy of the Traffic Impact Study, prepared by a RAQS qualified consultant, stamped and signed by a Professional Engineer of Ontario.
 - One (1) digital copy of the Landscape Plans.
 - One (1) digital copy of the Illumination Plan and associated materials. The Illumination Plan is to include:
 - To-scale plan showing the site location and the highway
 - Lighting layout showing pole/luminaire locations and orientation
 - Luminaire installation info such as mounting height, orientation angle, shielding info, etc.
 - Luminaire material info including catalog info and photometric data file
 - Lighting calculation plan showing horizontal illuminance levels at and beyond the MTO right-of-way in metric units of lux to 1 decimal place minimum
- Regarding light trespass onto MTO right-of-way, the ministry requires zero light trespass onto our right-of-way.
- MTO's 14.0 m setback line must be clearly and accurately illustrated on all plans. Also, non-essential parking within the 14.0 m setback must be clearly identified with a note on all plans.

- All plans/materials and/or technical submissions must adhere to MTO standards.
- All proposed accesses onto MTO lands/provincial highways must adhere to the ministry's "Highway Access Management Guidelines".

I trust that this is satisfactory at this time. Please do not hesitate to contact me if you have any questions.

Sincerely,
Ted Lagakos
Senior Project Manager (Niagara/Hamilton)
Highway Corridor Management Section - Central Operations

Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor
Toronto, ON M3M 0B7

Phone: 416-268-3932

E-Mail: ted.lagakos@ontario.ca

Web: www.mto.gov.on.ca/english/engineering/management/corridor

From: David Schulz <David.Schulz@portcolborne.ca>

Sent: August 20, 2021 9:38 AM

To: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>

Subject: Port Colborne - Highway 3/Killaly Street East Secondary Plan - Traffic Terms of Reference

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Hi Paul,

Hope you are doing well!

We have received this traffic terms of reference regarding the anticipated secondary plan for the lands attached. I would appreciate if you could take a look and provide any commentary you may have from the MTO.

If you are not the correct contact for something like this, please advise who/where I should send it.

Please let me know if you have any questions.

Thanks,

David

David Schulz
Planner
City of Port Colborne

Phone 905-835-2900 Ext. 202

Email David.Schulz@portcolborne.ca

66 Charlotte Street
Port Colborne, ON L3K 3C8

www.portcolborne.ca



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APPENDIX B

Official Plan Excerpts

Port Colborne

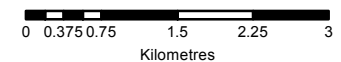
Official Plan

Schedule D: Transportation

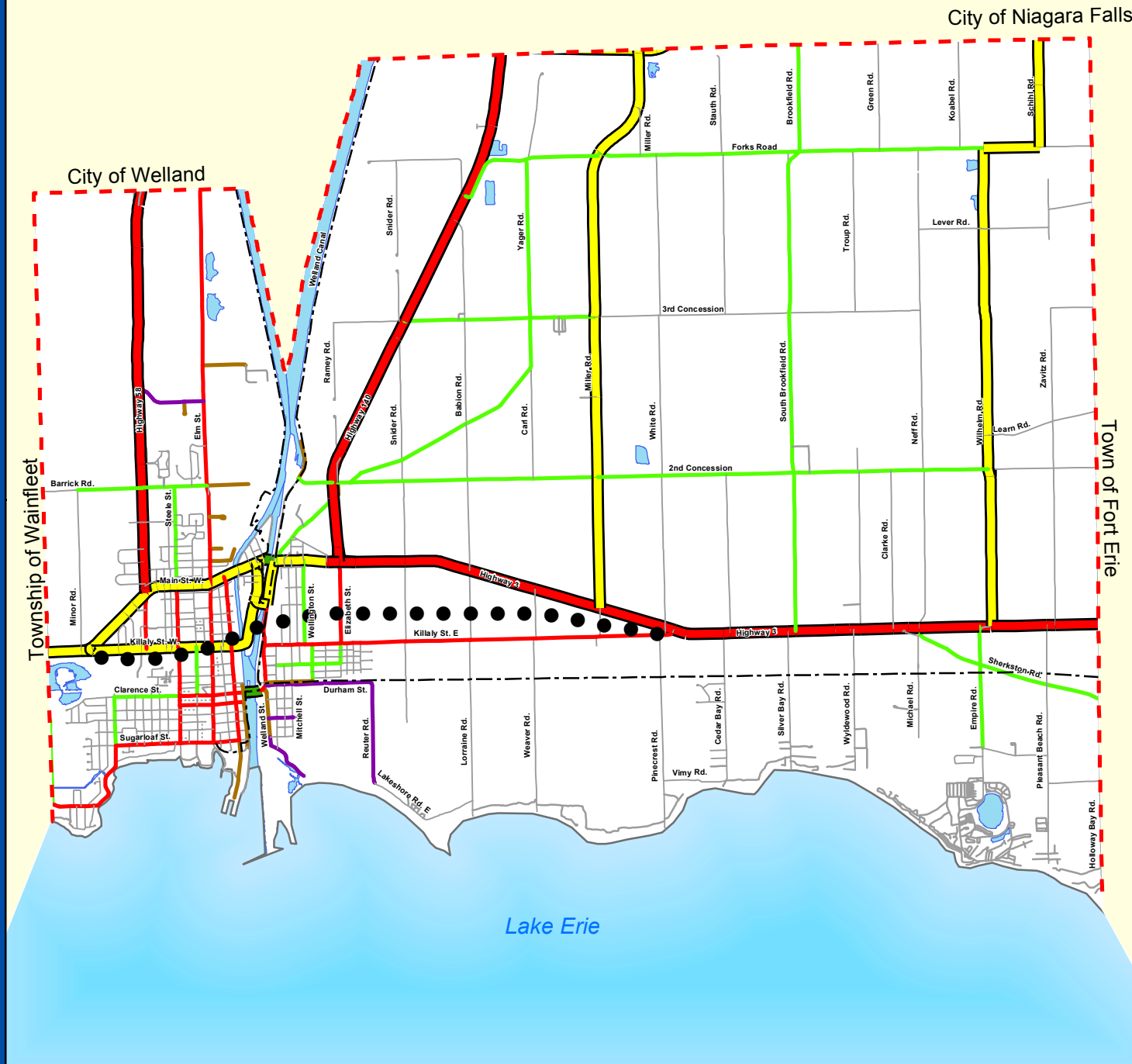
- Municipal Boundary
 - Future Highway 3
 - Port Colborne Bike Trails
-
- Roads Classification**
- Laneway
 - Local Road
 - Local Commercial or Industrial
 - Arterial
 - Collector
 - Collector Commercial or Industrial
 - St. Lawrence Seaway
 - Regional
 - Provincial

Schedule Notes:

This map is for general illustration purposes only. For boundary interpretations please contact the City of Port Colborne Planning and Development Department.



1:75,000



APPENDIX C

Traffic Data



Turning Movement Count (1 . MAIN ST E & HWY 140 / ELIZABETH ST)

Start Time	N Approach HWY 140						E Approach MAIN ST E						S Approach ELIZABETH ST						W Approach MAIN ST E						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:00:00	27	10	3	0	0	40	12	22	9	0	0	43	10	27	8	0	0	45	3	30	32	0	0	65	193		
07:15:00	35	19	2	0	0	56	9	36	10	0	0	55	11	26	9	0	3	46	8	30	55	0	0	93	250		
07:30:00	35	14	3	0	0	52	14	37	10	0	0	61	5	42	16	0	0	63	10	47	56	0	0	113	289		
07:45:00	40	18	5	0	0	63	12	50	9	0	0	71	10	38	4	0	2	52	8	39	31	0	0	78	264	996	
08:00:00	35	22	8	0	0	65	15	41	12	0	0	68	14	33	14	0	0	61	3	19	22	0	0	44	238	1041	
08:15:00	39	18	5	0	0	62	13	43	9	0	0	65	10	37	15	0	0	62	5	29	34	0	0	68	257	1048	
08:30:00	39	22	5	0	0	66	14	40	8	0	0	62	7	24	15	0	2	46	5	36	19	0	0	60	234	993	
08:45:00	35	21	8	0	0	64	12	52	17	0	0	81	9	20	18	0	1	47	39	33	31	0	0	103	295	1024	
09:00:00	31	14	5	0	0	50	12	45	13	0	0	70	12	32	21	0	1	65	23	31	25	0	0	79	264	1050	
09:15:00	32	9	7	0	0	48	10	27	9	0	0	46	9	14	16	0	4	39	8	31	30	0	0	69	202	995	
09:30:00	30	15	7	0	0	52	9	42	3	0	0	54	10	13	17	0	1	40	8	22	22	0	0	52	198	959	
09:45:00	46	10	9	0	0	65	7	34	10	0	0	51	6	24	15	0	0	45	5	36	27	0	0	68	229	893	
BREAK																											
16:00:00	75	23	11	0	0	109	9	72	10	0	0	91	13	40	22	0	0	75	8	52	45	0	0	105	380		
16:15:00	79	22	13	0	0	114	11	67	6	0	0	84	11	30	13	0	0	54	12	65	52	0	0	129	381		
16:30:00	53	22	18	0	0	93	15	45	3	0	0	63	6	22	9	0	0	37	6	50	50	0	0	106	299		
16:45:00	70	27	20	0	0	117	10	45	2	0	0	57	7	32	9	0	0	48	11	44	43	0	0	98	320	1380	
17:00:00	72	23	10	0	0	105	12	44	4	0	0	60	7	36	10	0	0	53	9	42	44	0	0	95	313	1313	
17:15:00	53	19	19	0	0	91	5	38	6	0	0	49	4	25	13	0	0	42	9	42	45	0	0	96	278	1210	
17:30:00	73	18	7	0	0	98	14	37	5	0	0	56	6	13	6	0	0	25	5	48	22	0	2	75	254	1165	
17:45:00	42	24	12	0	0	78	4	35	4	0	0	43	2	14	15	0	0	31	16	30	27	0	0	73	225	1070	
18:00:00	48	25	6	0	0	79	7	32	7	0	0	46	5	18	9	0	0	32	9	56	39	0	0	104	261	1018	
18:15:00	47	16	6	0	0	69	3	30	7	0	0	40	5	13	9	0	0	27	11	37	31	0	0	79	215	955	
18:30:00	30	34	5	0	0	69	3	21	9	0	0	33	4	16	13	0	0	33	9	18	28	0	0	55	190	891	
18:45:00	27	11	8	0	0	46	9	19	5	0	0	33	6	16	8	0	0	30	8	19	16	0	0	43	152	818	
Grand Total	1093	456	202	0	0	1751	241	954	187	0	0	1382	189	605	304	0	14	1098	238	886	826	0	2	1950	6181	-	
Approach%	62.4%	26%	11.5%	0%		-	17.4%	69%	13.5%	0%		-	17.2%	55.1%	27.7%	0%		-	12.2%	45.4%	42.4%	0%		-	-	-	
Totals %	17.7%	7.4%	3.3%	0%		28.3%	3.9%	15.4%	3%	0%		22.4%	3.1%	9.8%	4.9%	0%		17.8%	3.9%	14.3%	13.4%	0%		31.5%	-	-	
Heavy	75	13	17	0		-	17	52	4	0		-	3	16	8	0		-	6	60	58	0		-	-	-	
Heavy %	6.9%	2.9%	8.4%	0%		-	7.1%	5.5%	2.1%	0%		-	1.6%	2.6%	2.6%	0%		-	2.5%	6.8%	7%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)

Start Time	N Approach HWY 140						E Approach MAIN ST E						S Approach ELIZABETH ST						W Approach MAIN ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	39	18	5	0	0	62	13	43	9	0	0	65	10	37	15	0	0	62	5	29	34	0	0	68	257
08:30:00	39	22	5	0	0	66	14	40	8	0	0	62	7	24	15	0	2	46	5	36	19	0	0	60	234
08:45:00	35	21	8	0	0	64	12	52	17	0	0	81	9	20	18	0	1	47	39	33	31	0	0	103	295
09:00:00	31	14	5	0	0	50	12	45	13	0	0	70	12	32	21	0	1	65	23	31	25	0	0	79	264
Grand Total	144	75	23	0	0	242	51	180	47	0	0	278	38	113	69	0	4	220	72	129	109	0	0	310	1050
Approach%	59.5%	31%	9.5%	0%		-	18.3%	64.7%	16.9%	0%		-	17.3%	51.4%	31.4%	0%		-	23.2%	41.6%	35.2%	0%		-	-
Totals %	13.7%	7.1%	2.2%	0%		23%	4.9%	17.1%	4.5%	0%		26.5%	3.6%	10.8%	6.6%	0%		21%	6.9%	12.3%	10.4%	0%		29.5%	-
PHF	0.92	0.85	0.72	0		0.92	0.91	0.87	0.69	0		0.86	0.79	0.76	0.82	0		0.85	0.46	0.9	0.8	0		0.75	-
Heavy	20	2	7	0		29	7	19	2	0		28	1	6	1	0		8	6	14	11	0		31	-
Heavy %	13.9%	2.7%	30.4%	0%		12%	13.7%	10.6%	4.3%	0%		10.1%	2.6%	5.3%	1.4%	0%		3.6%	8.3%	10.9%	10.1%	0%		10%	-
Lights	124	73	16	0		213	44	161	45	0		250	37	107	68	0		212	66	115	98	0		279	-
Lights %	86.1%	97.3%	69.6%	0%		88%	86.3%	89.4%	95.7%	0%		89.9%	97.4%	94.7%	98.6%	0%		96.4%	91.7%	89.1%	89.9%	0%		90%	-
Single-Unit Trucks	8	2	3	0		13	5	9	0	0		14	0	0	1	0		1	1	9	1	0		11	-
Single-Unit Trucks %	5.6%	2.7%	13%	0%		5.4%	9.8%	5%	0%	0%		5%	0%	0%	1.4%	0%		0.5%	1.4%	7%	0.9%	0%		3.5%	-
Buses	0	0	1	0		1	1	4	2	0		7	1	4	0	0		5	5	4	2	0		11	-
Buses %	0%	0%	4.3%	0%		0.4%	2%	2.2%	4.3%	0%		2.5%	2.6%	3.5%	0%	0%		2.3%	6.9%	3.1%	1.8%	0%		3.5%	-
Articulated Trucks	12	0	3	0		15	1	6	0	0		7	0	2	0	0		2	0	1	8	0		9	-
Articulated Trucks %	8.3%	0%	13%	0%		6.2%	2%	3.3%	0%	0%		2.5%	0%	1.8%	0%	0%		0.9%	0%	0.8%	7.3%	0%		2.9%	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	4	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	100%	-	-	-	-	-	0%	-	-



Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)

Start Time	N Approach HWY 140						E Approach MAIN ST E						S Approach ELIZABETH ST						W Approach MAIN ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	75	23	11	0	0	109	9	72	10	0	0	91	13	40	22	0	0	75	8	52	45	0	0	105	380
16:15:00	79	22	13	0	0	114	11	67	6	0	0	84	11	30	13	0	0	54	12	65	52	0	0	129	381
16:30:00	53	22	18	0	0	93	15	45	3	0	0	63	6	22	9	0	0	37	6	50	50	0	0	106	299
16:45:00	70	27	20	0	0	117	10	45	2	0	0	57	7	32	9	0	0	48	11	44	43	0	0	98	320
Grand Total	277	94	62	0	0	433	45	229	21	0	0	295	37	124	53	0	0	214	37	211	190	0	0	438	1380
Approach%	64%	21.7%	14.3%	0%		-	15.3%	77.6%	7.1%	0%		-	17.3%	57.9%	24.8%	0%		-	8.4%	48.2%	43.4%	0%		-	-
Totals %	20.1%	6.8%	4.5%	0%		31.4%	3.3%	16.6%	1.5%	0%		21.4%	2.7%	9%	3.8%	0%		15.5%	2.7%	15.3%	13.8%	0%		31.7%	-
PHF	0.88	0.87	0.78	0		0.93	0.75	0.8	0.53	0		0.81	0.71	0.78	0.6	0		0.71	0.77	0.81	0.91	0		0.85	-
Heavy	10	2	3	0		15	1	4	0	0		5	0	3	2	0		5	0	14	9	0		23	-
Heavy %	3.6%	2.1%	4.8%	0%		3.5%	2.2%	1.7%	0%	0%		1.7%	0%	2.4%	3.8%	0%		2.3%	0%	6.6%	4.7%	0%		5.3%	-
Lights	267	92	59	0		418	44	225	21	0		290	37	121	51	0		209	37	197	181	0		415	-
Lights %	96.4%	97.9%	95.2%	0%		96.5%	97.8%	98.3%	100%	0%		98.3%	100%	97.6%	96.2%	0%		97.7%	100%	93.4%	95.3%	0%		94.7%	-
Single-Unit Trucks	5	1	2	0		8	1	1	0	0		2	0	1	0	0		1	0	7	6	0		13	-
Single-Unit Trucks %	1.8%	1.1%	3.2%	0%		1.8%	2.2%	0.4%	0%	0%		0.7%	0%	0.8%	0%	0%		0.5%	0%	3.3%	3.2%	0%		3%	-
Buses	1	0	1	0		2	0	3	0	0		3	0	0	2	0		2	0	4	2	0		6	-
Buses %	0.4%	0%	1.6%	0%		0.5%	0%	1.3%	0%	0%		1%	0%	0%	3.8%	0%		0.9%	0%	1.9%	1.1%	0%		1.4%	-
Articulated Trucks	4	1	0	0		5	0	0	0	0		0	0	2	0	0		2	0	3	1	0		4	-
Articulated Trucks %	1.4%	1.1%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		0.9%	0%	1.4%	0.5%	0%		0.9%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)





Turning Movement Count (1 . MAIN ST E & HWY 140 / ELIZABETH ST)

Start Time	N Approach HWY 140						E Approach MAIN ST E						S Approach ELIZABETH ST						W Approach MAIN ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
10:00:00	27	15	5	0	0	47	7	55	8	0	0	70	7	22	31	0	0	60	12	34	42	0	0	88	265	
10:15:00	26	14	7	0	0	47	6	48	11	0	0	65	9	28	49	0	0	86	17	46	30	0	0	93	291	
10:30:00	41	22	3	0	0	66	12	37	11	0	0	60	10	30	18	0	0	58	15	35	38	0	0	88	272	
10:45:00	38	13	4	0	0	55	11	54	10	1	0	76	16	31	18	0	0	65	12	37	34	0	0	83	279	1107
11:00:00	33	13	5	0	0	51	9	47	8	0	0	64	11	19	23	0	0	53	16	27	25	0	0	68	236	1078
11:15:00	30	17	11	0	0	58	15	43	12	0	0	70	9	34	38	0	0	81	17	49	35	0	0	101	310	1097
11:30:00	38	17	6	0	0	61	14	45	8	0	0	67	8	17	20	0	0	45	18	54	34	0	0	106	279	1104
11:45:00	31	20	7	0	0	58	9	39	2	0	0	50	10	25	21	0	0	56	14	35	36	0	0	85	249	1074
12:00:00	31	14	6	0	0	51	11	42	7	0	0	60	9	19	17	0	0	45	9	36	45	0	0	90	246	1084
12:15:00	39	15	9	0	0	63	13	44	10	0	0	67	22	34	26	0	0	82	13	37	34	0	0	84	296	1070
12:30:00	29	15	4	0	0	48	10	45	9	0	0	64	5	21	28	0	0	54	10	50	39	0	0	99	265	1056
12:45:00	31	12	7	0	0	50	10	41	15	0	0	66	10	28	16	0	0	54	9	49	32	0	0	90	260	1067
13:00:00	49	17	16	0	0	82	13	42	4	0	0	59	6	24	19	0	0	49	6	40	27	0	1	73	263	1084
13:15:00	48	17	11	0	0	76	10	27	10	0	0	47	14	28	11	0	0	53	3	47	36	0	0	86	262	1050
13:30:00	32	14	14	0	0	60	13	33	5	0	0	51	7	37	29	0	0	73	5	42	39	0	0	86	270	1055
13:45:00	41	23	13	0	0	77	4	47	5	0	0	56	7	16	9	0	0	32	5	36	26	0	1	67	232	1027
Grand Total	564	258	128	0	0	950	167	689	135	1	0	992	160	413	373	0	0	946	181	654	552	0	2	1387	4275	-
Approach%	59.4%	27.2%	13.5%	0%		-	16.8%	69.5%	13.6%	0.1%		-	16.9%	43.7%	39.4%	0%		-	13%	47.2%	39.8%	0%		-	-	-
Totals %	13.2%	6%	3%	0%		22.2%	3.9%	16.1%	3.2%	0%		23.2%	3.7%	9.7%	8.7%	0%		22.1%	4.2%	15.3%	12.9%	0%		32.4%	-	-
Heavy	4	3	4	0		-	1	8	0	0		-	0	3	1	0		-	1	6	4	0		-	-	-
Heavy %	0.7%	1.2%	3.1%	0%		-	0.6%	1.2%	0%	0%		-	0%	0.7%	0.3%	0%		-	0.6%	0.9%	0.7%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 10:00 AM - 11:00 AM Weather: Overcast Clouds (1.02 °C)

Start Time	N Approach HWY 140						E Approach MAIN ST E						S Approach ELIZABETH ST						W Approach MAIN ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
10:00:00	27	15	5	0	0	47	7	55	8	0	0	70	7	22	31	0	0	60	12	34	42	0	0	88	265
10:15:00	26	14	7	0	0	47	6	48	11	0	0	65	9	28	49	0	0	86	17	46	30	0	0	93	291
10:30:00	41	22	3	0	0	66	12	37	11	0	0	60	10	30	18	0	0	58	15	35	38	0	0	88	272
10:45:00	38	13	4	0	0	55	11	54	10	1	0	76	16	31	18	0	0	65	12	37	34	0	0	83	279
Grand Total	132	64	19	0	0	215	36	194	40	1	0	271	42	111	116	0	0	269	56	152	144	0	0	352	1107
Approach%	61.4%	29.8%	8.8%	0%		-	13.3%	71.6%	14.8%	0.4%		-	15.6%	41.3%	43.1%	0%		-	15.9%	43.2%	40.9%	0%		-	-
Totals %	11.9%	5.8%	1.7%	0%		19.4%	3.3%	17.5%	3.6%	0.1%		24.5%	3.8%	10%	10.5%	0%		24.3%	5.1%	13.7%	13%	0%		31.8%	-
PHF	0.8	0.73	0.68	0		0.81	0.75	0.88	0.91	0.25		0.89	0.66	0.9	0.59	0		0.78	0.82	0.83	0.86	0		0.95	-
Heavy	0	3	0	0		3	0	4	0	0		4	0	0	0	0		0	0	3	0	0		3	-
Heavy %	0%	4.7%	0%	0%		1.4%	0%	2.1%	0%	0%		1.5%	0%	0%	0%	0%		0%	0%	2%	0%	0%		0.9%	-
Lights	132	61	19	0		212	36	190	40	1		267	42	111	116	0		269	56	149	144	0		349	-
Lights %	100%	95.3%	100%	0%		98.6%	100%	97.9%	100%	100%		98.5%	100%	100%	100%	0%		100%	100%	98%	100%	0%		99.1%	-
Single-Unit Trucks	0	3	0	0		3	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	-
Single-Unit Trucks %	0%	4.7%	0%	0%		1.4%	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		0.6%	-
Articulated Trucks	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	1	0	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.3%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 10:00 AM - 11:00 AM Weather: Overcast Clouds (1.02 °C)





Turning Movement Count (2 . MAIN ST E & SNIDER RD)

Start Time	N Approach SNIDER RD						E Approach MAIN ST E						S Approach SNIDER RD						W Approach MAIN ST E						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:00:00	0	0	0	0	0	0	0	40	0	0	0	40	0	0	1	0	0	1	0	41	0	0	0	41	82		
07:15:00	0	0	1	0	0	1	0	52	0	0	0	52	0	0	0	0	0	0	0	37	0	0	0	37	90		
07:30:00	2	0	0	0	0	2	0	56	0	0	0	56	0	0	0	0	0	0	0	48	1	0	0	49	107		
07:45:00	0	0	0	0	0	0	0	65	0	0	0	65	0	0	0	0	0	0	0	47	0	0	0	47	112	391	
08:00:00	0	0	0	0	0	0	0	61	0	0	0	61	0	0	0	0	0	0	0	39	0	0	0	39	100	409	
08:15:00	0	0	0	0	0	0	0	61	0	0	0	61	0	0	0	0	0	0	0	41	0	0	0	41	102	421	
08:30:00	2	0	0	0	0	2	0	66	0	0	0	66	0	0	0	0	0	0	0	43	1	0	0	44	112	426	
08:45:00	0	0	0	0	0	0	0	76	0	0	0	76	0	0	0	0	0	0	0	49	0	0	0	49	125	439	
09:00:00	0	0	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	42	0	1	0	43	101	440	
09:15:00	0	0	0	0	0	0	0	45	0	0	0	45	0	0	0	0	0	0	0	39	0	0	0	39	84	422	
09:30:00	0	0	0	0	0	0	0	50	0	0	0	50	0	0	0	0	0	0	0	37	0	0	0	37	87	397	
09:45:00	0	0	0	0	0	0	0	45	0	0	0	45	0	0	0	0	0	0	0	44	0	0	0	44	89	361	
BREAK																											
16:00:00	1	0	0	0	0	1	0	84	1	0	0	85	0	0	0	0	0	0	0	66	0	0	0	66	152		
16:15:00	0	0	0	0	0	0	0	73	0	0	0	73	0	1	0	0	0	1	0	78	0	0	0	78	152		
16:30:00	0	0	0	0	0	0	0	63	0	0	0	63	0	0	1	0	1	1	0	73	1	0	0	74	138		
16:45:00	0	0	0	0	0	0	0	54	0	0	0	54	0	0	0	0	0	0	0	70	0	0	0	70	124	566	
17:00:00	0	0	0	0	0	0	0	52	0	0	0	52	0	0	0	0	0	0	0	55	0	0	0	55	107	521	
17:15:00	0	0	0	0	0	0	1	46	0	0	0	47	0	0	0	0	0	0	0	58	0	1	0	59	106	475	
17:30:00	0	0	0	0	0	0	0	47	0	0	0	47	0	0	0	0	0	0	0	56	1	0	0	57	104	441	
17:45:00	1	0	1	0	0	2	0	42	0	0	0	42	0	0	0	0	0	0	1	42	0	0	0	43	87	404	
18:00:00	1	0	0	0	0	1	0	44	0	0	0	44	0	0	0	0	0	0	1	64	0	0	0	65	110	407	
18:15:00	0	0	0	0	0	0	0	39	0	0	0	39	0	0	0	0	0	0	0	46	1	0	0	47	86	387	
18:30:00	0	0	0	0	0	0	0	28	0	0	0	28	0	0	0	0	0	0	0	24	0	0	0	24	52	335	
18:45:00	0	0	0	0	0	0	0	30	0	0	0	30	0	0	0	0	0	0	0	30	0	0	0	30	60	308	
Grand Total	7	0	2	0	0	9	1	1277	1	0	0	1279	0	1	2	0	1	3	2	1169	5	2	0	1178	2469	-	
Approach%	77.8%	0%	22.2%	0%	-	-	0.1%	99.8%	0.1%	0%	-	-	0%	33.3%	66.7%	0%	-	-	0.2%	99.2%	0.4%	0.2%	-	-	-	-	
Totals %	0.3%	0%	0.1%	0%	0.4%	0%	0%	51.7%	0%	0%	51.8%	0%	0%	0.1%	0%	0.1%	0%	0.1%	0.1%	47.3%	0.2%	0.1%	47.7%	-	-	-	
Heavy	0	0	0	0	-	-	0	68	0	0	-	-	0	0	0	0	-	-	0	73	0	0	-	-	-	-	
Heavy %	0%	0%	0%	0%	-	0%	5.3%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	0%	6.2%	0%	0%	-	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)

Start Time	N Approach SNIDER RD						E Approach MAIN ST E						S Approach SNIDER RD						W Approach MAIN ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	0	0	0	0	0	0	0	61	0	0	0	61	0	0	0	0	0	0	0	41	0	0	0	41	102
08:30:00	2	0	0	0	0	2	0	66	0	0	0	66	0	0	0	0	0	0	0	43	1	0	0	44	112
08:45:00	0	0	0	0	0	0	0	76	0	0	0	76	0	0	0	0	0	0	0	49	0	0	0	49	125
09:00:00	0	0	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	42	0	1	0	43	101
Grand Total	2	0	0	0	0	2	0	261	0	0	0	261	0	0	0	0	0	0	0	175	1	1	0	177	440
Approach%	100%	0%	0%	0%		-	0%	100%	0%	0%		-	0%	0%	0%	0%		-	0%	98.9%	0.6%	0.6%		-	-
Totals %	0.5%	0%	0%	0%		0.5%	0%	59.3%	0%	0%		59.3%	0%	0%	0%	0%		0%	0%	39.8%	0.2%	0.2%		40.2%	-
PHF	0.25	0	0	0		0.25	0	0.86	0	0		0.86	0	0	0	0		0	0	0.89	0.25	0.25		0.9	-
Heavy	0	0	0	0		0	0	26	0	0		26	0	0	0	0		0	0	21	0	0		21	-
Heavy %	0%	0%	0%	0%		0%	0%	10%	0%	0%		10%	0%	0%	0%	0%		0%	0%	12%	0%	0%		11.9%	-
Lights	2	0	0	0		2	0	235	0	0		235	0	0	0	0		0	0	154	1	1		156	-
Lights %	100%	0%	0%	0%		100%	0%	90%	0%	0%		90%	0%	0%	0%	0%		0%	0%	88%	100%	100%		88.1%	-
Single-Unit Trucks	0	0	0	0		0	0	13	0	0		13	0	0	0	0		0	0	12	0	0		12	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	5%	0%	0%		5%	0%	0%	0%	0%		0%	0%	6.9%	0%	0%		6.8%	-
Buses	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	0	5	0	0		5	-
Buses %	0%	0%	0%	0%		0%	0%	2.3%	0%	0%		2.3%	0%	0%	0%	0%		0%	0%	2.9%	0%	0%		2.8%	-
Articulated Trucks	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	0	4	0	0		4	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	2.7%	0%	0%		2.7%	0%	0%	0%	0%		0%	0%	2.3%	0%	0%		2.3%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-



Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)

Start Time	N Approach SNIDER RD						E Approach MAIN ST E						S Approach SNIDER RD						W Approach MAIN ST E						Int. Total (15 min)	
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total		
16:00:00	1	0	0	0	0	1	0	84	1	0	0	85	0	0	0	0	0	0	0	66	0	0	0	0	66	152
16:15:00	0	0	0	0	0	0	0	73	0	0	0	73	0	1	0	0	0	1	0	78	0	0	0	0	78	152
16:30:00	0	0	0	0	0	0	0	63	0	0	0	63	0	0	1	0	1	1	0	73	1	0	0	0	74	138
16:45:00	0	0	0	0	0	0	0	54	0	0	0	54	0	0	0	0	0	0	0	70	0	0	0	0	70	124
Grand Total	1	0	0	0	0	1	0	274	1	0	0	275	0	1	1	0	1	2	0	287	1	0	0	0	288	566
Approach%	100%	0%	0%	0%		-	0%	99.6%	0.4%	0%		-	0%	50%	50%	0%		-	0%	99.7%	0.3%	0%		-	-	
Totals %	0.2%	0%	0%	0%		0.2%	0%	48.4%	0.2%	0%		48.6%	0%	0.2%	0.2%	0%		0.4%	0%	50.7%	0.2%	0%		50.9%	-	
PHF	0.25	0	0	0		0.25	0	0.82	0.25	0		0.81	0	0.25	0.25	0		0.5	0	0.92	0.25	0		0.92	-	
Heavy	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	14	0	0		14	-	
Heavy %	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.8%	0%	0%	0%	0%		0%	0%	4.9%	0%	0%		4.9%	-	
Lights	1	0	0	0		1	0	269	1	0		270	0	1	1	0		2	0	273	1	0		274	-	
Lights %	100%	0%	0%	0%		100%	0%	98.2%	100%	0%		98.2%	0%	100%	100%	0%		100%	0%	95.1%	100%	0%		95.1%	-	
Single-Unit Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	9	0	0		9	-	
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	3.1%	0%	0%		3.1%	-	
Buses	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	-	
Buses %	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	-	
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	3	0	0		3	-	
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1%	0%	0%		1%	-	
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	100%	-	-	-	-	-	0%	-	-	

Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)





Turning Movement Count (2 . MAIN ST E & SNIDER RD)

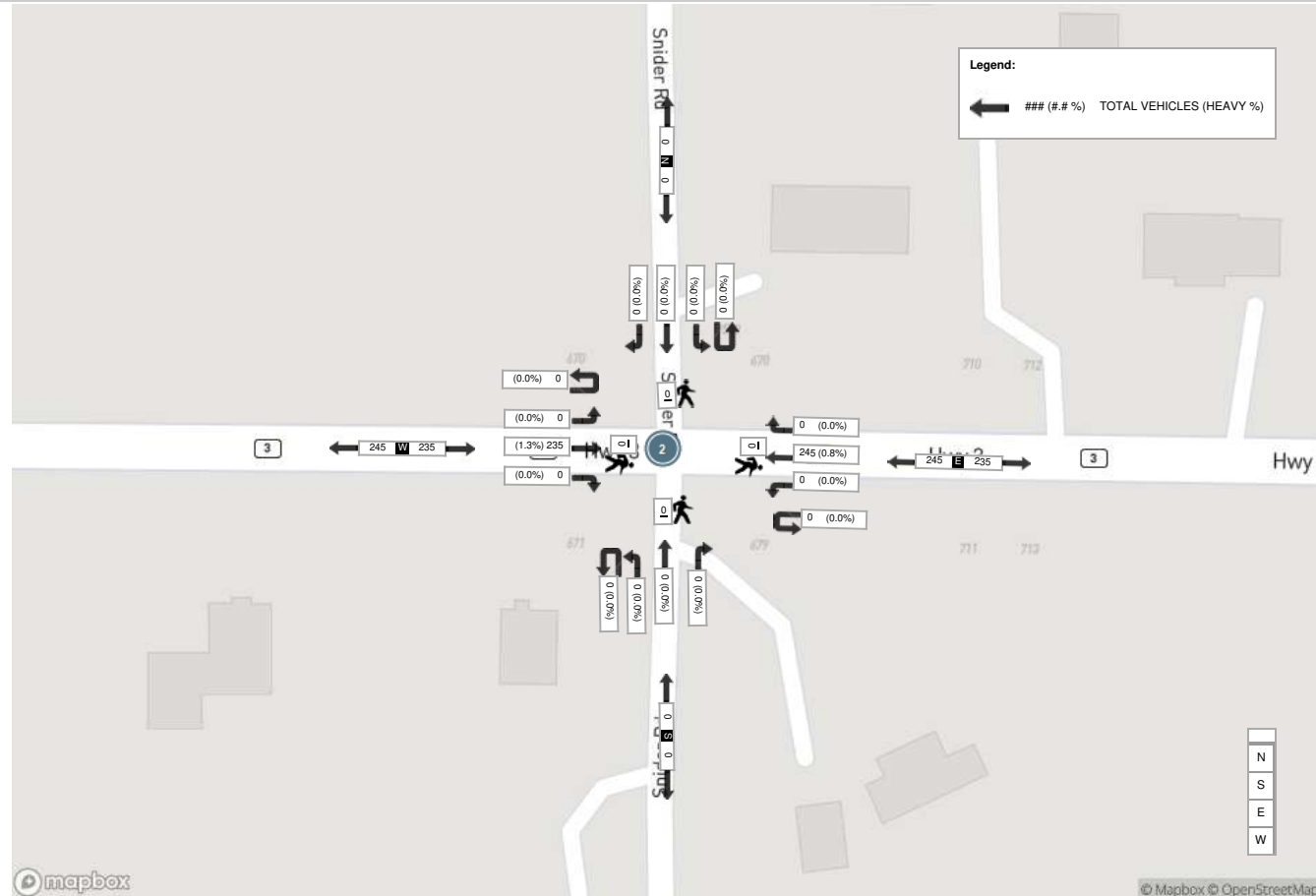
Start Time	N Approach SNIDER RD						E Approach MAIN ST E						S Approach SNIDER RD						W Approach MAIN ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
10:00:00	1	0	0	0	0	1	0	66	0	0	0	66	0	0	0	0	0	0	0	44	0	0	0	44	111	
10:15:00	0	0	0	0	0	0	0	59	0	0	0	59	0	0	0	0	0	0	0	53	0	0	0	53	112	
10:30:00	0	0	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	38	1	0	0	39	97	
10:45:00	0	0	0	0	0	0	0	63	0	0	0	63	0	0	0	0	0	0	0	55	0	0	0	55	118	438
11:00:00	0	0	0	0	0	0	0	65	0	0	0	65	0	0	0	0	0	0	0	40	0	0	0	40	105	432
11:15:00	1	0	0	0	0	1	0	65	0	0	0	65	0	0	0	0	0	0	0	61	0	0	0	61	127	447
11:30:00	0	0	0	0	0	0	0	53	0	0	0	53	0	0	0	0	0	0	0	60	1	0	0	61	114	464
11:45:00	0	0	0	0	0	0	0	48	0	0	0	48	0	0	0	0	0	0	0	49	0	0	0	49	97	443
12:00:00	0	0	1	0	0	1	1	55	0	0	0	56	0	0	0	0	0	0	0	51	0	0	0	51	108	446
12:15:00	0	0	0	0	0	0	0	67	0	0	0	67	0	0	0	0	0	0	0	60	0	0	0	60	127	446
12:30:00	0	0	0	0	0	0	0	57	0	0	0	57	0	0	0	0	0	0	0	55	0	0	0	55	112	444
12:45:00	0	0	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	63	0	0	0	63	121	468
13:00:00	0	0	0	0	0	0	0	63	0	0	0	63	0	0	0	0	0	0	0	57	0	0	0	57	120	480
13:15:00	0	0	0	0	0	0	0	37	0	0	0	37	0	0	0	0	0	0	0	70	0	0	0	70	107	460
13:30:00	0	0	0	0	0	0	1	47	1	0	0	49	0	0	0	0	0	0	0	60	0	0	0	60	109	457
13:45:00	0	0	0	0	0	0	0	51	0	0	0	51	0	0	2	0	0	2	0	51	0	0	0	51	104	440
Grand Total	2	0	1	0	0	3	2	912	1	0	0	915	0	0	2	0	0	2	0	867	2	0	0	869	1789	-
Approach%	66.7%	0%	33.3%	0%		-	0.2%	99.7%	0.1%	0%		-	0%	0%	100%	0%		-	0%	99.8%	0.2%	0%		-	-	-
Totals %	0.1%	0%	0.1%	0%		0.2%	0.1%	51%	0.1%	0%		51.1%	0%	0%	0.1%	0%		0.1%	0%	48.5%	0.1%	0%		48.6%	-	-
Heavy	0	0	0	0		-	0	10	0	0		-	0	0	0	0		-	0	10	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0%	1.1%	0%	0%		-	0%	0%	0%	0%		-	0%	1.2%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 12:15 PM - 01:15 PM Weather: Overcast Clouds (1.02 °C)

Start Time	N Approach SNIDER RD						E Approach MAIN ST E						S Approach SNIDER RD						W Approach MAIN ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
12:15:00	0	0	0	0	0	0	0	67	0	0	0	67	0	0	0	0	0	0	0	60	0	0	0	60	127
12:30:00	0	0	0	0	0	0	0	57	0	0	0	57	0	0	0	0	0	0	0	55	0	0	0	55	112
12:45:00	0	0	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	63	0	0	0	63	121
13:00:00	0	0	0	0	0	0	0	63	0	0	0	63	0	0	0	0	0	0	0	57	0	0	0	57	120
Grand Total	0	0	0	0	0	0	0	245	0	0	0	245	0	0	0	0	0	0	0	235	0	0	0	235	480
Approach%	0%	0%	0%	0%		-	0%	100%	0%	0%		-	0%	0%	0%	0%		-	0%	100%	0%	0%		-	-
Totals %	0%	0%	0%	0%		0%	0%	51%	0%	0%		51%	0%	0%	0%	0%		0%	0%	49%	0%	0%		49%	-
PHF	0	0	0	0		0	0	0.91	0	0		0.91	0	0	0	0		0	0	0.93	0	0		0.93	-
Heavy	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	-
Heavy %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.3%	-
Lights	0	0	0	0		0	0	243	0	0		243	0	0	0	0		0	0	232	0	0		232	-
Lights %	0%	0%	0%	0%		0%	0%	99.2%	0%	0%		99.2%	0%	0%	0%	0%		0%	0%	98.7%	0%	0%		98.7%	-
Single-Unit Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	-

Peak Hour: 12:15 PM - 01:15 PM Weather: Overcast Clouds (1.02 °C)





Turning Movement Count (3 . MAIN ST E & LORRAINE RD / BABION RD)

Start Time	N Approach BABION RD						E Approach MAIN ST E						S Approach LORRAINE RD						W Approach MAIN ST E						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:00:00	0	0	0	0	0	0	0	42	0	0	0	42	0	0	0	0	0	0	1	38	0	0	0	39	81		
07:15:00	0	0	0	0	0	0	0	45	0	0	0	45	0	0	2	0	0	2	1	35	0	0	0	36	83		
07:30:00	0	0	0	0	0	0	0	54	0	0	0	54	0	1	1	0	0	2	1	50	1	0	0	52	108		
07:45:00	0	0	0	0	0	0	0	65	0	0	0	65	0	0	0	0	0	0	5	38	0	0	0	43	108	380	
08:00:00	0	0	0	1	0	1	0	57	1	0	0	58	1	0	2	0	0	3	3	33	0	0	0	36	98	397	
08:15:00	0	0	0	0	0	0	0	58	1	0	0	59	0	0	2	0	0	2	3	40	0	0	0	43	104	418	
08:30:00	0	0	0	0	0	0	0	67	0	0	0	67	1	0	1	0	0	2	2	41	0	0	0	43	112	422	
08:45:00	1	0	0	0	0	1	0	69	1	0	0	70	0	0	4	0	0	4	0	44	0	0	0	44	119	433	
09:00:00	1	2	0	0	0	3	0	50	0	0	0	50	1	0	5	0	0	6	2	43	1	0	0	46	105	440	
09:15:00	0	0	0	0	0	0	0	42	0	0	0	42	0	0	1	0	0	1	2	32	0	0	0	34	77	413	
09:30:00	0	0	0	0	0	0	0	48	0	0	0	48	0	0	2	0	0	2	2	29	0	0	0	31	81	382	
09:45:00	0	0	0	0	0	0	0	45	0	0	0	45	1	0	1	0	0	2	1	51	0	0	0	52	99	362	
BREAK																											
16:00:00	0	0	0	0	0	0	0	82	0	0	0	82	1	0	0	0	0	1	4	62	0	0	0	66	149		
16:15:00	0	0	0	0	0	0	0	72	0	0	0	72	0	0	5	0	0	5	5	75	0	0	0	80	157		
16:30:00	1	0	0	0	0	1	0	56	0	0	0	56	1	0	3	0	0	4	3	68	0	0	0	71	132		
16:45:00	1	0	0	0	0	1	0	50	0	0	0	50	1	0	1	0	0	2	4	66	0	0	0	70	123	561	
17:00:00	0	0	0	0	0	0	0	50	0	0	0	50	1	0	2	0	0	3	1	56	0	0	0	57	110	522	
17:15:00	0	1	0	0	0	1	0	50	0	0	0	50	1	0	0	0	0	1	3	53	0	0	0	56	108	473	
17:30:00	0	0	0	0	0	0	0	45	0	0	0	45	0	1	0	0	0	1	0	55	0	0	0	55	101	442	
17:45:00	0	0	0	0	0	0	0	44	0	0	0	44	0	2	0	0	0	2	5	38	0	0	0	43	89	408	
18:00:00	0	0	0	0	0	0	0	42	0	0	0	42	0	0	1	0	0	1	1	60	0	0	0	61	104	402	
18:15:00	0	2	0	0	0	2	0	39	0	0	0	39	0	0	1	0	0	1	2	48	0	0	0	50	92	386	
18:30:00	0	0	0	0	0	0	0	25	0	0	0	25	0	0	1	0	0	1	0	24	1	0	0	25	51	336	
18:45:00	0	0	0	0	0	0	0	26	0	0	0	26	0	2	4	0	0	6	0	30	0	0	0	30	62	309	
Grand Total	4	5	0	1	0	10	0	1223	3	0	0	1226	9	6	39	0	0	54	51	1109	3	0	0	1163	2453	-	
Approach%	40%	50%	0%	10%		-	0%	99.8%	0.2%	0%		-	16.7%	11.1%	72.2%	0%		-	4.4%	95.4%	0.3%	0%		-	-	-	
Totals %	0.2%	0.2%	0%	0%		0.4%	0%	49.9%	0.1%	0%		50%	0.4%	0.2%	1.6%	0%		2.2%	2.1%	45.2%	0.1%	0%		47.4%	-	-	
Heavy	1	0	0	0		-	0	66	1	0		-	1	1	1	0		-	3	68	1	0		-	-	-	
Heavy %	25%	0%	0%	0%		-	0%	5.4%	33.3%	0%		-	11.1%	16.7%	2.6%	0%		-	5.9%	6.1%	33.3%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)

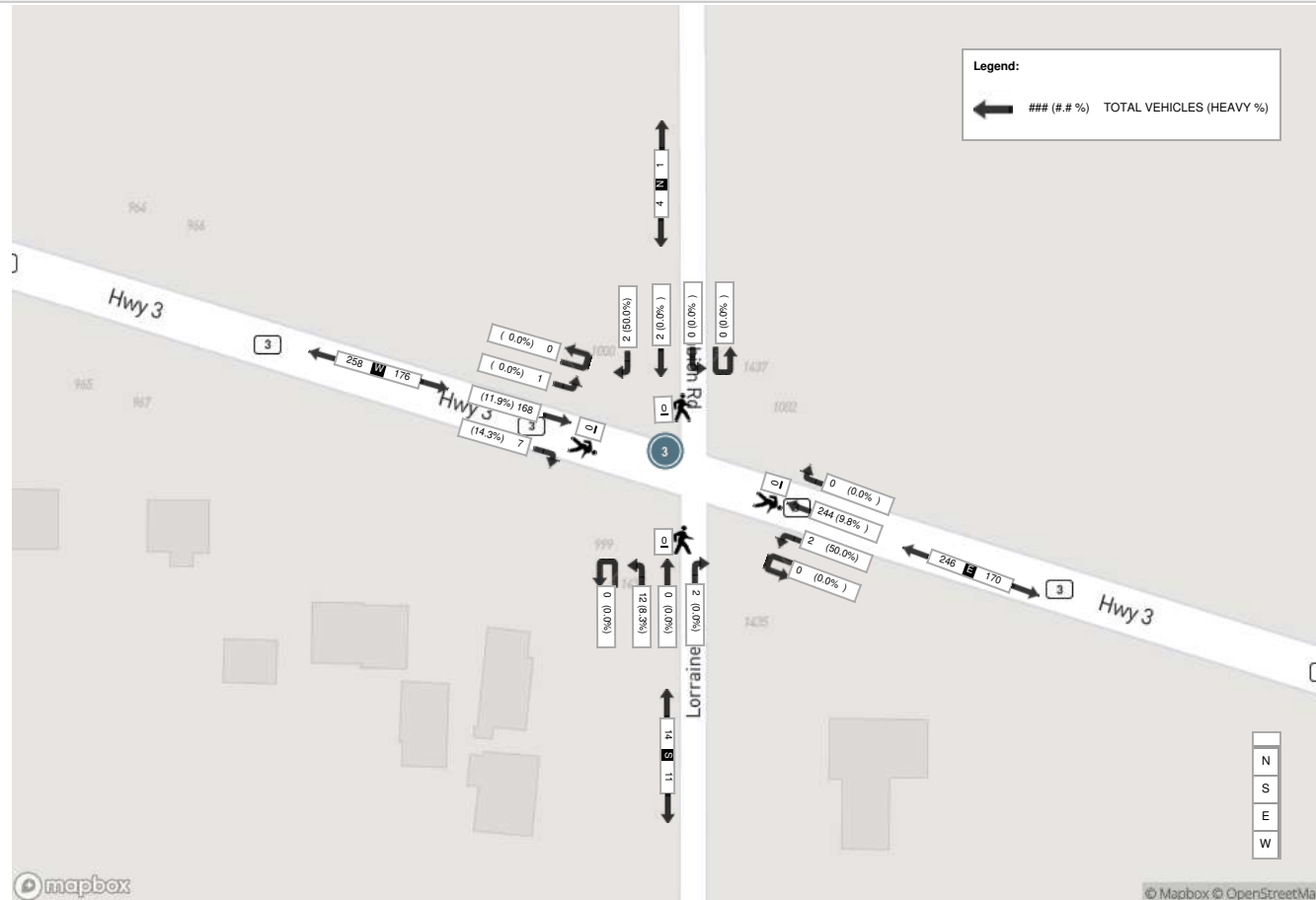
Start Time	N Approach BABION RD						E Approach MAIN ST E						S Approach LORRAINE RD						W Approach MAIN ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	0	0	0	0	0	0	0	58	1	0	0	59	0	0	2	0	0	2	3	40	0	0	0	43	104
08:30:00	0	0	0	0	0	0	0	67	0	0	0	67	1	0	1	0	0	2	2	41	0	0	0	43	112
08:45:00	1	0	0	0	0	1	0	69	1	0	0	70	0	0	4	0	0	4	0	44	0	0	0	44	119
09:00:00	1	2	0	0	0	3	0	50	0	0	0	50	1	0	5	0	0	6	2	43	1	0	0	46	105
Grand Total	2	2	0	0	0	4	0	244	2	0	0	246	2	0	12	0	0	14	7	168	1	0	0	176	440
Approach%	50%	50%	0%	0%		-	0%	99.2%	0.8%	0%		-	14.3%	0%	85.7%	0%		-	4%	95.5%	0.6%	0%		-	-
Totals %	0.5%	0.5%	0%	0%		0.9%	0%	55.5%	0.5%	0%		55.9%	0.5%	0%	2.7%	0%		3.2%	1.6%	38.2%	0.2%	0%		40%	-
PHF	0.5	0.25	0	0		0.33	0	0.88	0.5	0		0.88	0.5	0	0.6	0		0.58	0.58	0.95	0.25	0		0.96	-
Heavy	1	0	0	0		1	0	24	1	0		25	0	0	1	0		1	1	20	0	0		21	-
Heavy %	50%	0%	0%	0%		25%	0%	9.8%	50%	0%		10.2%	0%	0%	8.3%	0%		7.1%	14.3%	11.9%	0%	0%		11.9%	-
Lights	1	2	0	0		3	0	220	1	0		221	2	0	11	0		13	6	148	1	0		155	-
Lights %	50%	100%	0%	0%		75%	0%	90.2%	50%	0%		89.8%	100%	0%	91.7%	0%		92.9%	85.7%	88.1%	100%	0%		88.1%	-
Single-Unit Trucks	0	0	0	0		0	0	13	0	0		13	0	0	0	0		0	1	11	0	0		12	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	5.3%	0%	0%		5.3%	0%	0%	0%	0%		0%	14.3%	6.5%	0%	0%		6.8%	-
Buses	1	0	0	0		1	0	4	1	0		5	0	0	1	0		1	0	5	0	0		5	-
Buses %	50%	0%	0%	0%		25%	0%	1.6%	50%	0%		2%	0%	0%	8.3%	0%		7.1%	0%	3%	0%	0%		2.8%	-
Articulated Trucks	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	0	4	0	0		4	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	2.9%	0%	0%		2.8%	0%	0%	0%	0%		0%	0%	2.4%	0%	0%		2.3%	-



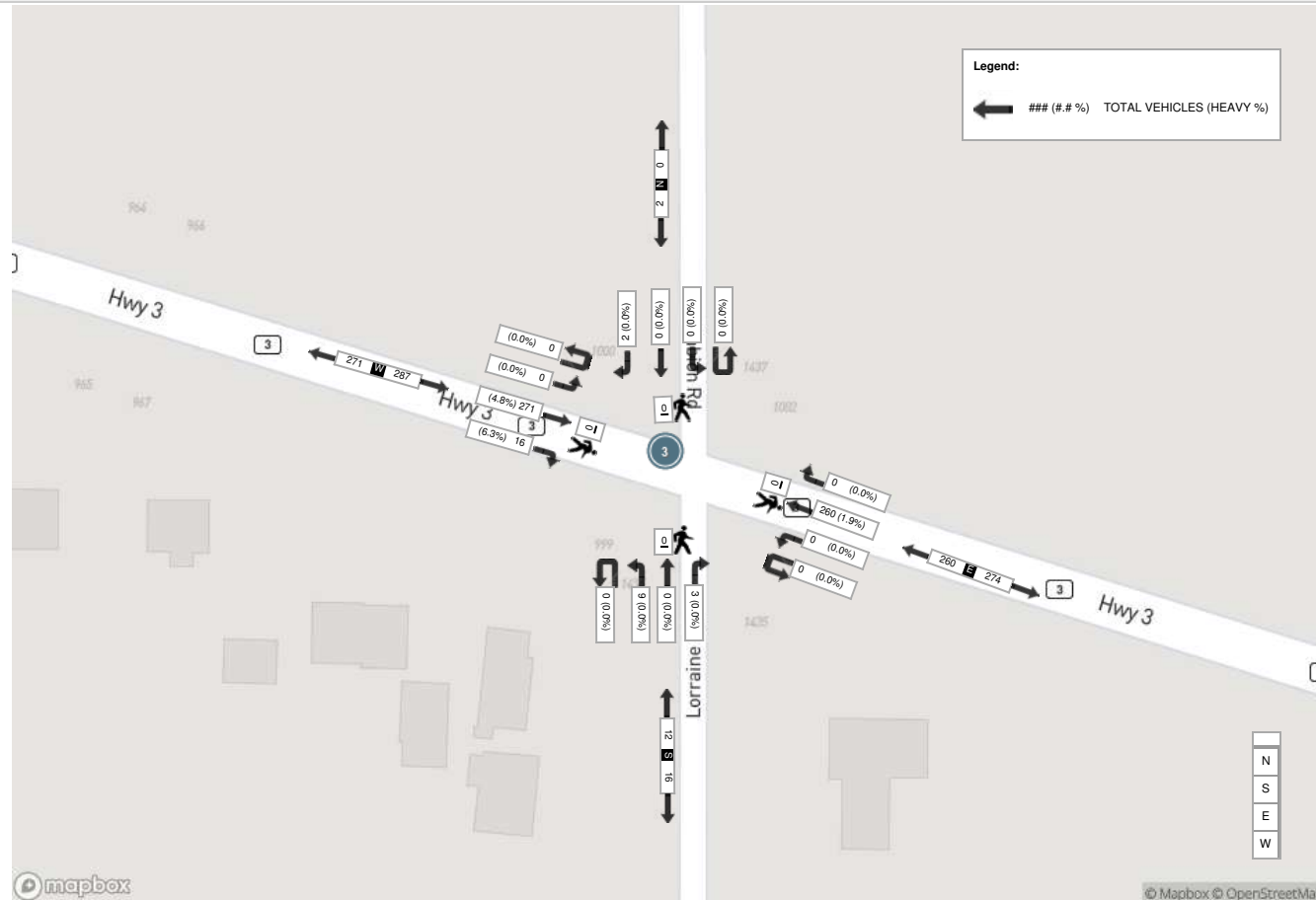
Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)

Start Time	N Approach BABION RD						E Approach MAIN ST E						S Approach LORRAINE RD						W Approach MAIN ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	0	0	0	0	0	0	0	82	0	0	0	82	1	0	0	0	0	1	4	62	0	0	0	66	149
16:15:00	0	0	0	0	0	0	0	72	0	0	0	72	0	0	5	0	0	5	5	75	0	0	0	80	157
16:30:00	1	0	0	0	0	1	0	56	0	0	0	56	1	0	3	0	0	4	3	68	0	0	0	71	132
16:45:00	1	0	0	0	0	1	0	50	0	0	0	50	1	0	1	0	0	2	4	66	0	0	0	70	123
Grand Total	2	0	0	0	0	2	0	260	0	0	0	260	3	0	9	0	0	12	16	271	0	0	0	287	561
Approach%	100%	0%	0%	0%		-	0%	100%	0%	0%		-	25%	0%	75%	0%		-	5.6%	94.4%	0%	0%		-	-
Totals %	0.4%	0%	0%	0%		0.4%	0%	46.3%	0%	0%		46.3%	0.5%	0%	1.6%	0%		2.1%	2.9%	48.3%	0%	0%		51.2%	-
PHF	0.5	0	0	0		0.5	0	0.79	0	0		0.79	0.75	0	0.45	0		0.6	0.8	0.9	0	0		0.9	-
Heavy	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	1	13	0	0		14	-
Heavy %	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.9%	0%	0%	0%	0%		0%	6.3%	4.8%	0%	0%		4.9%	-
Lights	2	0	0	0		2	0	255	0	0		255	3	0	9	0		12	15	258	0	0		273	-
Lights %	100%	0%	0%	0%		100%	0%	98.1%	0%	0%		98.1%	100%	0%	100%	0%		100%	93.8%	95.2%	0%	0%		95.1%	-
Single-Unit Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	1	8	0	0		9	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	6.3%	3%	0%	0%		3.1%	-
Buses	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	-
Buses %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	3	0	0		3	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1%	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)





Turning Movement Count (3 . MAIN ST E & LORRAINE RD / BABION RD)

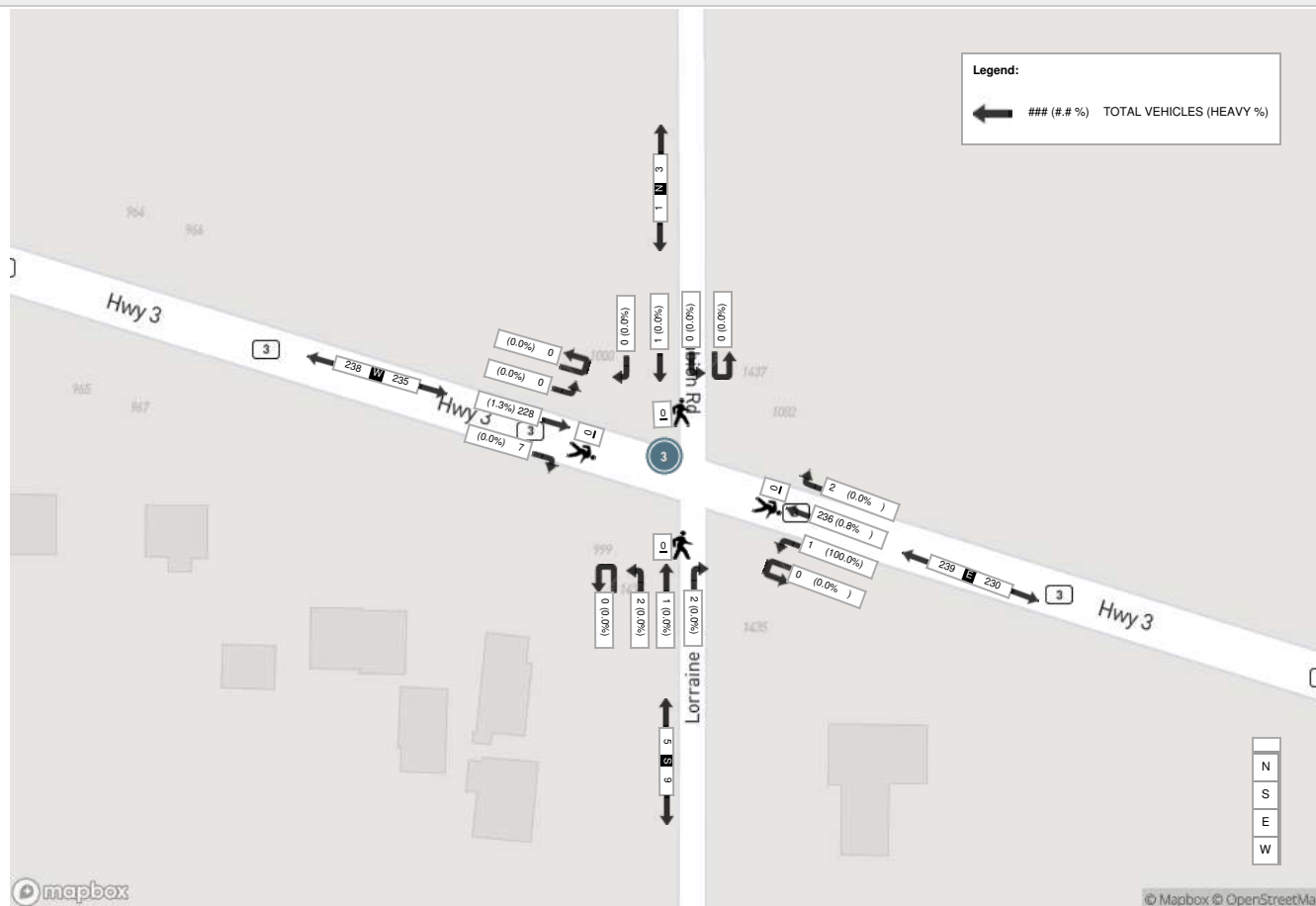
Start Time	N Approach BABION RD						E Approach MAIN ST E						S Approach LORRAINE RD						W Approach MAIN ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
10:00:00	0	0	0	0	0	0	0	62	0	0	0	62	0	0	2	0	0	2	0	44	0	0	0	44	108	
10:15:00	0	0	0	0	0	0	0	56	0	0	0	56	0	0	0	0	0	0	3	50	0	0	0	53	109	
10:30:00	0	2	1	0	0	3	1	58	0	0	0	59	0	1	0	0	0	1	2	36	0	0	0	38	101	
10:45:00	0	0	0	0	0	0	0	63	1	0	0	64	0	0	1	0	0	1	3	52	0	0	0	55	120	438
11:00:00	0	2	0	0	0	2	0	64	0	0	0	64	1	0	3	0	0	4	4	37	0	0	0	41	111	441
11:15:00	0	0	0	0	0	0	0	55	0	0	0	55	0	0	4	0	0	4	0	53	0	0	0	53	112	444
11:30:00	0	0	0	0	0	0	0	53	0	0	0	53	0	0	1	0	0	1	1	60	1	0	0	62	116	459
11:45:00	1	0	0	0	0	1	0	48	0	0	0	48	1	0	0	0	0	1	2	47	1	0	0	50	100	439
12:00:00	0	0	0	0	0	0	0	58	1	0	0	59	0	1	2	0	0	3	2	49	0	0	0	51	113	441
12:15:00	0	0	0	0	0	0	0	62	0	0	0	62	1	0	0	0	0	1	1	59	0	0	0	60	123	452
12:30:00	0	0	0	0	0	0	1	55	1	0	0	57	0	1	0	0	0	1	1	52	0	0	0	53	111	447
12:45:00	0	1	0	0	0	1	0	55	0	0	0	55	0	0	1	0	0	1	5	62	0	0	0	67	124	471
13:00:00	0	0	0	0	0	0	1	64	0	0	0	65	1	0	1	0	0	2	0	55	0	0	0	55	122	480
13:15:00	0	0	0	0	0	0	0	36	0	0	0	36	0	0	0	0	0	0	3	66	0	0	0	69	105	462
13:30:00	0	0	0	0	0	0	0	49	0	0	0	49	0	0	0	0	0	0	5	53	1	0	0	59	108	459
13:45:00	0	0	0	0	0	0	0	45	0	0	0	45	2	0	3	0	0	5	0	49	0	0	0	49	99	434
Grand Total	1	5	1	0	0	7	3	883	3	0	0	889	6	3	18	0	0	27	32	824	3	0	0	859	1782	-
Approach%	14.3%	71.4%	14.3%	0%		-	0.3%	99.3%	0.3%	0%		-	22.2%	11.1%	66.7%	0%		-	3.7%	95.9%	0.3%	0%		-	-	-
Totals %	0.1%	0.3%	0.1%	0%		0.4%	0.2%	49.6%	0.2%	0%		49.9%	0.3%	0.2%	1%	0%		1.5%	1.8%	46.2%	0.2%	0%		48.2%	-	-
Heavy	0	0	0	0		-	0	10	1	0		-	0	0	0	0		-	0	10	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0%	1.1%	33.3%	0%		-	0%	0%	0%	0%		-	0%	1.2%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 12:15 PM - 01:15 PM Weather: Overcast Clouds (1.02 °C)

Start Time	N Approach BABION RD						E Approach MAIN ST E						S Approach LORRAINE RD						W Approach MAIN ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
12:15:00	0	0	0	0	0	0	0	62	0	0	0	62	1	0	0	0	0	1	1	59	0	0	0	60	123
12:30:00	0	0	0	0	0	0	1	55	1	0	0	57	0	1	0	0	0	1	1	52	0	0	0	53	111
12:45:00	0	1	0	0	0	1	0	55	0	0	0	55	0	0	1	0	0	1	5	62	0	0	0	67	124
13:00:00	0	0	0	0	0	0	1	64	0	0	0	65	1	0	1	0	0	2	0	55	0	0	0	55	122
Grand Total	0	1	0	0	0	1	2	236	1	0	0	239	2	1	2	0	0	5	7	228	0	0	0	235	480
Approach%	0%	100%	0%	0%		-	0.8%	98.7%	0.4%	0%		-	40%	20%	40%	0%		-	3%	97%	0%	0%		-	-
Totals %	0%	0.2%	0%	0%		0.2%	0.4%	49.2%	0.2%	0%		49.8%	0.4%	0.2%	0.4%	0%		1%	1.5%	47.5%	0%	0%		49%	-
PHF	0	0.25	0	0		0.25	0.5	0.92	0.25	0		0.92	0.5	0.25	0.5	0		0.63	0.35	0.92	0	0		0.88	-
Heavy	0	0	0	0		0	0	2	1	0		3	0	0	0	0		0	0	3	0	0		3	-
Heavy %	0%	0%	0%	0%		0%	0%	0.8%	100%	0%		1.3%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.3%	-
Lights	0	1	0	0		1	2	234	0	0		236	2	1	2	0		5	7	225	0	0		232	-
Lights %	0%	100%	0%	0%		100%	100%	99.2%	0%	0%		98.7%	100%	100%	100%	0%		100%	100%	98.7%	0%	0%		98.7%	-
Single-Unit Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	-
Articulated Trucks	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	0	1	0	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	100%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	-

Peak Hour: 12:15 PM - 01:15 PM Weather: Overcast Clouds (1.02 °C)





Turning Movement Count (4 . KILLALY ST E & LORRAINE RD (N/S))

Start Time	N Approach LORRAINE RD N						E Approach KILLALY ST E						S Approach LORRAINE RD S						W Approach KILLALY ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	1	0	0	0	1	0	8	1	0	0	9	0	0	0	0	0	0	2	7	0	0	0	9	19	
07:15:00	0	0	1	0	0	1	2	12	1	0	0	15	0	1	1	0	0	2	2	15	0	0	0	17	35	
07:30:00	0	1	0	0	0	1	0	18	3	0	0	21	1	1	2	0	0	4	0	22	0	0	0	22	48	
07:45:00	0	5	0	0	0	5	0	10	1	0	0	11	2	0	2	0	0	4	4	19	0	0	0	23	43	145
08:00:00	0	3	1	0	0	4	1	15	2	0	0	18	3	1	1	0	0	5	0	16	1	0	0	17	44	170
08:15:00	0	3	1	0	0	4	0	24	2	0	0	26	0	1	0	0	0	1	3	16	0	0	0	19	50	185
08:30:00	0	1	1	0	0	2	1	21	2	0	0	24	3	0	1	0	0	4	0	29	0	0	0	29	59	196
08:45:00	0	0	0	0	0	0	0	25	2	0	0	27	1	1	3	0	0	5	2	21	1	0	0	24	56	209
09:00:00	1	0	0	1	0	2	1	16	1	0	0	18	0	3	1	0	0	4	1	25	0	0	0	26	50	215
09:15:00	1	2	2	0	0	5	2	16	0	0	0	18	3	0	2	0	0	5	1	18	0	0	0	19	47	212
09:30:00	1	2	0	0	0	3	2	19	0	0	0	21	2	0	0	0	0	2	2	20	0	0	0	22	48	201
09:45:00	0	0	0	0	0	0	2	16	4	0	0	22	2	0	1	0	0	3	3	14	1	1	0	19	44	189
BREAK																										
16:00:00	0	4	0	0	0	4	1	24	1	0	0	26	2	0	1	0	0	3	0	34	1	0	0	35	68	
16:15:00	1	2	1	0	0	4	0	33	1	0	0	34	1	1	2	0	0	4	2	34	1	0	0	37	79	
16:30:00	1	2	0	0	0	3	1	28	2	0	0	31	2	2	1	0	0	5	1	41	1	0	0	43	82	
16:45:00	0	2	1	0	0	3	0	18	2	0	0	20	3	1	3	0	0	7	3	32	1	0	0	36	66	295
17:00:00	1	0	0	0	0	1	1	19	2	0	0	22	0	1	3	0	0	4	2	30	0	0	0	32	59	286
17:15:00	1	2	1	0	0	4	0	23	1	0	0	24	0	0	4	0	0	4	0	22	1	0	0	23	55	262
17:30:00	0	0	0	0	0	0	1	26	1	0	0	28	1	0	1	0	0	2	2	18	0	0	0	20	50	230
17:45:00	0	5	0	0	0	5	0	20	1	0	0	21	2	0	1	0	0	3	3	5	2	0	0	10	39	203
18:00:00	1	0	0	0	0	1	0	16	2	0	0	18	1	1	3	0	0	5	2	13	0	0	0	15	39	183
18:15:00	1	0	1	0	0	2	0	15	0	0	0	15	1	1	1	0	0	3	1	17	0	0	0	18	38	166
18:30:00	0	0	0	0	0	0	1	15	0	0	0	16	1	0	3	0	0	4	2	28	0	0	0	30	50	166
18:45:00	0	0	0	0	0	0	0	8	1	0	0	9	0	4	0	0	0	4	1	15	0	0	0	16	29	156
Grand Total	9	35	10	1	0	55	16	445	33	0	0	494	31	19	37	0	0	87	39	511	10	1	0	561	1197	-
Approach%	16.4%	63.6%	18.2%	1.8%		-	3.2%	90.1%	6.7%	0%		-	35.6%	21.8%	42.5%	0%		-	7%	91.1%	1.8%	0.2%		-	-	-
Totals %	0.8%	2.9%	0.8%	0.1%		4.6%	1.3%	37.2%	2.8%	0%		41.3%	2.6%	1.6%	3.1%	0%		7.3%	3.3%	42.7%	0.8%	0.1%		46.9%	-	-
Heavy	1	3	0	0		-	3	35	2	0		-	0	1	1	0		-	3	22	0	0		-	-	-
Heavy %	11.1%	8.6%	0%	0%		-	18.8%	7.9%	6.1%	0%		-	0%	5.3%	2.7%	0%		-	7.7%	4.3%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)

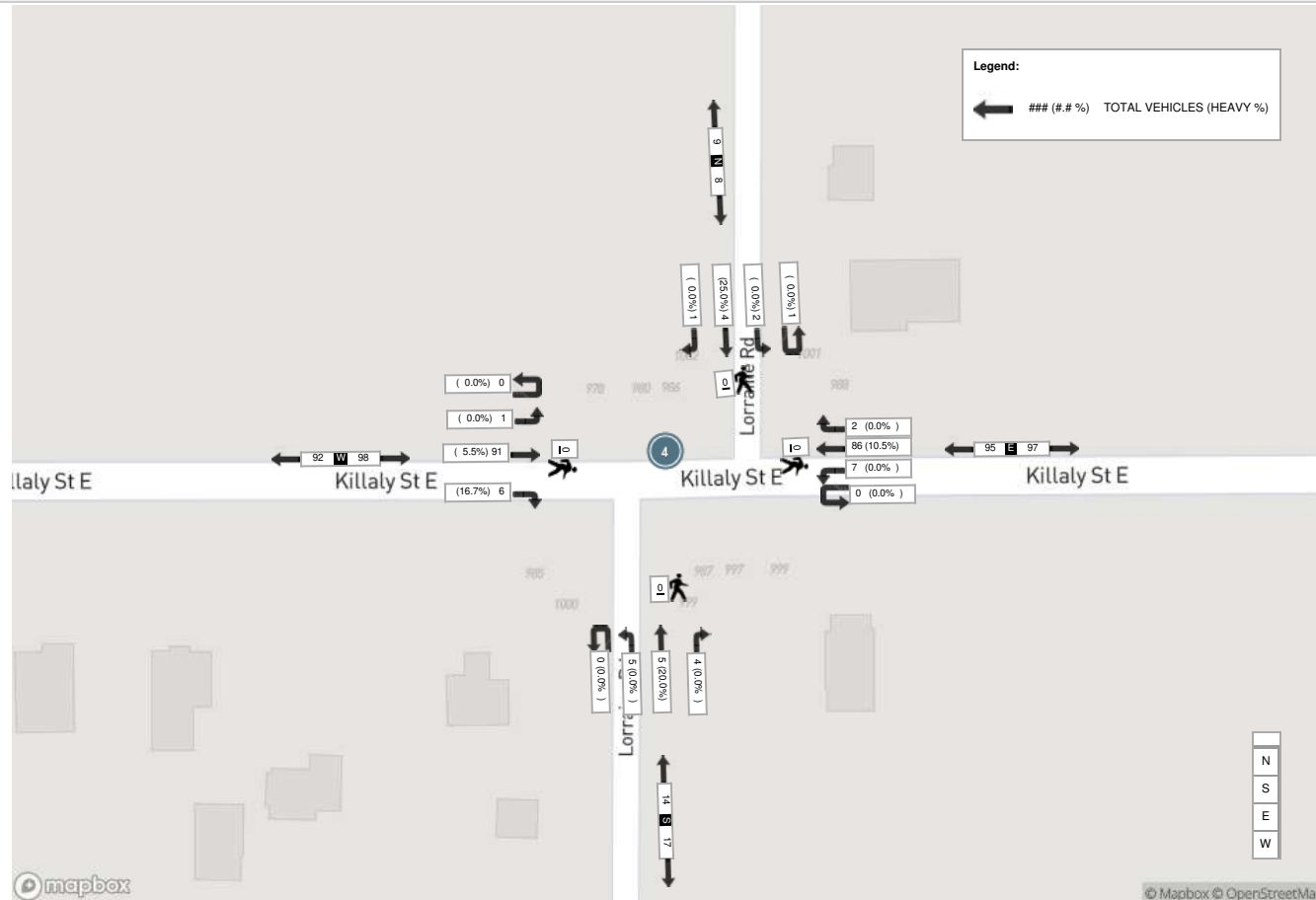
Start Time	N Approach LORRAINE RD N						E Approach KILLALY ST E						S Approach LORRAINE RD S						W Approach KILLALY ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	0	3	1	0	0	4	0	24	2	0	0	26	0	1	0	0	0	1	3	16	0	0	0	19	50
08:30:00	0	1	1	0	0	2	1	21	2	0	0	24	3	0	1	0	0	4	0	29	0	0	0	29	59
08:45:00	0	0	0	0	0	0	0	25	2	0	0	27	1	1	3	0	0	5	2	21	1	0	0	24	56
09:00:00	1	0	0	1	0	2	1	16	1	0	0	18	0	3	1	0	0	4	1	25	0	0	0	26	50
Grand Total	1	4	2	1	0	8	2	86	7	0	0	95	4	5	5	0	0	14	6	91	1	0	0	98	215
Approach%	12.5%	50%	25%	12.5%		-	2.1%	90.5%	7.4%	0%		-	28.6%	35.7%	35.7%	0%		-	6.1%	92.9%	1%	0%		-	-
Totals %	0.5%	1.9%	0.9%	0.5%		3.7%	0.9%	40%	3.3%	0%		44.2%	1.9%	2.3%	2.3%	0%		6.5%	2.8%	42.3%	0.5%	0%		45.6%	-
PHF	0.25	0.33	0.5	0.25		0.5	0.5	0.86	0.88	0		0.88	0.33	0.42	0.42	0		0.7	0.5	0.78	0.25	0		0.84	-
Heavy	0	1	0	0		1	0	9	0	0		9	0	1	0	0		1	1	5	0	0		6	-
Heavy %	0%	25%	0%	0%		12.5%	0%	10.5%	0%	0%		9.5%	0%	20%	0%	0%		7.1%	16.7%	5.5%	0%	0%		6.1%	-
Lights	1	3	2	1		7	2	77	7	0		86	4	4	5	0		13	5	86	1	0		92	-
Lights %	100%	75%	100%	100%		87.5%	100%	89.5%	100%	0%		90.5%	100%	80%	100%	0%		92.9%	83.3%	94.5%	100%	0%		93.9%	-
Single-Unit Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1%	-
Buses	0	1	0	0		1	0	7	0	0		7	0	1	0	0		1	1	3	0	0		4	-
Buses %	0%	25%	0%	0%		12.5%	0%	8.1%	0%	0%		7.4%	0%	20%	0%	0%		7.1%	16.7%	3.3%	0%	0%		4.1%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1%	-



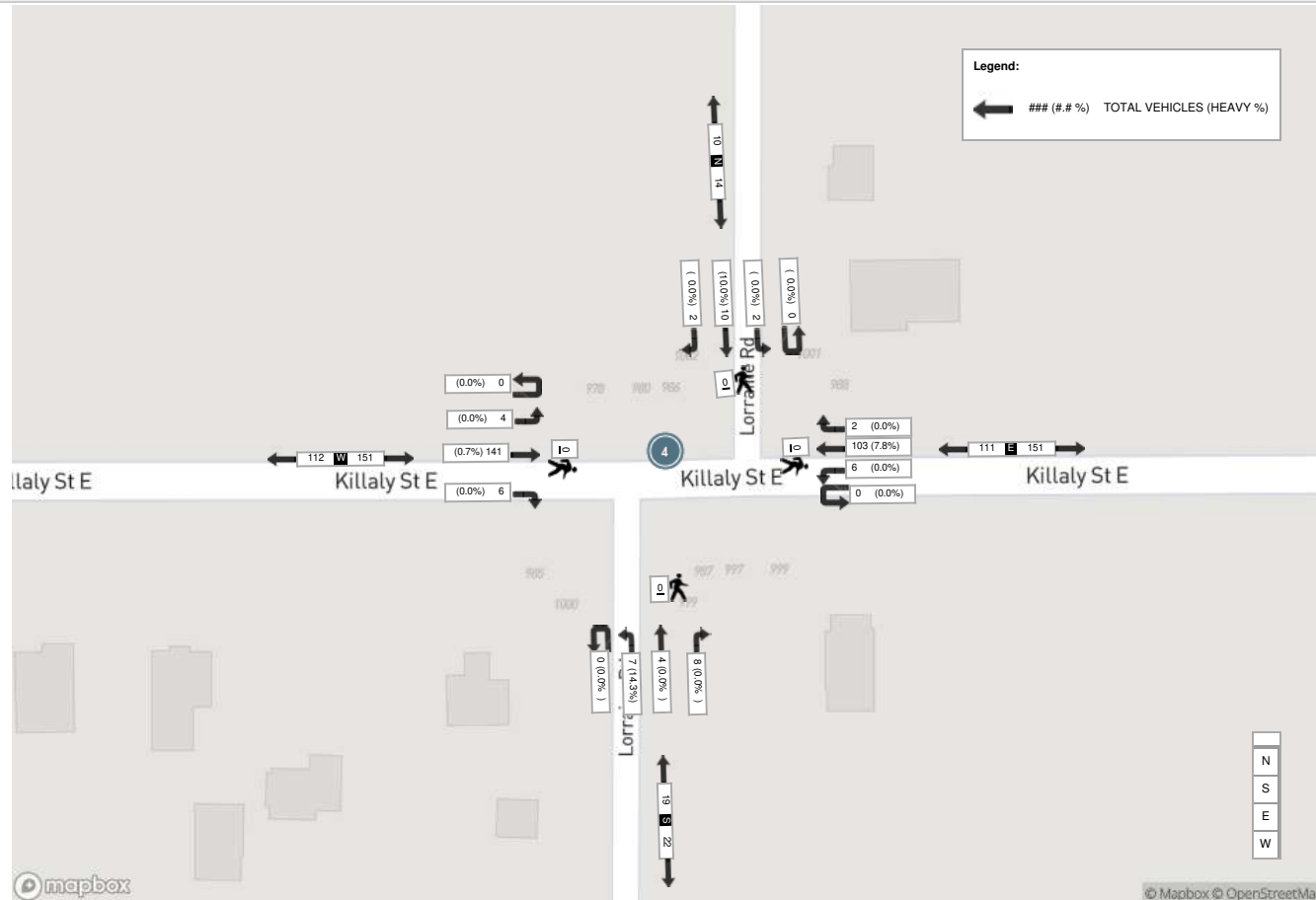
Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)

Start Time	N Approach LORRAINE RD N						E Approach KILLALY ST E						S Approach LORRAINE RD S						W Approach KILLALY ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	0	4	0	0	0	4	1	24	1	0	0	26	2	0	1	0	0	3	0	34	1	0	0	35	68
16:15:00	1	2	1	0	0	4	0	33	1	0	0	34	1	1	2	0	0	4	2	34	1	0	0	37	79
16:30:00	1	2	0	0	0	3	1	28	2	0	0	31	2	2	1	0	0	5	1	41	1	0	0	43	82
16:45:00	0	2	1	0	0	3	0	18	2	0	0	20	3	1	3	0	0	7	3	32	1	0	0	36	66
Grand Total	2	10	2	0	0	14	2	103	6	0	0	111	8	4	7	0	0	19	6	141	4	0	0	151	295
Approach%	14.3%	71.4%	14.3%	0%		-	1.8%	92.8%	5.4%	0%		-	42.1%	21.1%	36.8%	0%		-	4%	93.4%	2.6%	0%		-	-
Totals %	0.7%	3.4%	0.7%	0%		4.7%	0.7%	34.9%	2%	0%		37.6%	2.7%	1.4%	2.4%	0%		6.4%	2%	47.8%	1.4%	0%		51.2%	-
PHF	0.5	0.63	0.5	0		0.88	0.5	0.78	0.75	0		0.82	0.67	0.5	0.58	0		0.68	0.5	0.86	1	0		0.88	-
Heavy	0	1	0	0		1	0	8	0	0		8	0	0	1	0		1	0	1	0	0		1	-
Heavy %	0%	10%	0%	0%		7.1%	0%	7.8%	0%	0%		7.2%	0%	0%	14.3%	0%		5.3%	0%	0.7%	0%	0%		0.7%	-
Lights	2	9	2	0		13	2	95	6	0		103	8	4	6	0		18	6	140	4	0		150	-
Lights %	100%	90%	100%	0%		92.9%	100%	92.2%	100%	0%		92.8%	100%	100%	85.7%	0%		94.7%	100%	99.3%	100%	0%		99.3%	-
Single-Unit Trucks	0	1	0	0		1	0	3	0	0		3	0	0	1	0		1	0	0	0	0		0	-
Single-Unit Trucks %	0%	10%	0%	0%		7.1%	0%	2.9%	0%	0%		2.7%	0%	0%	14.3%	0%		5.3%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	1	0	0		1	-
Buses %	0%	0%	0%	0%		0%	0%	4.9%	0%	0%		4.5%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)





Turning Movement Count (4 . KILLALY ST E & LORRAINE RD (N/S))

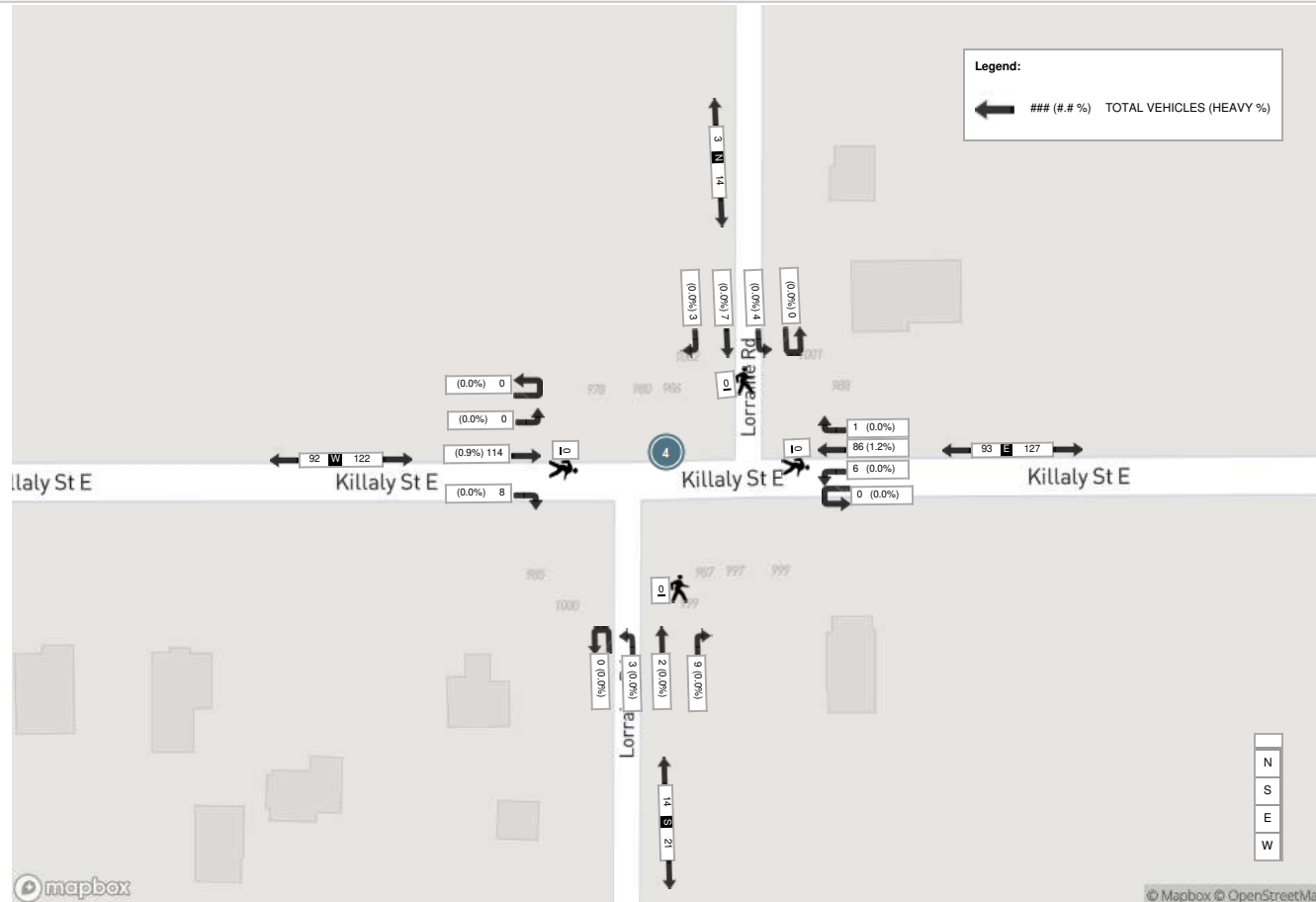
Start Time	N Approach LORRAINE RD N						E Approach KILLALY ST E						S Approach LORRAINE RD S						W Approach KILLALY ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
10:00:00	1	0	0	0	0	1	1	19	1	0	0	21	2	1	2	0	0	5	3	16	0	0	0	19	46	
10:15:00	0	0	3	0	0	3	0	21	4	0	0	25	0	0	1	0	0	1	2	14	1	0	0	17	46	
10:30:00	0	0	3	0	0	3	0	20	0	0	0	20	3	0	0	0	0	3	1	21	1	0	0	23	49	
10:45:00	0	0	2	0	0	2	0	20	0	0	0	20	1	1	0	0	0	2	1	16	0	0	0	17	41	182
11:00:00	0	3	1	0	0	4	1	16	1	0	0	18	1	1	2	0	0	4	3	21	0	0	0	24	50	186
11:15:00	0	0	0	0	0	0	1	29	1	0	0	31	1	2	3	0	0	6	3	23	0	0	0	26	63	203
11:30:00	0	1	0	0	0	1	0	25	1	0	0	26	1	1	2	0	0	4	4	19	0	0	0	23	54	208
11:45:00	1	0	0	0	0	1	0	19	1	0	0	20	2	0	2	0	0	4	2	22	0	0	0	24	49	216
12:00:00	0	2	1	0	0	3	2	15	1	0	0	18	0	1	1	0	0	2	1	25	0	0	0	26	49	215
12:15:00	0	0	1	0	0	1	0	27	2	0	0	29	0	1	1	0	0	2	1	25	0	0	0	26	58	210
12:30:00	1	1	0	0	0	2	0	21	4	0	0	25	1	0	2	0	0	3	1	18	1	0	0	20	50	206
12:45:00	2	2	2	0	0	6	0	23	0	0	0	23	2	1	0	0	0	3	1	27	0	0	0	28	60	217
13:00:00	1	0	0	0	0	1	1	21	5	0	0	27	1	1	0	0	0	2	4	34	0	0	0	38	68	236
13:15:00	0	0	1	0	0	1	0	22	1	0	0	23	1	0	1	0	0	2	0	27	0	0	0	27	53	231
13:30:00	0	5	1	0	0	6	0	20	0	0	0	20	5	0	2	0	0	7	3	26	0	0	0	29	62	243
13:45:00	0	0	0	0	0	0	0	17	1	0	0	18	3	1	4	0	0	8	1	21	1	0	0	23	49	232
Grand Total	6	14	15	0	0	35	6	335	23	0	0	364	24	11	23	0	0	58	31	355	4	0	0	390	847	-
Approach%	17.1%	40%	42.9%	0%		-	1.6%	92%	6.3%	0%		-	41.4%	19%	39.7%	0%		-	7.9%	91%	1%	0%		-	-	-
Totals %	0.7%	1.7%	1.8%	0%		4.1%	0.7%	39.6%	2.7%	0%		43%	2.8%	1.3%	2.7%	0%		6.8%	3.7%	41.9%	0.5%	0%		46%	-	-
Heavy	1	0	0	0		-	0	3	0	0		-	0	0	0	0		-	0	2	0	0		-	-	-
Heavy %	16.7%	0%	0%	0%		-	0%	0.9%	0%	0%		-	0%	0%	0%	0%		-	0%	0.6%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast Clouds (1.02 °C)

Start Time	N Approach LORRAINE RD N						E Approach KILLALY ST E						S Approach LORRAINE RD S						W Approach KILLALY ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
12:45:00	2	2	2	0	0	6	0	23	0	0	0	23	2	1	0	0	0	3	1	27	0	0	0	28	60
13:00:00	1	0	0	0	0	1	1	21	5	0	0	27	1	1	0	0	0	2	4	34	0	0	0	38	68
13:15:00	0	0	1	0	0	1	0	22	1	0	0	23	1	0	1	0	0	2	0	27	0	0	0	27	53
13:30:00	0	5	1	0	0	6	0	20	0	0	0	20	5	0	2	0	0	7	3	26	0	0	0	29	62
Grand Total	3	7	4	0	0	14	1	86	6	0	0	93	9	2	3	0	0	14	8	114	0	0	0	122	243
Approach%	21.4%	50%	28.6%	0%		-	1.1%	92.5%	6.5%	0%		-	64.3%	14.3%	21.4%	0%		-	6.6%	93.4%	0%	0%		-	-
Totals %	1.2%	2.9%	1.6%	0%		5.8%	0.4%	35.4%	2.5%	0%		38.3%	3.7%	0.8%	1.2%	0%		5.8%	3.3%	46.9%	0%	0%		50.2%	-
PHF	0.38	0.35	0.5	0		0.58	0.25	0.93	0.3	0		0.86	0.45	0.5	0.38	0		0.5	0.5	0.84	0	0		0.8	-
Heavy	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	-
Heavy %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	-
Lights	3	7	4	0		14	1	85	6	0		92	9	2	3	0		14	8	113	0	0		121	-
Lights %	100%	100%	100%	0%		100%	100%	98.8%	100%	0%		98.9%	100%	100%	100%	0%		100%	100%	99.1%	0%	0%		99.2%	-
Single-Unit Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-

Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast Clouds (1.02 °C)





Turning Movement Count (5 . KILLALY ST E & ELIZABETH ST)

Start Time	N Approach ELIZABETH ST						E Approach KILLALY ST E						S Approach ELIZABETH ST						W Approach KILLALY ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	UTurn N-N	Peds N:	Approach Total	Right E-N	Thru E-W	Left E-S	UTurn E-E	Peds E:	Approach Total	Right S-E	Thru S-N	Left S-W	UTurn S-S	Peds S:	Approach Total	Right W-S	Thru W-E	Left W-N	UTurn W-W	Peds W:	Approach Total		
07:00:00	15	1	0	0	0	16	4	7	0	0	0	11	0	3	0	0	0	3	0	7	17	0	1	24	54	
07:15:00	15	3	4	0	0	22	7	14	0	0	0	21	3	5	0	0	0	8	0	18	19	0	2	37	88	
07:30:00	23	2	4	0	0	29	1	20	0	0	0	21	2	9	0	0	0	11	0	16	29	0	2	45	106	
07:45:00	17	4	11	0	0	32	8	23	0	0	0	31	1	8	1	0	0	10	2	24	26	0	0	52	125	373
08:00:00	25	3	4	0	0	32	11	18	0	0	0	29	1	4	0	0	0	5	1	22	24	0	0	47	113	432
08:15:00	15	4	5	0	0	24	11	24	0	0	0	35	1	7	1	0	0	9	0	24	25	0	0	49	117	461
08:30:00	12	5	11	0	0	28	9	25	2	0	0	36	4	7	1	0	0	12	1	33	13	0	0	47	123	478
08:45:00	19	7	11	0	0	37	14	35	1	0	0	50	3	7	1	0	1	11	3	26	12	0	0	41	139	492
09:00:00	21	2	7	0	0	30	10	30	0	0	0	40	1	4	0	0	0	5	2	26	25	0	1	53	128	507
09:15:00	21	3	4	0	0	28	9	25	0	0	0	34	1	3	1	0	0	5	1	22	12	0	0	35	102	492
09:30:00	18	2	6	0	0	26	4	21	0	0	0	25	0	8	0	0	0	8	1	23	12	0	0	36	95	464
09:45:00	12	5	7	0	0	24	6	21	3	0	0	30	0	4	0	0	0	4	1	16	15	0	0	32	90	415
BREAK																										
16:00:00	18	6	14	0	0	38	4	25	3	0	0	32	2	2	1	0	0	5	0	38	23	0	1	61	136	
16:15:00	28	7	8	0	0	43	6	37	3	0	0	46	0	4	0	0	1	4	0	37	16	0	1	53	146	
16:30:00	14	8	4	0	0	26	6	29	1	0	0	36	0	4	2	0	0	6	3	41	21	0	0	65	133	
16:45:00	23	4	11	0	0	38	3	19	0	0	0	22	1	10	2	0	0	13	1	37	28	0	1	66	139	554
17:00:00	23	7	6	0	0	36	8	25	0	0	0	33	0	4	0	0	0	4	3	24	21	0	0	48	121	539
17:15:00	15	11	7	0	0	33	6	27	2	0	0	35	0	2	1	0	0	3	2	28	15	0	0	45	116	509
17:30:00	17	4	4	0	0	25	3	27	2	0	0	32	1	5	1	0	0	7	1	26	5	0	0	32	96	472
17:45:00	18	2	14	0	0	34	6	20	0	0	0	26	0	2	1	0	0	3	0	14	9	0	0	23	86	419
18:00:00	15	12	5	0	0	32	7	18	3	0	0	28	2	1	1	0	1	4	3	14	7	0	1	24	88	386
18:15:00	14	8	8	0	0	30	2	22	0	0	0	24	0	6	2	0	0	8	4	21	12	0	1	37	99	369
18:30:00	14	7	4	0	0	25	1	18	0	0	0	19	2	4	0	0	0	6	0	24	12	0	1	36	86	359
18:45:00	6	6	4	0	0	16	2	12	1	0	0	15	0	3	2	0	0	5	2	14	11	0	0	27	63	336
Grand Total	418	123	163	0	0	704	148	542	21	0	0	711	25	116	18	0	3	159	31	575	409	0	12	1015	2589	-
Approach%	59.4%	17.5%	23.2%	0%		-	20.8%	76.2%	3%	0%		-	15.7%	73%	11.3%	0%		-	3.1%	56.7%	40.3%	0%		-	-	-
Totals %	16.1%	4.8%	6.3%	0%		27.2%	5.7%	20.9%	0.8%	0%		27.5%	1%	4.5%	0.7%	0%		6.1%	1.2%	22.2%	15.8%	0%		39.2%	-	-
Heavy	12	4	2	0		-	6	44	1	0		-	0	2	3	0		-	1	28	15	0		-	-	-
Heavy %	2.9%	3.3%	1.2%	0%		-	4.1%	8.1%	4.8%	0%		-	0%	1.7%	16.7%	0%		-	3.2%	4.9%	3.7%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)

Start Time	N Approach ELIZABETH ST						E Approach KILLALY ST E						S Approach ELIZABETH ST						W Approach KILLALY ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	15	4	5	0	0	24	11	24	0	0	0	35	1	7	1	0	0	9	0	24	25	0	0	49	117
08:30:00	12	5	11	0	0	28	9	25	2	0	0	36	4	7	1	0	0	12	1	33	13	0	0	47	123
08:45:00	19	7	11	0	0	37	14	35	1	0	0	50	3	7	1	0	1	11	3	26	12	0	0	41	139
09:00:00	21	2	7	0	0	30	10	30	0	0	0	40	1	4	0	0	0	5	2	26	25	0	1	53	128
Grand Total	67	18	34	0	0	119	44	114	3	0	0	161	9	25	3	0	1	37	6	109	75	0	1	190	507
Approach%	56.3%	15.1%	28.6%	0%		-	27.3%	70.8%	1.9%	0%		-	24.3%	67.6%	8.1%	0%		-	3.2%	57.4%	39.5%	0%		-	-
Totals %	13.2%	3.6%	6.7%	0%		23.5%	8.7%	22.5%	0.6%	0%		31.8%	1.8%	4.9%	0.6%	0%		7.3%	1.2%	21.5%	14.8%	0%		37.5%	-
PHF	0.8	0.64	0.77	0		0.8	0.79	0.81	0.38	0		0.81	0.56	0.89	0.75	0		0.77	0.5	0.83	0.75	0		0.9	-
Heavy	1	2	2	0		5	4	15	0	0		19	0	1	1	0		2	0	9	4	0		13	-
Heavy %	1.5%	11.1%	5.9%	0%		4.2%	9.1%	13.2%	0%	0%		11.8%	0%	4%	33.3%	0%		5.4%	0%	8.3%	5.3%	0%		6.8%	-
Lights	66	16	32	0		114	40	99	3	0		142	9	24	2	0		35	6	100	71	0		177	-
Lights %	98.5%	88.9%	94.1%	0%		95.8%	90.9%	86.8%	100%	0%		88.2%	100%	96%	66.7%	0%		94.6%	100%	91.7%	94.7%	0%		93.2%	-
Single-Unit Trucks	0	2	0	0		2	1	3	0	0		4	0	1	1	0		2	0	1	0	0		1	-
Single-Unit Trucks %	0%	11.1%	0%	0%		1.7%	2.3%	2.6%	0%	0%		2.5%	0%	4%	33.3%	0%		5.4%	0%	0.9%	0%	0%		0.5%	-
Buses	1	0	2	0		3	3	11	0	0		14	0	0	0	0		0	0	7	2	0		9	-
Buses %	1.5%	0%	5.9%	0%		2.5%	6.8%	9.6%	0%	0%		8.7%	0%	0%	0%	0%		0%	0%	6.4%	2.7%	0%		4.7%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	2	0		3	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.9%	2.7%	0%		1.6%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	50%	-	-	-	-	-	50%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

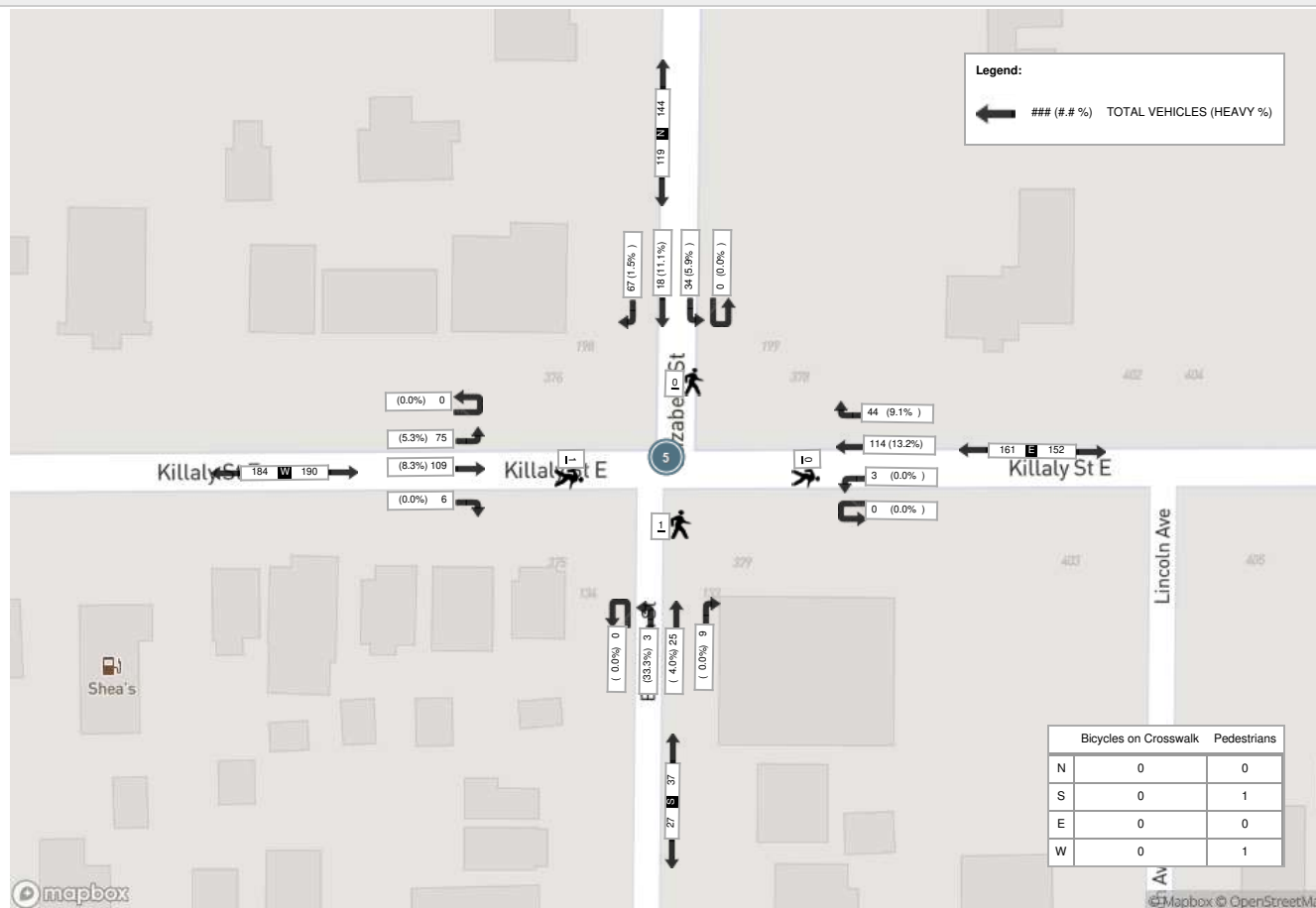


Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)

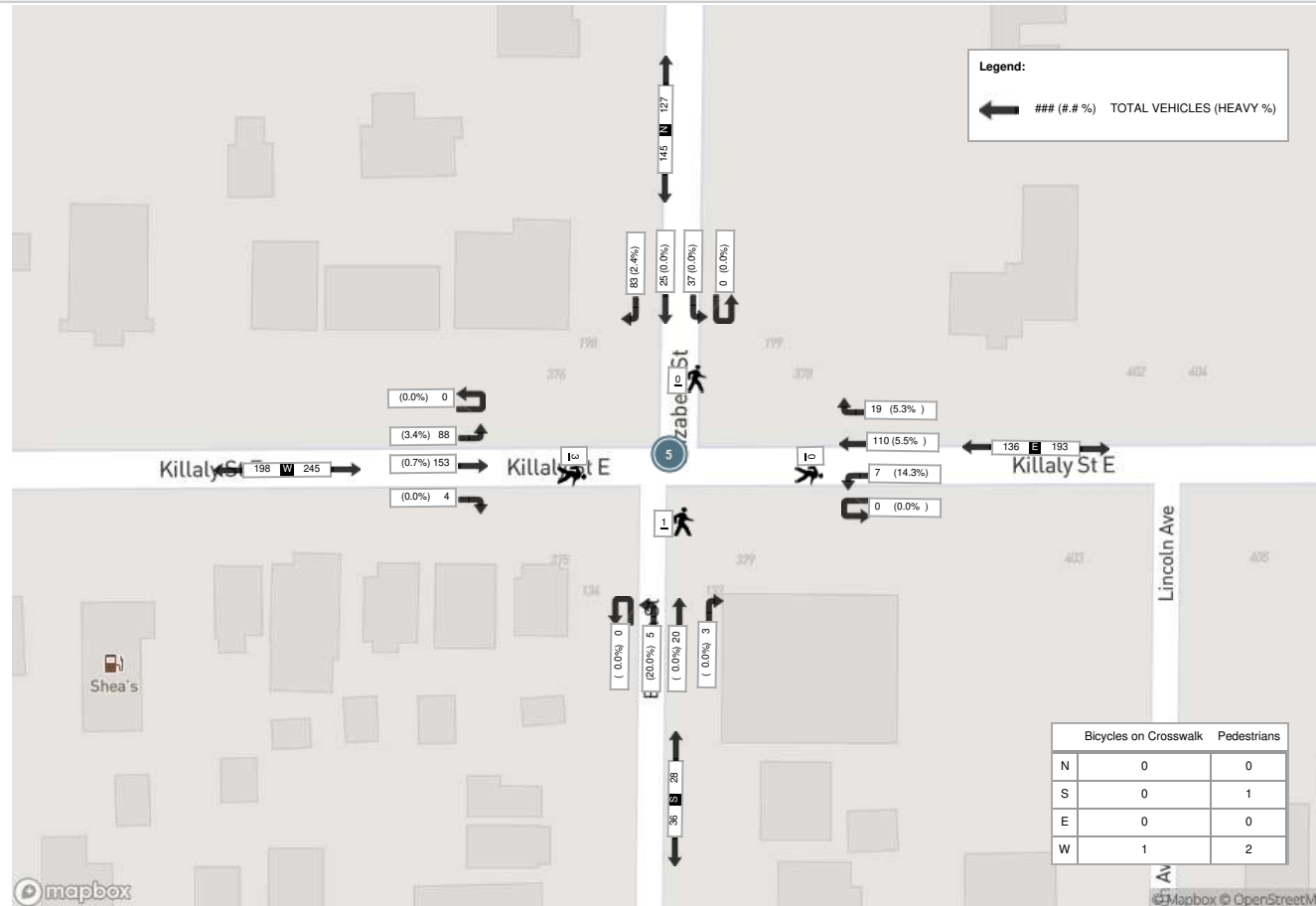
Start Time	N Approach ELIZABETH ST						E Approach KILLALY ST E						S Approach ELIZABETH ST						W Approach KILLALY ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	18	6	14	0	0	38	4	25	3	0	0	32	2	2	1	0	0	5	0	38	23	0	1	61	136
16:15:00	28	7	8	0	0	43	6	37	3	0	0	46	0	4	0	0	1	4	0	37	16	0	1	53	146
16:30:00	14	8	4	0	0	26	6	29	1	0	0	36	0	4	2	0	0	6	3	41	21	0	0	65	133
16:45:00	23	4	11	0	0	38	3	19	0	0	0	22	1	10	2	0	0	13	1	37	28	0	1	66	139
Grand Total	83	25	37	0	0	145	19	110	7	0	0	136	3	20	5	0	1	28	4	153	88	0	3	245	554
Approach%	57.2%	17.2%	25.5%	0%		-	14%	80.9%	5.1%	0%		-	10.7%	71.4%	17.9%	0%		-	1.6%	62.4%	35.9%	0%		-	-
Totals %	15%	4.5%	6.7%	0%		26.2%	3.4%	19.9%	1.3%	0%		24.5%	0.5%	3.6%	0.9%	0%		5.1%	0.7%	27.6%	15.9%	0%		44.2%	-
PHF	0.74	0.78	0.66	0		0.84	0.79	0.74	0.58	0		0.74	0.38	0.5	0.63	0		0.54	0.33	0.93	0.79	0		0.93	-
Heavy	2	0	0	0		2	1	6	1	0		8	0	0	1	0		1	0	1	3	0		4	-
Heavy %	2.4%	0%	0%	0%		1.4%	5.3%	5.5%	14.3%	0%		5.9%	0%	0%	20%	0%		3.6%	0%	0.7%	3.4%	0%		1.6%	-
Lights	81	25	37	0		143	18	104	6	0		128	3	20	4	0		27	4	152	85	0		241	-
Lights %	97.6%	100%	100%	0%		98.6%	94.7%	94.5%	85.7%	0%		94.1%	100%	100%	80%	0%		96.4%	100%	99.3%	96.6%	0%		98.4%	-
Single-Unit Trucks	1	0	0	0		1	1	2	1	0		4	0	0	1	0		1	0	0	1	0		1	-
Single-Unit Trucks %	1.2%	0%	0%	0%		0.7%	5.3%	1.8%	14.3%	0%		2.9%	0%	0%	20%	0%		3.6%	0%	0%	1.1%	0%		0.4%	-
Buses	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	1	0	0		1	-
Buses %	0%	0%	0%	0%		0%	0%	3.6%	0%	0%		2.9%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.4%	-
Articulated Trucks	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	2	0		2	-
Articulated Trucks %	1.2%	0%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	2.3%	0%		0.8%	-
Pedestrians	-	-	-	-	0	-	-	-	-	0		-	-	-	-	1		-	-	-	-	2		-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	0%		-	-	-	-	25%		-	-	-	-	50%		-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0		-	-	-	-	0		-	-	-	-	1		-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	25%		-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (4.78 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (6.31 °C)





Turning Movement Count (5 . KILLALY ST E & ELIZABETH ST)

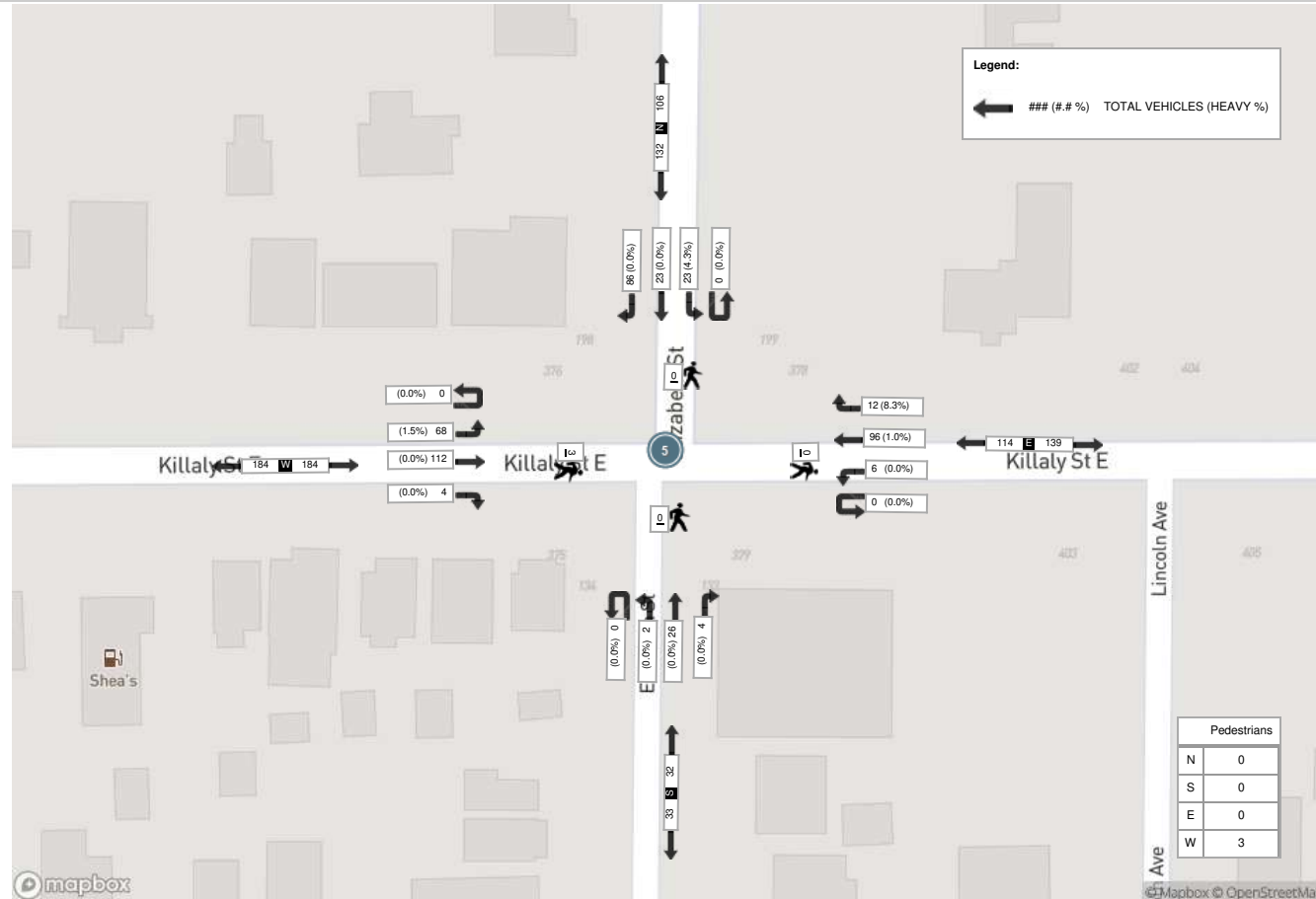
Start Time	N Approach ELIZABETH ST						E Approach KILLALY ST E						S Approach ELIZABETH ST						W Approach KILLALY ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	UTurn N-N	Peds N:	Approach Total	Right E-N	Thru E-W	Left E-S	UTurn E-E	Peds E:	Approach Total	Right S-E	Thru S-N	Left S-W	UTurn S-S	Peds S:	Approach Total	Right W-S	Thru W-E	Left W-N	UTurn W-W	Peds W:	Approach Total		
10:00:00	18	2	2	0	0	22	3	22	0	0	0	25	2	4	4	0	0	10	0	15	17	0	0	32	89	
10:15:00	27	4	4	0	0	35	4	21	0	0	0	25	2	4	1	0	0	7	0	15	23	0	0	38	105	
10:30:00	21	5	8	0	0	34	3	23	2	0	0	28	0	6	3	0	0	9	3	19	28	0	2	50	121	
10:45:00	12	1	3	0	0	16	3	20	2	0	0	25	0	4	0	0	0	4	0	16	17	0	0	33	78	393
11:00:00	18	6	6	0	0	30	7	17	0	0	0	24	0	6	1	0	0	7	1	24	27	0	0	52	113	417
11:15:00	26	6	6	0	0	38	2	31	1	0	0	34	0	4	1	0	0	5	0	27	25	0	1	52	129	441
11:30:00	10	7	5	0	0	22	3	30	0	0	0	33	3	2	1	0	0	6	1	24	20	0	0	45	106	426
11:45:00	16	5	5	0	0	26	9	19	1	0	0	29	1	3	0	0	0	4	0	21	23	0	0	44	103	451
12:00:00	15	3	6	0	0	24	8	16	1	0	0	25	1	2	1	0	0	4	1	23	17	0	0	41	94	432
12:15:00	18	4	1	0	0	23	4	26	2	0	0	32	1	6	0	0	0	7	0	23	22	0	3	45	107	410
12:30:00	31	7	6	0	0	44	2	24	1	0	0	27	2	4	0	0	0	6	0	23	18	0	1	41	118	422
12:45:00	19	7	1	0	0	27	2	26	2	0	0	30	0	8	1	0	0	9	2	29	22	0	0	53	119	438
13:00:00	20	3	10	0	0	33	4	20	2	0	0	26	1	7	0	0	0	8	0	33	14	0	2	47	114	458
13:15:00	16	6	6	0	0	28	4	26	1	0	0	31	1	7	1	0	0	9	2	27	14	0	0	43	111	462
13:30:00	12	4	5	0	0	21	4	27	0	0	0	31	0	8	0	0	0	8	1	26	17	0	1	44	104	448
13:45:00	13	9	1	0	0	23	4	15	0	0	0	19	2	4	1	0	0	7	0	22	17	0	0	39	88	417
Grand Total	292	79	75	0	0	446	66	363	15	0	0	444	16	79	15	0	0	110	11	367	321	0	10	699	1699	-
Approach%	65.5%	17.7%	16.8%	0%		-	14.9%	81.8%	3.4%	0%		-	14.5%	71.8%	13.6%	0%		-	1.6%	52.5%	45.9%	0%		-	-	-
Totals %	17.2%	4.6%	4.4%	0%		26.3%	3.9%	21.4%	0.9%	0%		26.1%	0.9%	4.6%	0.9%	0%		6.5%	0.6%	21.6%	18.9%	0%		41.1%	-	-
Heavy	3	0	1	0		-	1	3	0	0		-	0	0	0	0		-	0	1	3	0		-	-	-
Heavy %	1%	0%	1.3%	0%		-	1.5%	0.8%	0%	0%		-	0%	0%	0%	0%		-	0%	0.3%	0.9%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 12:30 PM - 01:30 PM Weather: Overcast Clouds (1.02 °C)

Start Time	N Approach ELIZABETH ST						E Approach KILLALY ST E						S Approach ELIZABETH ST						W Approach KILLALY ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
12:30:00	31	7	6	0	0	44	2	24	1	0	0	27	2	4	0	0	0	6	0	23	18	0	1	41	118
12:45:00	19	7	1	0	0	27	2	26	2	0	0	30	0	8	1	0	0	9	2	29	22	0	0	53	119
13:00:00	20	3	10	0	0	33	4	20	2	0	0	26	1	7	0	0	0	8	0	33	14	0	2	47	114
13:15:00	16	6	6	0	0	28	4	26	1	0	0	31	1	7	1	0	0	9	2	27	14	0	0	43	111
Grand Total	86	23	23	0	0	132	12	96	6	0	0	114	4	26	2	0	0	32	4	112	68	0	3	184	462
Approach%	65.2%	17.4%	17.4%	0%		-	10.5%	84.2%	5.3%	0%		-	12.5%	81.3%	6.3%	0%		-	2.2%	60.9%	37%	0%		-	-
Totals %	18.6%	5%	5%	0%		28.6%	2.6%	20.8%	1.3%	0%		24.7%	0.9%	5.6%	0.4%	0%		6.9%	0.9%	24.2%	14.7%	0%		39.8%	-
PHF	0.69	0.82	0.58	0		0.75	0.75	0.92	0.75	0		0.92	0.5	0.81	0.5	0		0.89	0.5	0.85	0.77	0		0.87	-
Heavy	0	0	1	0		1	1	1	0	0		2	0	0	0	0		0	0	0	1	0		1	-
Heavy %	0%	0%	4.3%	0%		0.8%	8.3%	1%	0%	0%		1.8%	0%	0%	0%	0%		0%	0%	0%	1.5%	0%		0.5%	-
Lights	86	23	22	0		131	11	95	6	0		112	4	26	2	0		32	4	112	67	0		183	-
Lights %	100%	100%	95.7%	0%		99.2%	91.7%	99%	100%	0%		98.2%	100%	100%	100%	0%		100%	100%	100%	98.5%	0%		99.5%	-
Single-Unit Trucks	0	0	1	0		1	1	0	0	0		1	0	0	0	0		0	0	0	1	0		1	-
Single-Unit Trucks %	0%	0%	4.3%	0%		0.8%	8.3%	0%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	0%	1.5%	0%		0.5%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	100%		-

Peak Hour: 12:30 PM - 01:30 PM Weather: Overcast Clouds (1.02 °C)



Signal Code: HW3H14

Intersection: HWY #3 & HWY #140

Municipality: ptc colborne

Owner: MTO

Last Modified: 2021-10-20 1:14:27 PM

Timing Parameters	EBD & WBD HWY #3	NBD & SBD HWY #140	n/a	n/a	n/a	n/a
Min Green	15	10	0	0	0	0
Walk	10	10	0	0	0	0
Ped Clearance	15	15	0	0	0	0
Vehicle Ext.	4.5	3	0	0	0	0
Max Green	35	30	0	0	0	0
Yellow	5.9	5.4	0	0	0	0
All Red	2	2	0	0	0	0

Offset	
Minimum Cycle	40.3
Pedestrian Cycle	65.3
Maximum Cycle	80.3
Operation	SA

Installed On: 2011-08-18

Count Date: --/--/----

FA = Fully Actuated SA = Semi Actuated FT = Fixed Time

Close Window

Print Entry*

Refresh Entry

APPENDIX D

2023 Existing Conditions Detailed Capacity Analysis

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	129	72	47	180	51	69	113	38	23	75	144
Future Volume (vph)	109	129	72	47	180	51	69	113	38	23	75	144
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					1.00						
Fr't			0.850			0.850		0.962				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1083	1401	1369	1073	1415	1275	0	1335	1597	957
Flt Permitted	0.634			0.668			0.704			0.653		
Satd. Flow (perm)	857	1429	1083	985	1369	1069	1048	1275	0	918	1597	957
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			60		24				157
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	118	140	78	51	196	55	75	123	41	25	82	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	140	78	51	196	55	75	164	0	25	82	157
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effect Green (s)	17.1	17.1	17.1	17.1	17.1	17.1	30.1	30.1		30.1	30.1	30.1
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.48	0.48		0.48	0.48	0.48
v/c Ratio	0.50	0.36	0.22	0.19	0.52	0.16	0.15	0.26		0.06	0.11	0.29
Control Delay (s/veh)	27.3	20.9	6.3	18.9	24.7	6.0	11.1	10.3		10.4	10.3	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	27.3	20.9	6.3	18.9	24.7	6.0	11.1	10.3		10.4	10.3	3.9
LOS	C	C	A	B	C	A	B	B		B	B	A
Approach Delay (s/veh)		19.8			20.3			10.6			6.5	

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			C			B			A		
Queue Length 50th (m)	12.9	15.0	0.0	4.8	22.7	0.0	4.4	8.9		1.5	4.7	0.0
Queue Length 95th (m)	28.2	29.5	8.6	12.4	42.4	6.8	13.9	25.1		6.4	14.2	11.3
Internal Link Dist (m)	383.5			817.1			1020.5			134.6		
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0			115.0		25.0
Base Capacity (vph)	480	801	642	552	768	626	504	625		441	768	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.25	0.17	0.12	0.09	0.26	0.09	0.15	0.26		0.06	0.11	0.29

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 62.5

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.52

Intersection Signal Delay (s/veh): 14.9

Intersection LOS: B

Intersection Capacity Utilization 69.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

Queues

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

2023 AM

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	118	140	78	51	196	55	75	164	25	82	157
v/c Ratio	0.50	0.36	0.22	0.19	0.52	0.16	0.15	0.26	0.06	0.11	0.29
Control Delay (s/veh)	27.3	20.9	6.3	18.9	24.7	6.0	11.1	10.3	10.4	10.3	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.3	20.9	6.3	18.9	24.7	6.0	11.1	10.3	10.4	10.3	3.9
Queue Length 50th (m)	12.9	15.0	0.0	4.8	22.7	0.0	4.4	8.9	1.5	4.7	0.0
Queue Length 95th (m)	28.2	29.5	8.6	12.4	42.4	6.8	13.9	25.1	6.4	14.2	11.3
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	480	801	642	552	768	626	504	625	441	768	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.17	0.12	0.09	0.26	0.09	0.15	0.26	0.06	0.11	0.29
Intersection Summary											

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2023 AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	175	0	0	261	0	0	0	0	0	0	2
Future Volume (vph)	1	175	0	0	261	0	0	0	0	0	0	2
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865											
Flt Protected												
Satd. Flow (prot)	0	1227	0	0	1177	0	0	1454	0	0	1258	0
Flt Permitted												
Satd. Flow (perm)	0	1227	0	0	1177	0	0	1454	0	0	1258	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	190	0	0	284	0	0	0	0	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	191	0	0	284	0	0	0	0	0	2	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	27.6%				ICU Level of Service A							
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	168	7	2	244	0	12	0	2	0	2	2
Future Volume (vph)	1	168	7	2	244	0	12	0	2	0	2	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.982			0.932	
Flt Protected								0.958				
Satd. Flow (prot)	0	1024	1137	0	992	1325	0	1380	0	0	1362	0
Flt Permitted								0.958				
Satd. Flow (perm)	0	1024	1137	0	992	1325	0	1380	0	0	1362	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	1	183	8	2	265	0	13	0	2	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	184	8	0	267	0	0	15	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 36.7%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2023 AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	91	6	7	86	2	5	5	4	2	4	1
Future Volume (vph)	1	91	6	7	86	2	5	5	4	2	4	1
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.991			0.997			0.961			0.981		
Flt Protected				0.996			0.982			0.986		
Satd. Flow (prot)	0	1404	0	0	1360	0	0	1377	0	0	1414	0
Flt Permitted				0.996			0.982			0.986		
Satd. Flow (perm)	0	1404	0	0	1360	0	0	1377	0	0	1414	0
Link Speed (k/h)	60			60			50			60		
Link Distance (m)	840.4			560.6			68.7			892.0		
Travel Time (s)	50.4			33.6			4.9			53.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	1	99	7	8	93	2	5	5	4	2	4	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	103	0	0	14	0	0	7	0
Sign Control	Free			Free			Stop			Stop		

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.7%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2023 AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	109	6	3	114	44	3	25	9	34	18	67
Future Volume (vph)	75	109	6	3	114	44	3	25	9	34	18	67
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.963			0.966			0.924	
Flt Protected		0.981			0.999			0.996			0.986	
Satd. Flow (prot)	0	1356	0	0	1277	0	0	1409	0	0	1332	0
Flt Permitted		0.981			0.999			0.996			0.986	
Satd. Flow (perm)	0	1356	0	0	1277	0	0	1409	0	0	1332	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	82	118	7	3	124	48	3	27	10	37	20	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	175	0	0	40	0	0	130	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.1%				ICU Level of Service A							
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	211	37	21	229	45	53	124	37	62	94	277
Future Volume (vph)	190	211	37	21	229	45	53	124	37	62	94	277
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.850			0.850		0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1054	1401	1566	1137	1401	1308	0	1387	1597	1044
Flt Permitted	0.605			0.616			0.691			0.647		
Satd. Flow (perm)	820	1429	1054	908	1566	1137	1019	1308	0	945	1597	1044
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			60			60		21				301
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	9%	2%	4%	1%	2%	3%	1%	3%	2%	10%
Adj. Flow (vph)	207	229	40	23	249	49	58	135	40	67	102	301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	229	40	23	249	49	58	175	0	67	102	301
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	23.7	23.7	23.7	23.7	23.7	23.7	30.3	30.3		30.3	30.3	30.3
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.34	0.44	0.44		0.44	0.44	0.44
v/c Ratio	0.74	0.47	0.10	0.07	0.47	0.11	0.13	0.30		0.16	0.15	0.48
Control Delay (s/veh)	36.5	20.7	2.8	14.7	20.3	3.9	15.5	14.9		16.0	15.0	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	36.5	20.7	2.8	14.7	20.3	3.9	15.5	14.9		16.0	15.0	5.3
LOS	D	C	A	B	C	A	B	B		B	B	A
Approach Delay (s/veh)		26.1			17.4			15.1			8.9	
Approach LOS		C			B			B			A	
Queue Length 50th (m)	26.1	26.2	0.0	2.1	26.6	0.0	4.5	12.9		5.3	8.0	0.0

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	51.8	45.5	3.8	6.5	45.2	4.9	14.6	34.2		16.7	21.8	18.6
Internal Link Dist (m)		383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0			115.0		25.0
Base Capacity (vph)	417	727	565	462	796	608	444	582		412	696	625
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.50	0.31	0.07	0.05	0.31	0.08	0.13	0.30		0.16	0.15	0.48

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 69.5

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay (s/veh): 17.1

Intersection LOS: B

Intersection Capacity Utilization 73.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

Queues

2023 PM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	207	229	40	23	249	49	58	175	67	102	301
v/c Ratio	0.74	0.47	0.10	0.07	0.47	0.11	0.13	0.30	0.16	0.15	0.48
Control Delay (s/veh)	36.5	20.7	2.8	14.7	20.3	3.9	15.5	14.9	16.0	15.0	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.5	20.7	2.8	14.7	20.3	3.9	15.5	14.9	16.0	15.0	5.3
Queue Length 50th (m)	26.1	26.2	0.0	2.1	26.6	0.0	4.5	12.9	5.3	8.0	0.0
Queue Length 95th (m)	51.8	45.5	3.8	6.5	45.2	4.9	14.6	34.2	16.7	21.8	18.6
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	417	727	565	462	796	608	444	582	412	696	625
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.31	0.07	0.05	0.31	0.08	0.13	0.30	0.16	0.15	0.48
Intersection Summary											

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2023 PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	287	0	1	274	0	1	1	0	0	0	1
Future Volume (vph)	1	287	0	1	274	0	1	1	0	0	0	1
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												0.865
Flt Protected								0.976				
Satd. Flow (prot)	0	1301	0	0	1413	0	0	1419	0	0	1258	0
Flt Permitted								0.976				
Satd. Flow (perm)	0	1301	0	0	1413	0	0	1419	0	0	1258	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Confl. Peds. (#/hr)	1						1					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	14%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	312	0	1	298	0	1	1	0	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	313	0	0	299	0	0	2	0	0	1	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	30.3%				ICU Level of Service A							
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	271	16	0	260	0	9	0	3	0	0	2
Future Volume (vph)	0	271	16	0	260	0	9	0	3	0	0	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.969			0.865	
Flt Protected								0.963				
Satd. Flow (prot)	0	1087	1137	0	1170	1325	0	1367	0	0	1270	0
Flt Permitted								0.963				
Satd. Flow (perm)	0	1087	1137	0	1170	1325	0	1367	0	0	1270	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	13%	1%	1%	5%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	0	295	17	0	283	0	10	0	3	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	295	17	0	283	0	0	13	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.8%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2023 PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	141	6	6	103	2	7	4	8	2	10	2
Future Volume (vph)	4	141	6	6	103	2	7	4	8	2	10	2
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.998			0.942			0.982	
Flt Protected		0.999			0.997			0.981			0.993	
Satd. Flow (prot)	0	1458	0	0	1372	0	0	1351	0	0	1428	0
Flt Permitted		0.999			0.997			0.981			0.993	
Satd. Flow (perm)	0	1458	0	0	1372	0	0	1351	0	0	1428	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	8%	2%	1%	1%	2%	2%	1%	2%
Adj. Flow (vph)	4	153	7	7	112	2	8	4	9	2	11	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	0	0	121	0	0	21	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.6%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2023 PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	153	4	7	110	19	5	20	3	37	25	83
Future Volume (vph)	88	153	4	7	110	19	5	20	3	37	25	83
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.981			0.986			0.923	
Flt Protected		0.982			0.997			0.992			0.987	
Satd. Flow (prot)	0	1429	0	0	1381	0	0	1435	0	0	1331	0
Flt Permitted		0.982			0.997			0.992			0.987	
Satd. Flow (perm)	0	1429	0	0	1381	0	0	1435	0	0	1331	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	1%	6%	1%	1%	1%	2%	0%	2%	2%
Adj. Flow (vph)	96	166	4	8	120	21	5	22	3	40	27	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	266	0	0	149	0	0	30	0	0	157	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.1%				ICU Level of Service A							
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	152	56	40	194	36	116	111	42	19	64	132
Future Volume (vph)	144	152	56	40	194	36	116	111	42	19	64	132
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.959				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1582	1054	1429	1566	1137	1401	1299	0	1387	1582	1044
Flt Permitted	0.626			0.653			0.711			0.651		
Satd. Flow (perm)	848	1582	1054	982	1566	1137	1048	1299	0	951	1582	1044
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			61			60		27				143
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	3%	9%	0%	4%	1%	2%	3%	1%	3%	3%	10%
Adj. Flow (vph)	157	165	61	43	211	39	126	121	46	21	70	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	165	61	43	211	39	126	167	0	21	70	143
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effect Green (s)	19.8	19.8	19.8	19.8	19.8	19.8	30.2	30.2		30.2	30.2	30.2
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.30	0.30	0.46	0.46		0.46	0.46	0.46
v/c Ratio	0.62	0.35	0.17	0.15	0.45	0.10	0.26	0.27		0.05	0.10	0.26
Control Delay (s/veh)	30.4	19.4	5.8	17.0	21.1	3.0	14.4	11.9		12.5	12.2	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	30.4	19.4	5.8	17.0	21.1	3.0	14.4	11.9		12.5	12.2	4.2
LOS	C	B	A	B	C	A	B	B		B	B	A
Approach Delay (s/veh)		21.7			18.1			12.9			7.3	
Approach LOS		C			B			B			A	
Queue Length 50th (m)	18.2	16.4	0.0	3.9	21.9	0.0	8.8	9.7		1.3	4.5	0.0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	37.3	30.3	7.4	10.4	39.0	3.6	25.7	28.5		6.3	14.6	11.2
Internal Link Dist (m)		383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0			115.0		25.0
Base Capacity (vph)	457	853	596	529	844	640	484	614		439	731	559
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.34	0.19	0.10	0.08	0.25	0.06	0.26	0.27		0.05	0.10	0.26

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 65.4

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay (s/veh): 15.9

Intersection LOS: B

Intersection Capacity Utilization 64.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1  Ø2	#1  Ø4
37.4 s	42.9 s
#1  Ø6	#1  Ø8
37.4 s	42.9 s

Queues

2023 SAT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	157	165	61	43	211	39	126	167	21	70	143
v/c Ratio	0.62	0.35	0.17	0.15	0.45	0.10	0.26	0.27	0.05	0.10	0.26
Control Delay (s/veh)	30.4	19.4	5.8	17.0	21.1	3.0	14.4	11.9	12.5	12.2	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.4	19.4	5.8	17.0	21.1	3.0	14.4	11.9	12.5	12.2	4.2
Queue Length 50th (m)	18.2	16.4	0.0	3.9	21.9	0.0	8.8	9.7	1.3	4.5	0.0
Queue Length 95th (m)	37.3	30.3	7.4	10.4	39.0	3.6	25.7	28.5	6.3	14.6	11.2
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	457	853	596	529	844	640	484	614	439	731	559
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.19	0.10	0.08	0.25	0.06	0.26	0.27	0.05	0.10	0.26
Intersection Summary											

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2023 SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	235	0	0	245	0	0	0	0	0	0	0
Future Volume (vph)	0	235	0	0	245	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1440	0	0	1454	0	0	1454	0	0	1454	0
Flt Permitted												
Satd. Flow (perm)	0	1440	0	0	1454	0	0	1454	0	0	1454	0
Link Speed (k/h)		70			80			50			50	
Link Distance (m)		841.1			852.0			103.0			194.5	
Travel Time (s)		43.3			38.3			7.4			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	255	0	0	266	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	255	0	0	266	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	19.9%				ICU Level of Service A							
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	228	7	1	236	2	2	1	2	0	1	0
Future Volume (vph)	0	228	7	1	236	2	2	1	2	0	1	0
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.946				
Flt Protected								0.980				
Satd. Flow (prot)	0	1192	1137	0	1204	1126	0	1353	0	0	1454	0
Flt Permitted								0.980				
Satd. Flow (perm)	0	1192	1137	0	1204	1126	0	1353	0	0	1454	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	0	248	8	1	257	2	2	1	2	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	248	8	0	258	2	0	5	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 36.0%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2023 SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	114	8	6	86	1	3	2	9	4	7	3
Future Volume (vph)	0	114	8	6	86	1	3	2	9	4	7	3
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991			0.999			0.910			0.973	
Fl _t Protected					0.997			0.990			0.987	
Satd. Flow (prot)	0	1455	0	0	1461	0	0	1314	0	0	1404	0
Fl _t Permitted					0.997			0.990			0.987	
Satd. Flow (perm)	0	1455	0	0	1461	0	0	1314	0	0	1404	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	1%	2%	1%	1%	2%	2%	1%	2%
Adj. Flow (vph)	0	124	9	7	93	1	3	2	10	4	8	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	101	0	0	15	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.2%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2023 SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	112	4	6	96	12	2	25	4	23	23	86
Future Volume (vph)	68	112	4	6	96	12	2	25	4	23	23	86
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.986			0.984			0.912	
Flt Protected		0.982			0.997			0.997			0.991	
Satd. Flow (prot)	0	1438	0	0	1443	0	0	1439	0	0	1316	0
Flt Permitted		0.982			0.997			0.997			0.991	
Satd. Flow (perm)	0	1438	0	0	1443	0	0	1439	0	0	1316	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	1%	1%	1%	1%	1%	2%	1%	2%	2%
Adj. Flow (vph)	74	122	4	7	104	13	2	27	4	25	25	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	124	0	0	33	0	0	143	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	42.6%				ICU Level of Service A							
Analysis Period (min)	15											

APPENDIX E

Growth Rate Analysis

LHRS	Offset	Year	Hwy No	Hwy Letter	Hwy Type	Location Description	Station #	Region	PDCS #	Pattern	DHV %	Design Hr.	Design Hr.	AADT	Count Code
32780	0	2010	58	A	KING	HWY 140	210	CENTRAL	5	LR	21	0	N/A	6,750	4
32780	0	2011	58	A	KING	HWY 140	210	CENTRAL	5	LR	19	0	N/A	6,800	1
32780	0	2012	58	A	KING	HWY 140	210	CENTRAL	5	LR	19	0	N/A	9,000	2
32780	0	2013	58	A	KING	HWY 140	210	CENTRAL	2	CTR	10	55	W	8,800	2
32780	0	2014	58	A	KING	HWY 140	210	CENTRAL	2	CTR	10	55	W	7,700	1
32780	0	2015	58	A	KING	HWY 140	210	CENTRAL	2	CTR	10	55	N/A	6,950	4
32780	0	2016	58	A	KING	HWY 140	210	CENTRAL	2	CTR	10	55	N/A	7,750	1
32780	0	2017	58	A	KING	HWY 140	210	CENTRAL	9	CTR	12	55	N/A	7,800	1
32780	0	2018	58	A	KING	HWY 140	210	CENTRAL	9	CTR	12	55	N/A	7,900	1
32780	0	2019	58	A	KING	HWY 140	210	CENTRAL	9	CTR	12	55	N/A	8,000	1
45700	0	2010	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	34	UC	10	51	N/A	7,700	4
45700	0	2011	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	34	UC	9	51	N/A	7,500	2
45700	0	2012	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	74	UC	9	51	N/A	8,000	4
45700	0	2013	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	74	UC	9	52	S	8,600	4
45700	0	2014	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	74	UC	9	52	S	8,000	1
45700	0	2015	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	74	UC	9	57	S	8,500	4
45700	0	2016	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	74	UC	9	57	S	7,800	2
45700	0	2017	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	74	UC	9	57	N/A	9,400	1
45700	0	2018	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	74	UC	9	57	N/A	9,650	1
45700	0	2019	140		KING	HWY 3 MAIN ST E PORT COLBORNE	5	CENTRAL	74	UC	9	57	N/A	9,900	1

Compounded Growth Rate		
1	Highway 140	1.7%
2	Main Street East (Highway 3)	2.5%

APPENDIX F

Background Development Trips



Traffic Impact Study

Port Colborne Quarries Pit 3 Expansion



Prepared for Port Colborne Quarries Inc.
by IBI Group
October 19, 2020

Document Control Page

CLIENT:	Port Colborne Quarries Inc.
PROJECT NAME:	Port Colborne Quarries Pit 3 Expansion
REPORT TITLE:	Traffic Impact Study
IBI REFERENCE:	115774
VERSION:	2.0
DIGITAL MASTER:	\\caneast.ibigroup.com\JWT\115774_PortColborne\5.9 Drawings\Traffic\10.0 Reports\TTR_PortColborneQuarry_TIS_FINAL_2020-10-19.docx
ORIGINATOR:	Eric M°Laren
REVIEWER:	David Hook Hugo Chan
AUTHORIZATION:	Justin Date
CIRCULATION LIST:	Shawn Tylee – Rankin Construction c/o Port Colborne Quarries Inc. Alexandra Boucetta – MTO David Sisco – IBI Group Matt Colwill – IBI Group Dan Aquilina – City of Port Colborne
HISTORY:	1.0 – Draft Report – Issued for Client Review – July 12, 2019 2.0 – Draft Report – Issued for Client Review – May 5, 2020 3.0 – Final Report – Issued for Approval – October 19, 2020

6.4 Trip Generation

Based on information provided by Port Colborne Quarries Inc. (PCQI) staff, an annual extraction rate of 1,000,000 tonnes per year is considered a reasonable annual extraction rate for the planned Pit 3 expansion operations, based on past performance. Given that there is no intention to increase extraction capacity, an annual extraction rate of 1,000,000 tonnes per year will be used to estimate the number of truck trips generated by subject site Pit 3 expansion operations through to the 2041 horizon.

PCQI staff indicate that truck volumes are steady throughout the day with no peaking. With approximately 250 workdays per year, 10 work hours per work day, and an average load of 26 tonnes per truck, it is expected that the subject site Pit 3 expansion operations will generate an average of 15.4 truck trips per hour.

For the purposes of the Synchro traffic capacity analysis, the truck volumes have been converted into equivalent passenger car volumes. Based on the Transportation Research Board's Highway Capacity Manual 2010 (HCM), a heavy vehicle is equivalent to two passenger cars and therefore the passenger car equivalent (PCE) trips generated by the subject site (i.e. automobile and truck traffic combined) are provided.

The traffic counts recorded in February 2019 found that during the weekday morning peak hour, the subject site generated nine truck and six automobile trips. During the afternoon peak hour, six truck and 23 automobile trips were observed. This is well below the volume of truck-only trips calculated based on received PCQI operations information. This may be due to the traffic count being conducted during the winter, when trucking volumes may be lower than during the summer.

This trip estimate is compared to observed existing traffic activity at the subject site below in **Exhibit 6-5**. The trips determined to be most appropriate for usage in this TIS traffic analysis is also provided.

Exhibit 6-5 - Trip Generation Results

SUBJECT SITE LAND USE	TRIP CALCULATION METHOD	AM PEAK HOUR TRIPS (PCE)			PM PEAK HOUR TRIPS (PCE)		
		IN	OUT	TOTAL	IN	OUT	TOTAL
PCQI quarry operations	PCQI extraction rate, work scheduling, truck capacity	31	31	62	0	0	0
	February 2019 traffic data observations	16	8	24	6	29	35
	Trips applied for TIS analysis	47	39	86	6	29	35

Notes:

PCE = Passenger Car Equivalent

PCQI staff have indicated that trucking activities begin around 6:00 am and the last truck leaves the site around 4:00 pm. As such, no significant volume of trucking activity is expected to occur at the site during the afternoon peak hour. Afternoon peak hour traffic will consist of employees completing their shift.

It is not anticipated that there will be an increase in the number of employees as a result of the Pit 3 expansion and employee parking is expected to remain in its current location. Existing employee trips to/from the site have already been captured in the traffic counts and no new employee trips are expected.

To be conservative, for Pit 3 expansion trucking operations, the calculated subject site truck traffic volumes are utilized in this TIS report's future total traffic analysis. The existing site traffic activity was not subtracted from the future total traffic analysis and kept as-is due to the minimal volumes observed.

6.5 Trip Distribution and Assignment

PCQI staff have indicated that during the early phases of the Pit 3 Expansion, until the Highway 3 access is constructed, all truck traffic will enter and exit the site from the existing Ramey Road access and head north or south via Highway 140.

Once the Highway 3 access is constructed but while Pit 1 is not fully backfilled, truck traffic will enter the site via the Ramey Road access to dump a load of clean fill in Pit 1, then traverse the site internally to the Pit 3 Expansion to pick up a load of new material, then exit via the Highway 3 access.

Once Pit 1 is fully backfilled, it is expected that all truck traffic will enter and exit via the Highway 3 access.

The truck trip distribution was determined based on discussions with PCQI staff.

Given the timing for the opening of the Highway 3 access and the projected time required to backfill Pit 1, a separate trip distribution has been assumed for each analysis year:

2031:

- 100% inbound and outbound trips via Ramey Road access:
 - 50% to/from the North via Highway 140
 - 50% to/from the West via Highway 3

2036:

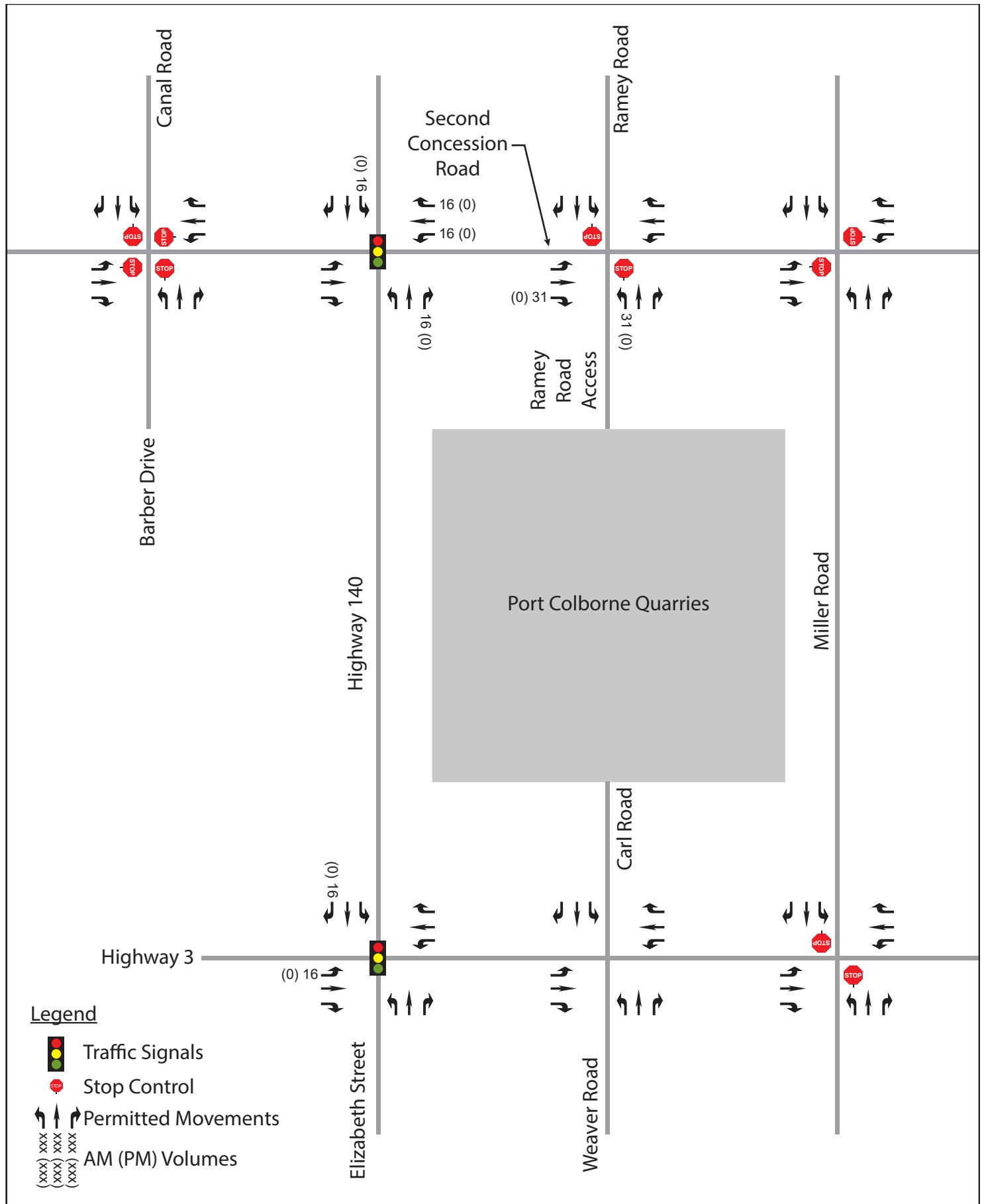
- 100% inbound trips via Ramey Road access and 100% of outbound trips via Highway 3 access:
 - 45% to/from the North via Highway 140
 - 45% to/from the West via Highway 3
 - 10% to/from the East via Highway 3

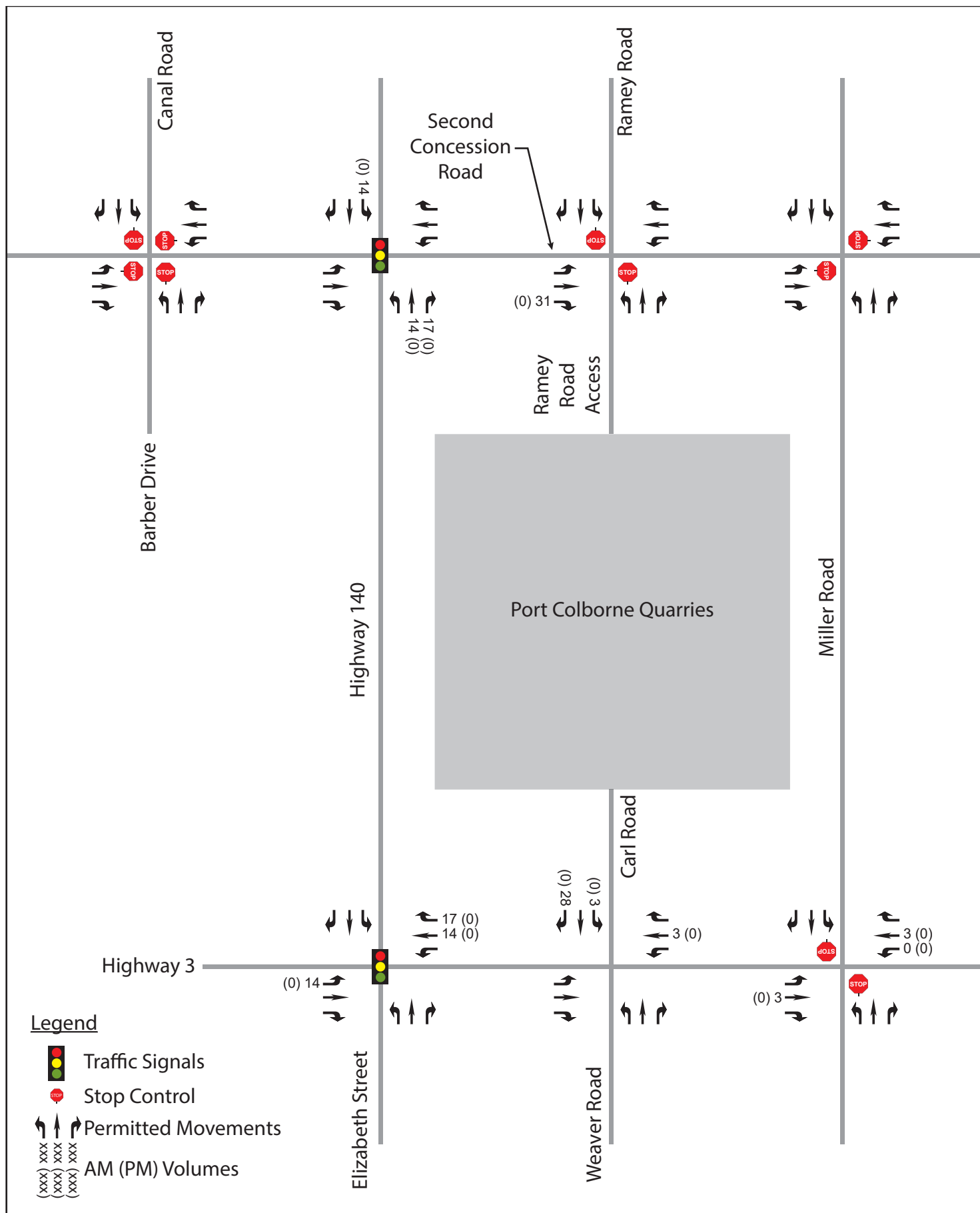
2041:

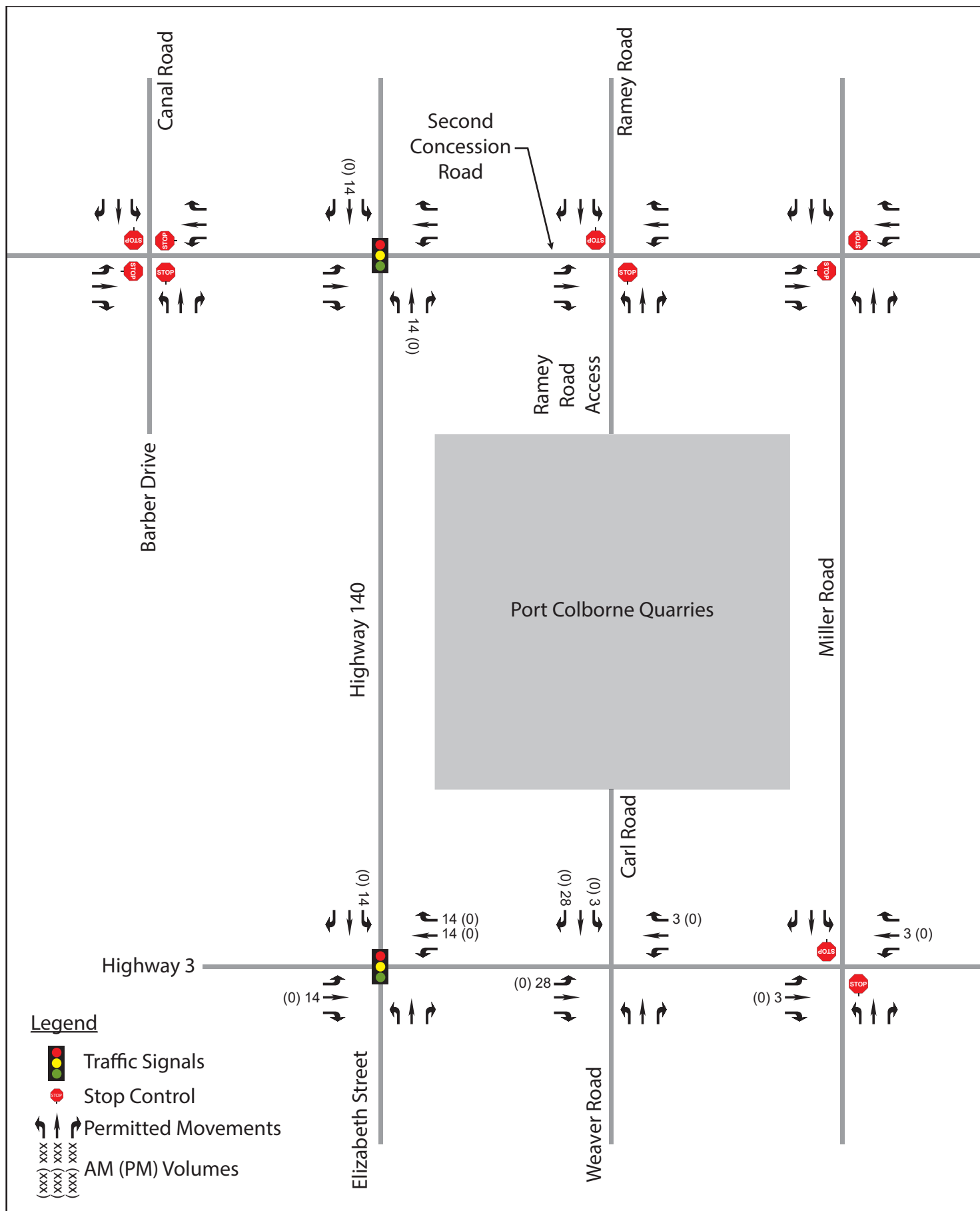
- 100% inbound and outbound trips via Highway 3 access:
 - 45% to/from the North via Highway 140
 - 45% to/from the West via Highway 3
 - 10% to/from the East via Highway 3

Using the above distributions, the estimated 2031, 2036 and, 2041 site-generated peak hour traffic volumes were assigned to the adjacent road network along logical routes, as shown in **Exhibits 6-6 to 6-8**, respectively.

Given the seasonal reduced load restrictions and the rural residential nature of Second Concession Road and Miller Road, the distribution of site-generated traffic did not assign additional traffic to these roadways nor have these roadways been identified as planned trucking routes by PCQI staff.







APPENDIX G

2031 Future Background Detailed Capacity Analysis

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	158	88	58	220	63	69	113	38	27	86	181
Future Volume (vph)	149	158	88	58	220	63	69	113	38	27	86	181
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					1.00						
Fr't			0.850			0.850		0.962				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1083	1401	1369	1073	1415	1275	0	1335	1597	957
Flt Permitted	0.610			0.649			0.697			0.653		
Satd. Flow (perm)	824	1429	1083	957	1369	1069	1038	1275	0	918	1597	957
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96			68		24				197
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	162	172	96	63	239	68	75	123	41	29	93	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	172	96	63	239	68	75	164	0	29	93	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effect Green (s)	20.6	20.6	20.6	20.6	20.6	20.6	30.3	30.3		30.3	30.3	30.3
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31	0.31	0.46	0.46		0.46	0.46	0.46
v/c Ratio	0.64	0.39	0.24	0.21	0.56	0.18	0.16	0.28		0.07	0.13	0.36
Control Delay (s/veh)	31.2	20.0	5.3	17.8	24.1	5.4	14.0	12.8		13.4	13.1	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	31.2	20.0	5.3	17.8	24.1	5.4	14.0	12.8		13.4	13.1	4.7
LOS	C	C	A	B	C	A	B	B		B	B	A
Approach Delay (s/veh)		20.9			19.6			13.2			8.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B			B			A		
Queue Length 50th (m)	19.0	18.8	0.0	6.0	28.8	0.0	5.1	10.2		2.0	6.2	0.0
Queue Length 95th (m)	38.9	34.5	8.8	14.2	50.5	7.5	17.0	30.7		8.5	19.2	14.9
Internal Link Dist (m)	383.5			817.1			1020.5			134.6		
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0			115.0		25.0
Base Capacity (vph)	439	761	621	510	729	601	474	595		419	729	544
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.37	0.23	0.15	0.12	0.33	0.11	0.16	0.28		0.07	0.13	0.36

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 66.3

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.64

Intersection Signal Delay (s/veh): 16.2

Intersection LOS: B

Intersection Capacity Utilization 72.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

Queues

2031 FB AM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	162	172	96	63	239	68	75	164	29	93	197
v/c Ratio	0.64	0.39	0.24	0.21	0.56	0.18	0.16	0.28	0.07	0.13	0.36
Control Delay (s/veh)	31.2	20.0	5.3	17.8	24.1	5.4	14.0	12.8	13.4	13.1	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.2	20.0	5.3	17.8	24.1	5.4	14.0	12.8	13.4	13.1	4.7
Queue Length 50th (m)	19.0	18.8	0.0	6.0	28.8	0.0	5.1	10.2	2.0	6.2	0.0
Queue Length 95th (m)	38.9	34.5	8.8	14.2	50.5	7.5	17.0	30.7	8.5	19.2	14.9
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	439	761	621	510	729	601	474	595	419	729	544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.23	0.15	0.12	0.33	0.11	0.16	0.28	0.07	0.13	0.36
Intersection Summary											

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	214	0	0	319	0	0	0	0	0	0	2
Future Volume (vph)	1	214	0	0	319	0	0	0	0	0	0	2
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865											
Flt Protected												
Satd. Flow (prot)	0	1226	0	0	1177	0	0	1454	0	0	1258	0
Flt Permitted												
Satd. Flow (perm)	0	1226	0	0	1177	0	0	1454	0	0	1258	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	233	0	0	347	0	0	0	0	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	234	0	0	347	0	0	0	0	0	2	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	31.5%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2031 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	214	0	0	319	0	0	0	0	0	0	2
Future Volume (Veh/h)	1	214	0	0	319	0	0	0	0	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	233	0	0	347	0	0	0	0	0	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	347			233			584	582	233	582	582	347
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	347			233			584	582	233	582	582	347
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1212			1335			422	424	806	424	424	696
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	234	347	0	2								
Volume Left	1	0	0	0								
Volume Right	0	0	0	2								
cSH	1212	1335	1700	696								
Volume to Capacity	0.00*	0.00	0.00	0.00*								
Queue Length 95th (m)	0.0	0.0	0.0	0.1								
Control Delay (s/veh)	0.0	0.0	0.0	10.2								
Lane LOS	A		A	B								
Approach Delay (s/veh)	0.0	0.0	0.0	10.2								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			31.5%	ICU Level of Service						A		
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	205	7	2	298	0	12	0	2	0	2	2
Future Volume (vph)	1	205	7	2	298	0	12	0	2	0	2	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.982			0.932	
Flt Protected								0.958				
Satd. Flow (prot)	0	1024	1137	0	991	1325	0	1380	0	0	1362	0
Flt Permitted								0.958				
Satd. Flow (perm)	0	1024	1137	0	991	1325	0	1380	0	0	1362	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	1	223	8	2	324	0	13	0	2	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	8	0	326	0	0	15	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 41.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	205	7	2	298	0	12	0	2	0	2	2
Future Volume (Veh/h)	1	205	7	2	298	0	12	0	2	0	2	2
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	223	8	2	324	0	13	0	2	0	2	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	324			231			556	553	223	555	561	324
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	324			231			556	553	223	555	561	324
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	1236			1343			440	440	817	440	435	719
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	224	8	326	0	15	4						
Volume Left	1	0	2	0	13	0						
Volume Right	0	8	0	0	2	2						
cSH	1236	1700	1343	1700	468	542						
Volume to Capacity	0.00*	0.00*	0.00*	0.00	0.03	0.00*						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.8	0.2						
Control Delay (s/veh)	0.0	0.0	0.1	0.0	12.9	11.7						
Lane LOS	A			A			B	B				
Approach Delay (s/veh)	0.0			0.1			12.9	11.7				
Approach LOS					B	B						
Intersection Summary												
Average Delay	0.5											
Intersection Capacity Utilization	41.1%			ICU Level of Service			A					
Analysis Period (min)	15											

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2031 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	91	6	7	86	2	5	5	4	2	4	1
Future Volume (vph)	1	91	6	7	86	2	5	5	4	2	4	1
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991			0.997			0.961			0.981	
Fl _t Protected					0.996			0.982			0.986	
Satd. Flow (prot)	0	1404	0	0	1360	0	0	1377	0	0	1414	0
Fl _t Permitted					0.996			0.982			0.986	
Satd. Flow (perm)	0	1404	0	0	1360	0	0	1377	0	0	1414	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	1	99	7	8	93	2	5	5	4	2	4	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	103	0	0	14	0	0	7	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2031 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	91	6	7	86	2	5	5	4	2	4	1
Future Volume (Veh/h)	1	91	6	7	86	2	5	5	4	2	4	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	99	7	8	93	2	5	5	4	2	4	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	95			106			218	216	103	221	218	94
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95			106			218	216	103	221	218	94
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	99	100	100	99	100
cM capacity (veh/h)	1499			1485			731	680	953	724	678	963
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	107	103	14	7								
Volume Left	1	8	5	2								
Volume Right	7	2	4	1								
cSH	1499	1485	761	722								
Volume to Capacity	0.00*	0.00*	0.02	0.00*								
Queue Length 95th (m)	0.0	0.1	0.4	0.2								
Control Delay (s/veh)	0.1	0.6	9.8	10.0								
Lane LOS	A	A	A	B								
Approach Delay (s/veh)	0.1	0.6	9.8	10.0								
Approach LOS			A	B								
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			21.7%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	109	6	3	114	44	3	25	9	34	18	67
Future Volume (vph)	75	109	6	3	114	44	3	25	9	34	18	67
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.963			0.966			0.924	
Flt Protected		0.981			0.999			0.996			0.986	
Satd. Flow (prot)	0	1356	0	0	1277	0	0	1409	0	0	1332	0
Flt Permitted		0.981			0.999			0.996			0.986	
Satd. Flow (perm)	0	1356	0	0	1277	0	0	1409	0	0	1332	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	82	118	7	3	124	48	3	27	10	37	20	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	175	0	0	40	0	0	130	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.1%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2031 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	109	6	3	114	44	3	25	9	34	18	67
Future Volume (Veh/h)	75	109	6	3	114	44	3	25	9	34	18	67
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	118	7	3	124	48	3	27	10	37	20	73
Pedestrians					1							
Lane Width (m)					3.6							
Walking Speed (m/s)					1.2							
Percent Blockage					0							
Right turn flare (veh)												
Median type	None						None					
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	173			125			523	465	123	465	444	149
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173			125			523	465	123	465	444	149
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			99	94	99	92	96	92
cM capacity (veh/h)	1391			1462			395	466	928	457	477	900
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	207	175	40	130								
Volume Left	82	3	3	37								
Volume Right	7	48	10	73								
cSH	1391	1462	524	637								
Volume to Capacity	0.06	0.00*	0.08	0.20								
Queue Length 95th (m)	1.5	0.0	2.0	6.1								
Control Delay (s/veh)	3.4	0.1	12.4	12.1								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.4	0.1	12.4	12.1								
Approach LOS			B	B								
Intersection Summary												
Average Delay			5.1									
Intersection Capacity Utilization			50.1%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	258	46	26	280	55	53	124	37	71	108	317
Future Volume (vph)	232	258	46	26	280	55	53	124	37	71	108	317
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1054	1401	1566	1137	1401	1308	0	1387	1597	1044
Flt Permitted	0.548			0.578			0.682			0.647		
Satd. Flow (perm)	743	1429	1054	852	1566	1137	1006	1308	0	945	1597	1044
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			60			60		21				345
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	9%	2%	4%	1%	2%	3%	1%	3%	2%	10%
Adj. Flow (vph)	252	280	50	28	304	60	58	135	40	77	117	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	252	280	50	28	304	60	58	175	0	77	117	345
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	29.3	29.3	29.3	29.3	29.3	29.3	30.3	30.3		30.3	30.3	30.3
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39	0.40	0.40		0.40	0.40	0.40
v/c Ratio	0.87	0.50	0.11	0.08	0.50	0.13	0.14	0.32		0.20	0.18	0.55
Control Delay (s/veh)	51.1	20.3	3.9	14.2	19.9	4.7	17.6	17.2		18.6	17.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	51.1	20.3	3.9	14.2	19.9	4.7	17.6	17.2		18.6	17.4	6.0
LOS	D	C	A	B	B	A	B	B		B	B	A
Approach Delay (s/veh)		32.3			17.2			17.3			10.3	
Approach LOS		C			B			B			B	
Queue Length 50th (m)	36.0	33.5	0.0	2.6	33.9	0.0	6.1	17.4		8.4	12.5	0.0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#81.3	56.8	5.4	7.5	56.0	6.7	14.7	34.2		18.9	24.4	20.7
Internal Link Dist (m)		383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0			115.0		25.0
Base Capacity (vph)	349	672	528	401	737	567	406	540		381	644	627
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.72	0.42	0.09	0.07	0.41	0.11	0.14	0.32		0.20	0.18	0.55

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 75

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay (s/veh): 20.1

Intersection LOS: C

Intersection Capacity Utilization 79.3%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	252	280	50	28	304	60	58	175	77	117	345
v/c Ratio	0.87	0.50	0.11	0.08	0.50	0.13	0.14	0.32	0.20	0.18	0.55
Control Delay (s/veh)	51.1	20.3	3.9	14.2	19.9	4.7	17.6	17.2	18.6	17.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.1	20.3	3.9	14.2	19.9	4.7	17.6	17.2	18.6	17.4	6.0
Queue Length 50th (m)	36.0	33.5	0.0	2.6	33.9	0.0	6.1	17.4	8.4	12.5	0.0
Queue Length 95th (m)	#81.3	56.8	5.4	7.5	56.0	6.7	14.7	34.2	18.9	24.4	20.7
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	349	672	528	401	737	567	406	540	381	644	627
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.42	0.09	0.07	0.41	0.11	0.14	0.32	0.20	0.18	0.55

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FB PM
02/25/2026

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	1	350	0	1	334	0	1	1	0	0	0	1	
Future Volume (vph)	1	350	0	1	334	0	1	1	0	0	0	1	
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt												0.865	
Flt Protected								0.976					
Satd. Flow (prot)	0	1301	0	0	1412	0	0	1419	0	0	1258	0	
Flt Permitted								0.976					
Satd. Flow (perm)	0	1301	0	0	1412	0	0	1419	0	0	1258	0	
Link Speed (k/h)					70					80			
Link Distance (m)					841.1					852.0			
Travel Time (s)					43.3					38.3			
Confl. Peds. (#/hr)	1						1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	14%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Adj. Flow (vph)	1	380	0	1	363	0	1	1	0	0	0	1	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	381	0	0	364	0	0	2	0	0	1	0	
Sign Control	Free			Free			Stop			Stop			
Intersection Summary													
Area Type:	Other												
Control Type:	Unsignalized												
Intersection Capacity Utilization	34.5%				ICU Level of Service A								
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2031 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	350	0	1	334	0	1	1	0	0	0	1
Future Volume (Veh/h)	1	350	0	1	334	0	1	1	0	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	380	0	1	363	0	1	1	0	0	0	1
Pedestrians												1
Lane Width (m)												3.6
Walking Speed (m/s)												1.2
Percent Blockage												0
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	364			380			748	748	380	749	748	364
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	364			380			748	748	380	749	748	364
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1194			1178			327	340	667	327	340	680
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	381	364	2	1								
Volume Left	1	1	1	0								
Volume Right	0	0	0	1								
cSH	1194	1178	334	680								
Volume to Capacity	0.00*	0.00*	0.00*	0.00*								
Queue Length 95th (m)	0.0	0.0	0.1	0.0								
Control Delay (s/veh)	0.0	0.0	15.9	10.3								
Lane LOS	A	A	C	B								
Approach Delay (s/veh)	0.0	0.0	15.9	10.3								
Approach LOS			C	B								
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			34.5%		ICU Level of Service		A					
Analysis Period (min)			15									
* Value less than 0.01.												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	331	16	0	317	0	9	0	3	0	0	2
Future Volume (vph)	0	331	16	0	317	0	9	0	3	0	0	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.969			0.865	
Flt Protected								0.963				
Satd. Flow (prot)	0	1087	1137	0	1170	1325	0	1367	0	0	1270	0
Flt Permitted								0.963				
Satd. Flow (perm)	0	1087	1137	0	1170	1325	0	1367	0	0	1270	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	13%	1%	1%	5%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	0	360	17	0	345	0	10	0	3	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	17	0	345	0	0	13	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 42.5%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	331	16	0	317	0	9	0	3	0	0	2
Future Volume (Veh/h)	0	331	16	0	317	0	9	0	3	0	0	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	360	17	0	345	0	10	0	3	0	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	345			377			707	705	360	708	722	345
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345			377			707	705	360	708	722	345
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	1214			1187			350	361	684	348	353	700
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	360	17	345	0	13	2						
Volume Left	0	0	0	0	10	0						
Volume Right	0	17	0	0	3	2						
cSH	1214	1700	1187	1700	395	700						
Volume to Capacity	0.00	0.01	0.00	0.00	0.03	0.00*						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.8	0.1						
Control Delay (s/veh)	0.0	0.0	0.0	0.0	14.4	10.2						
Lane LOS					B	B						
Approach Delay (s/veh)	0.0			0.0	14.4	10.2						
Approach LOS					B	B						
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			42.5%	ICU Level of Service					A			
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2031 FB PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	141	6	6	103	2	7	4	8	2	10	2
Future Volume (vph)	4	141	6	6	103	2	7	4	8	2	10	2
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.998			0.942			0.982	
Flt Protected		0.999			0.997			0.981			0.993	
Satd. Flow (prot)	0	1458	0	0	1372	0	0	1351	0	0	1428	0
Flt Permitted		0.999			0.997			0.981			0.993	
Satd. Flow (perm)	0	1458	0	0	1372	0	0	1351	0	0	1428	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	8%	2%	1%	1%	2%	2%	1%	2%
Adj. Flow (vph)	4	153	7	7	112	2	8	4	9	2	11	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	0	0	121	0	0	21	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.6%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2031 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	141	6	6	103	2	7	4	8	2	10	2
Future Volume (Veh/h)	4	141	6	6	103	2	7	4	8	2	10	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	153	7	7	112	2	8	4	9	2	11	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	114			160			299	293	157	303	295	113
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	114			160			299	293	157	303	295	113
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	100	98	100
cM capacity (veh/h)	1475			1419			641	615	889	636	613	940
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	164	121	21	15								
Volume Left	4	7	8	2								
Volume Right	7	2	9	2								
cSH	1475	1419	722	646								
Volume to Capacity	0.00*	0.00*	0.03	0.02								
Queue Length 95th (m)	0.1	0.1	0.7	0.6								
Control Delay (s/veh)	0.2	0.5	10.1	10.7								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.2	0.5	10.1	10.7								
Approach LOS			B	B								
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			21.6%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FB PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	153	4	7	110	19	5	20	3	37	25	83
Future Volume (vph)	88	153	4	7	110	19	5	20	3	37	25	83
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.981			0.986			0.923	
Flt Protected		0.982			0.997			0.992			0.987	
Satd. Flow (prot)	0	1429	0	0	1381	0	0	1435	0	0	1331	0
Flt Permitted		0.982			0.997			0.992			0.987	
Satd. Flow (perm)	0	1429	0	0	1381	0	0	1435	0	0	1331	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	1%	6%	1%	1%	1%	2%	0%	2%	2%
Adj. Flow (vph)	96	166	4	8	120	21	5	22	3	40	27	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	266	0	0	149	0	0	30	0	0	157	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.1%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2031 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	153	4	7	110	19	5	20	3	37	25	83
Future Volume (Veh/h)	88	153	4	7	110	19	5	20	3	37	25	83
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	96	166	4	8	120	21	5	22	3	40	27	90
Pedestrians					3							
Lane Width (m)					3.6							
Walking Speed (m/s)					1.2							
Percent Blockage					0							
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	142			170			610	518	171	525	510	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	142			170			610	518	171	525	510	132
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			99			98	95	100	90	94	90
cM capacity (veh/h)	1434			1413			331	429	871	421	433	917
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	266	149	30	157								
Volume Left	96	8	5	40								
Volume Right	4	21	3	90								
cSH	1434	1413	430	614								
Volume to Capacity	0.07	0.00*	0.07	0.26								
Queue Length 95th (m)	1.7	0.1	1.8	8.1								
Control Delay (s/veh)	3.1	0.5	14.0	12.9								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.1	0.5	14.0	12.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Utilization			53.1%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	186	69	49	237	44	116	111	42	22	74	152
Future Volume (vph)	176	186	69	49	237	44	116	111	42	22	74	152
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.959				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1582	1054	1429	1566	1137	1401	1299	0	1387	1582	1044
Flt Permitted	0.600			0.631			0.705			0.651		
Satd. Flow (perm)	813	1582	1054	949	1566	1137	1040	1299	0	951	1582	1044
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			75			60		27				165
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	3%	9%	0%	4%	1%	2%	3%	1%	3%	3%	10%
Adj. Flow (vph)	191	202	75	53	258	48	126	121	46	24	80	165
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	202	75	53	258	48	126	167	0	24	80	165
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effect Green (s)	22.8	22.8	22.8	22.8	22.8	22.8	30.3	30.3		30.3	30.3	30.3
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.44	0.44		0.44	0.44	0.44
v/c Ratio	0.71	0.38	0.19	0.17	0.50	0.11	0.27	0.28		0.06	0.11	0.30
Control Delay (s/veh)	34.6	19.0	5.0	16.4	21.1	3.8	16.7	13.8		14.7	14.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	34.6	19.0	5.0	16.4	21.1	3.8	16.7	13.8		14.7	14.4	4.6
LOS	C	B	A	B	C	A	B	B		B	B	A
Approach Delay (s/veh)		23.1			18.1			15.0			8.4	
Approach LOS		C			B			B			A	
Queue Length 50th (m)	23.5	20.7	0.0	4.9	27.8	0.0	10.0	11.0		1.7	5.9	0.0

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	47.0	36.3	7.8	12.0	47.0	4.8	28.7	31.7		7.6	18.0	13.0
Internal Link Dist (m)		383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0			115.0		25.0
Base Capacity (vph)	419	815	579	489	807	615	459	589		420	699	553
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.46	0.25	0.13	0.11	0.32	0.08	0.27	0.28		0.06	0.11	0.30

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 68.6

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay (s/veh): 17.3

Intersection LOS: B

Intersection Capacity Utilization 69.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

Queues

2031 FB SAT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	191	202	75	53	258	48	126	167	24	80	165
v/c Ratio	0.71	0.38	0.19	0.17	0.50	0.11	0.27	0.28	0.06	0.11	0.30
Control Delay (s/veh)	34.6	19.0	5.0	16.4	21.1	3.8	16.7	13.8	14.7	14.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.6	19.0	5.0	16.4	21.1	3.8	16.7	13.8	14.7	14.4	4.6
Queue Length 50th (m)	23.5	20.7	0.0	4.9	27.8	0.0	10.0	11.0	1.7	5.9	0.0
Queue Length 95th (m)	47.0	36.3	7.8	12.0	47.0	4.8	28.7	31.7	7.6	18.0	13.0
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	419	815	579	489	807	615	459	589	420	699	553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.25	0.13	0.11	0.32	0.08	0.27	0.28	0.06	0.11	0.30
Intersection Summary											

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	287	0	0	299	0	0	0	0	0	0	0
Future Volume (vph)	0	287	0	0	299	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1440	0	0	1454	0	0	1454	0	0	1454	0
Flt Permitted												
Satd. Flow (perm)	0	1440	0	0	1454	0	0	1454	0	0	1454	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	312	0	0	325	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	312	0	0	325	0	0	0	0	0	0	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 23.5%												
ICU Level of Service A												
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2031 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	287	0	0	299	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	287	0	0	299	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	312	0	0	325	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	325			312			637	637	312	637	637	325
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	325			312			637	637	312	637	637	325
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1235			1248			390	395	728	390	395	716
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	312	325	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1235	1248	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s/veh)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s/veh)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			23.5%		ICU Level of Service				A			
Analysis Period (min)			15									

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	278	7	1	288	2	2	1	2	0	1	0
Future Volume (vph)	0	278	7	1	288	2	2	1	2	0	1	0
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.946				
Flt Protected								0.980				
Satd. Flow (prot)	0	1192	1137	0	1204	1126	0	1353	0	0	1454	0
Flt Permitted								0.980				
Satd. Flow (perm)	0	1192	1137	0	1204	1126	0	1353	0	0	1454	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	0	302	8	1	313	2	2	1	2	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	302	8	0	314	2	0	5	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 40.2%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	278	7	1	288	2	2	1	2	0	1	0
Future Volume (Veh/h)	0	278	7	1	288	2	2	1	2	0	1	0
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	302	8	1	313	2	2	1	2	0	1	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	315			310			618	619	302	620	625	313
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	315			310			618	619	302	620	625	313
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1245			1256			402	404	738	399	401	730
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	302	8	314	2	5	1						
Volume Left	0	0	1	0	2	0						
Volume Right	0	8	0	2	2	0						
cSH	1245	1700	1256	1700	492	401						
Volume to Capacity	0.00	0.00*	0.00*	0.00*	0.01	0.00*						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.2	0.1						
Control Delay (s/veh)	0.0	0.0	0.0	0.0	12.4	14.0						
Lane LOS				A	B	B						
Approach Delay (s/veh)	0.0		0.0		12.4	14.0						
Approach LOS					B	B						
Intersection Summary												
Average Delay				0.1								
Intersection Capacity Utilization				40.2%	ICU Level of Service					A		
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2031 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	114	8	6	86	1	3	2	9	4	7	3
Future Volume (vph)	0	114	8	6	86	1	3	2	9	4	7	3
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991			0.999			0.910			0.973	
Fl _t Protected					0.997			0.990			0.987	
Satd. Flow (prot)	0	1455	0	0	1461	0	0	1314	0	0	1404	0
Fl _t Permitted					0.997			0.990			0.987	
Satd. Flow (perm)	0	1455	0	0	1461	0	0	1314	0	0	1404	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	1%	2%	1%	1%	2%	2%	1%	2%
Adj. Flow (vph)	0	124	9	7	93	1	3	2	10	4	8	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	101	0	0	15	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.2%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2031 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	114	8	6	86	1	3	2	9	4	7	3
Future Volume (Veh/h)	0	114	8	6	86	1	3	2	9	4	7	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	124	9	7	93	1	3	2	10	4	8	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	94			133			243	237	129	247	241	94
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	94			133			243	237	129	247	241	94
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	99	99	100
cM capacity (veh/h)	1500			1452			702	663	921	695	659	963
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	133	101	15	15								
Volume Left	0	7	3	4								
Volume Right	9	1	10	3								
cSH	1500	1452	827	714								
Volume to Capacity	0.00	0.00*	0.02	0.02								
Queue Length 95th (m)	0.0	0.1	0.4	0.5								
Control Delay (s/veh)	0.0	0.6	9.4	10.1								
Lane LOS		A	A	B								
Approach Delay (s/veh)	0.0	0.6	9.4	10.1								
Approach LOS			A	B								
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization				22.2%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	112	4	6	96	12	2	25	4	23	23	86
Future Volume (vph)	68	112	4	6	96	12	2	25	4	23	23	86
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.986			0.984			0.912	
Flt Protected		0.982			0.997			0.997			0.991	
Satd. Flow (prot)	0	1438	0	0	1443	0	0	1439	0	0	1316	0
Flt Permitted		0.982			0.997			0.997			0.991	
Satd. Flow (perm)	0	1438	0	0	1443	0	0	1439	0	0	1316	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	1%	1%	1%	1%	1%	2%	1%	2%	2%
Adj. Flow (vph)	74	122	4	7	104	13	2	27	4	25	25	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	124	0	0	33	0	0	143	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	42.6%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2031 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	112	4	6	96	12	2	25	4	23	23	86
Future Volume (Veh/h)	68	112	4	6	96	12	2	25	4	23	23	86
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	122	4	7	104	13	2	27	4	25	25	93
Pedestrians	3											
Lane Width (m)	3.6											
Walking Speed (m/s)	1.2											
Percent Blockage	0											
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	117			126			502	403	127	417	399	111
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	117			126			502	403	127	417	399	111
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	95	100	95	95	90
cM capacity (veh/h)	1478			1467			400	508	921	501	510	943
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	200	124	33	143								
Volume Left	74	7	2	25								
Volume Right	4	13	4	93								
cSH	1478	1467	528	724								
Volume to Capacity	0.05	0.00*	0.06	0.20								
Queue Length 95th (m)	1.3	0.1	1.6	5.9								
Control Delay (s/veh)	3.1	0.5	12.3	11.2								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.1	0.5	12.3	11.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay				5.3								
Intersection Capacity Utilization				42.6%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

APPENDIX H

2036 Future Background Detailed Capacity Analysis

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	178	100	65	263	88	69	113	38	29	94	180
Future Volume (vph)	165	178	100	65	263	88	69	113	38	29	94	180
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					1.00						
Fr't			0.850			0.850		0.962				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1083	1401	1369	1073	1415	1275	0	1335	1597	957
Flt Permitted	0.566			0.636			0.691			0.653		
Satd. Flow (perm)	765	1429	1083	938	1369	1069	1029	1275	0	918	1597	957
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			96		24				196
Link Speed (k/h)		70			70			50				60
Link Distance (m)		407.5			841.1			1044.5				158.6
Travel Time (s)		21.0			43.3			75.2				9.5
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	179	193	109	71	286	96	75	123	41	32	102	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	193	109	71	286	96	75	164	0	32	102	196
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effect Green (s)	22.7	22.7	22.7	22.7	22.7	22.7	30.4	30.4		30.4	30.4	30.4
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.44	0.44		0.44	0.44	0.44
v/c Ratio	0.71	0.41	0.25	0.23	0.63	0.23	0.16	0.28		0.08	0.14	0.37
Control Delay (s/veh)	35.6	19.8	4.9	17.5	25.6	4.9	15.4	14.0		14.8	14.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	35.6	19.8	4.9	17.5	25.6	4.9	15.4	14.0		14.8	14.5	5.0
LOS	D	B	A	B	C	A	B	B		B	B	A
Approach Delay (s/veh)		22.3			19.9			14.4			8.9	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B			B			A		

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 68.5

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay (s/veh): 17.4

Intersection LOS: B

Intersection Capacity Utilization 74.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

Queues

2036 FB AM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	179	193	109	71	286	96	75	164	32	102	196
v/c Ratio	0.71	0.41	0.25	0.23	0.63	0.23	0.16	0.28	0.08	0.14	0.37
Control Delay (s/veh)	35.6	19.8	4.9	17.5	25.6	4.9	15.4	14.0	14.8	14.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.6	19.8	4.9	17.5	25.6	4.9	15.4	14.0	14.8	14.5	5.0
Queue Length 50th (m)	22.0	21.4	0.0	6.8	35.8	0.0	5.5	11.2	2.4	7.5	0.0
Queue Length 95th (m)	44.8	38.3	9.3	15.6	61.1	8.8	17.8	32.5	9.7	21.8	15.6
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	395	738	612	484	707	599	455	578	406	707	533
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.26	0.18	0.15	0.40	0.16	0.16	0.28	0.08	0.14	0.37
Intersection Summary											

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2036 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	242	0	0	391	0	0	0	0	0	0	2
Future Volume (vph)	1	242	0	0	391	0	0	0	0	0	0	2
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865											
Flt Protected												
Satd. Flow (prot)	0	1226	0	0	1177	0	0	1454	0	0	1258	0
Flt Permitted												
Satd. Flow (perm)	0	1226	0	0	1177	0	0	1454	0	0	1258	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	263	0	0	425	0	0	0	0	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	264	0	0	425	0	0	0	0	0	2	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	36.4%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2036 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	242	0	0	391	0	0	0	0	0	0	2
Future Volume (Veh/h)	1	242	0	0	391	0	0	0	0	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	263	0	0	425	0	0	0	0	0	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	425			263			692	690	263	690	690	425
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	425			263			692	690	263	690	690	425
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1134			1301			357	368	776	359	368	629
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	264	425	0	2								
Volume Left	1	0	0	0								
Volume Right	0	0	0	2								
cSH	1134	1301	1700	629								
Volume to Capacity	0.00*	0.00	0.00	0.00*								
Queue Length 95th (m)	0.0	0.0	0.0	0.1								
Control Delay (s/veh)	0.0	0.0	0.0	10.7								
Lane LOS	A		A	B								
Approach Delay (s/veh)	0.0	0.0	0.0	10.7								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			36.4%	ICU Level of Service					A			
Analysis Period (min)			15									
* Value less than 0.01.												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	232	7	2	368	0	12	0	2	0	2	2
Future Volume (vph)	1	232	7	2	368	0	12	0	2	0	2	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.982			0.932	
Flt Protected								0.958				
Satd. Flow (prot)	0	1024	1137	0	991	1325	0	1380	0	0	1362	0
Flt Permitted								0.958				
Satd. Flow (perm)	0	1024	1137	0	991	1325	0	1380	0	0	1362	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	1	252	8	2	400	0	13	0	2	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	253	8	0	402	0	0	15	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 46.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2036 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	232	7	2	368	0	12	0	2	0	2	2
Future Volume (Veh/h)	1	232	7	2	368	0	12	0	2	0	2	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	252	8	2	400	0	13	0	2	0	2	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	400			260			661	658	252	660	666	400
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	400			260			661	658	252	660	666	400
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	100	100	100	99	100
cM capacity (veh/h)	1159			1310			374	383	787	375	379	652
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	253	8	402	0	15	4						
Volume Left	1	0	2	0	13	0						
Volume Right	0	8	0	0	2	2						
cSH	1159	1700	1310	1700	402	480						
Volume to Capacity	0.00*	0.00*	0.00*	0.00	0.04	0.00*						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.9	0.2						
Control Delay (s/veh)	0.0	0.0	0.1	0.0	14.3	12.6						
Lane LOS	A		A		B	B						
Approach Delay (s/veh)	0.0		0.1		14.3	12.6						
Approach LOS					B	B						
Intersection Summary												
Average Delay	0.4											
Intersection Capacity Utilization	46.8%			ICU Level of Service			A					
Analysis Period (min)	15											

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2036 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	91	6	7	86	2	5	5	4	2	4	1
Future Volume (vph)	1	91	6	7	86	2	5	5	4	2	4	1
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991			0.997			0.961			0.981	
Fl _t Protected					0.996			0.982			0.986	
Satd. Flow (prot)	0	1404	0	0	1360	0	0	1377	0	0	1414	0
Fl _t Permitted					0.996			0.982			0.986	
Satd. Flow (perm)	0	1404	0	0	1360	0	0	1377	0	0	1414	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	1	99	7	8	93	2	5	5	4	2	4	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	103	0	0	14	0	0	7	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2036 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	91	6	7	86	2	5	5	4	2	4	1
Future Volume (Veh/h)	1	91	6	7	86	2	5	5	4	2	4	1
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	99	7	8	93	2	5	5	4	2	4	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	95			106			218	216	103	221	218	94
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95			106			218	216	103	221	218	94
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	99	100	100	99	100
cM capacity (veh/h)	1499			1485			731	680	953	724	678	963
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	107	103	14	7								
Volume Left	1	8	5	2								
Volume Right	7	2	4	1								
cSH	1499	1485	761	722								
Volume to Capacity	0.00*	0.00*	0.02	0.00*								
Queue Length 95th (m)	0.0	0.1	0.4	0.2								
Control Delay (s/veh)	0.1	0.6	9.8	10.0								
Lane LOS	A	A	A	B								
Approach Delay (s/veh)	0.1	0.6	9.8	10.0								
Approach LOS			A	B								
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			21.7%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2036 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	109	6	3	114	44	3	25	9	34	18	67
Future Volume (vph)	75	109	6	3	114	44	3	25	9	34	18	67
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.963			0.966			0.924	
Flt Protected		0.981			0.999			0.996			0.986	
Satd. Flow (prot)	0	1356	0	0	1277	0	0	1409	0	0	1332	0
Flt Permitted		0.981			0.999			0.996			0.986	
Satd. Flow (perm)	0	1356	0	0	1277	0	0	1409	0	0	1332	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	82	118	7	3	124	48	3	27	10	37	20	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	175	0	0	40	0	0	130	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.1%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 6: Elizabeth Street & Killaly St. E

2036 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	109	6	3	114	44	3	25	9	34	18	67
Future Volume (Veh/h)	75	109	6	3	114	44	3	25	9	34	18	67
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	118	7	3	124	48	3	27	10	37	20	73
Pedestrians					1							
Lane Width (m)					3.6							
Walking Speed (m/s)					1.2							
Percent Blockage					0							
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	173			125			523	465	123	465	444	149
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173			125			523	465	123	465	444	149
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			99	94	99	92	96	92
cM capacity (veh/h)	1391			1462			395	466	928	457	477	900
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	207	175	40	130								
Volume Left	82	3	3	37								
Volume Right	7	48	10	73								
cSH	1391	1462	524	637								
Volume to Capacity	0.06	0.00*	0.08	0.20								
Queue Length 95th (m)	1.5	0.0	2.0	6.1								
Control Delay (s/veh)	3.4	0.1	12.4	12.1								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.4	0.1	12.4	12.1								
Approach LOS			B	B								
Intersection Summary												
Average Delay			5.1									
Intersection Capacity Utilization			50.1%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	291	52	29	316	63	53	124	37	78	118	345
Future Volume (vph)	262	291	52	29	316	63	53	124	37	78	118	345
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1054	1401	1566	1137	1401	1308	0	1387	1597	1044
Flt Permitted	0.510			0.540			0.675			0.647		
Satd. Flow (perm)	691	1429	1054	796	1566	1137	995	1308	0	945	1597	1044
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			60			68		21				375
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	9%	2%	4%	1%	2%	3%	1%	3%	2%	10%
Adj. Flow (vph)	285	316	57	32	343	68	58	135	40	85	128	375
Shared Lane Traffic (%)												
Lane Group Flow (vph)	285	316	57	32	343	68	58	175	0	85	128	375
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	34.2	34.2	34.2	34.2	34.2	34.2	30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43	0.38	0.38		0.38	0.38	0.38
v/c Ratio	0.96	0.52	0.12	0.09	0.51	0.13	0.15	0.35		0.24	0.21	0.60
Control Delay (s/veh)	68.8	20.2	4.4	14.3	19.8	4.4	18.2	18.2		19.6	18.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	68.8	20.2	4.4	14.3	19.8	4.4	18.2	18.2		19.6	18.3	6.7
LOS	E	C	A	B	B	A	B	B		B	B	A
Approach Delay (s/veh)		39.9			17.0			18.2			11.1	
Approach LOS		D			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 79.5

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.96

Intersection Signal Delay (s/veh): 23.2

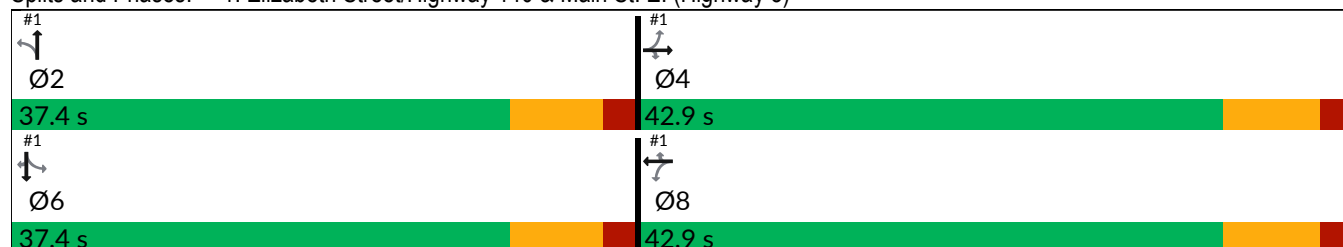
Intersection LOS: C

Intersection Capacity Utilization 83.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)



											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	285	316	57	32	343	68	58	175	85	128	375
v/c Ratio	0.96	0.52	0.12	0.09	0.51	0.13	0.15	0.35	0.24	0.21	0.60
Control Delay (s/veh)	68.8	20.2	4.4	14.3	19.8	4.4	18.2	18.2	19.6	18.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.8	20.2	4.4	14.3	19.8	4.4	18.2	18.2	19.6	18.3	6.7
Queue Length 50th (m)	45.7	39.0	0.0	3.0	39.5	0.0	6.2	17.6	9.4	13.9	0.0
Queue Length 95th (m)	#100.1	65.4	6.6	8.4	64.5	7.1	14.7	34.2	20.6	26.6	22.2
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	304	629	498	350	689	538	375	506	357	602	627
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.50	0.11	0.09	0.50	0.13	0.15	0.35	0.24	0.21	0.60

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2036 FB PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	396	0	1	378	0	1	1	0	0	0	1
Future Volume (vph)	1	396	0	1	378	0	1	1	0	0	0	1
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												0.865
Flt Protected								0.976				
Satd. Flow (prot)	0	1301	0	0	1412	0	0	1419	0	0	1258	0
Flt Permitted								0.976				
Satd. Flow (perm)	0	1301	0	0	1412	0	0	1419	0	0	1258	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Confl. Peds. (#/hr)	1						1					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	14%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	430	0	1	411	0	1	1	0	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	431	0	0	412	0	0	2	0	0	1	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	37.6%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2036 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	396	0	1	378	0	1	1	0	0	0	1
Future Volume (Veh/h)	1	396	0	1	378	0	1	1	0	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	430	0	1	411	0	1	1	0	0	0	1
Pedestrians												1
Lane Width (m)												3.6
Walking Speed (m/s)												1.2
Percent Blockage												0
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	412			430			846	846	430	847	846	412
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	412			430			846	846	430	847	846	412
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1146			1129			281	298	625	280	298	639
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	431	412	2	1								
Volume Left	1	1	1	0								
Volume Right	0	0	0	1								
cSH	1146	1129	290	639								
Volume to Capacity	0.00*	0.00*	0.00*	0.00*								
Queue Length 95th (m)	0.0	0.0	0.2	0.0								
Control Delay (s/veh)	0.0	0.0	17.5	10.6								
Lane LOS	A	A	C	B								
Approach Delay (s/veh)	0.0	0.0	17.5	10.6								
Approach LOS			C	B								
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			37.6%		ICU Level of Service		A					
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	374	16	0	359	0	9	0	3	0	0	2
Future Volume (vph)	0	374	16	0	359	0	9	0	3	0	0	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.969			0.865	
Flt Protected								0.963				
Satd. Flow (prot)	0	1087	1137	0	1170	1325	0	1367	0	0	1270	0
Flt Permitted								0.963				
Satd. Flow (perm)	0	1087	1137	0	1170	1325	0	1367	0	0	1270	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	13%	1%	1%	5%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	0	407	17	0	390	0	10	0	3	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	407	17	0	390	0	0	13	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 45.9% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2036 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	374	16	0	359	0	9	0	3	0	0	2
Future Volume (Veh/h)	0	374	16	0	359	0	9	0	3	0	0	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	407	17	0	390	0	10	0	3	0	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	390			424			799	797	407	800	814	390
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390			424			799	797	407	800	814	390
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	1169			1141			304	319	644	302	312	661
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	407	17	390	0	13	2						
Volume Left	0	0	0	0	10	0						
Volume Right	0	17	0	0	3	2						
cSH	1169	1700	1141	1700	346	661						
Volume to Capacity	0.00	0.01	0.00	0.00	0.04	0.00*						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.9	0.1						
Control Delay (s/veh)	0.0	0.0	0.0	0.0	15.8	10.5						
Lane LOS					C	B						
Approach Delay (s/veh)	0.0		0.0		15.8	10.5						
Approach LOS					C	B						
Intersection Summary												
Average Delay	0.3											
Intersection Capacity Utilization	45.9%			ICU Level of Service					A			
Analysis Period (min)	15											

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2036 FB PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	141	6	6	103	2	7	4	8	2	10	2
Future Volume (vph)	4	141	6	6	103	2	7	4	8	2	10	2
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.994			0.998			0.942			0.982	
Fl _t Protected		0.999			0.997			0.981			0.993	
Satd. Flow (prot)	0	1458	0	0	1372	0	0	1351	0	0	1428	0
Fl _t Permitted		0.999			0.997			0.981			0.993	
Satd. Flow (perm)	0	1458	0	0	1372	0	0	1351	0	0	1428	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	8%	2%	1%	1%	2%	2%	1%	2%
Adj. Flow (vph)	4	153	7	7	112	2	8	4	9	2	11	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	0	0	121	0	0	21	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.6%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2036 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	141	6	6	103	2	7	4	8	2	10	2
Future Volume (Veh/h)	4	141	6	6	103	2	7	4	8	2	10	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	153	7	7	112	2	8	4	9	2	11	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	114			160			299	293	157	303	295	113
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	114			160			299	293	157	303	295	113
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	100	98	100
cM capacity (veh/h)	1475			1419			641	615	889	636	613	940
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	164	121	21	15								
Volume Left	4	7	8	2								
Volume Right	7	2	9	2								
cSH	1475	1419	722	646								
Volume to Capacity	0.00*	0.00*	0.03	0.02								
Queue Length 95th (m)	0.1	0.1	0.7	0.6								
Control Delay (s/veh)	0.2	0.5	10.1	10.7								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.2	0.5	10.1	10.7								
Approach LOS			B	B								
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			21.6%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2036 FB PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	153	4	7	110	19	5	20	3	37	25	83
Future Volume (vph)	88	153	4	7	110	19	5	20	3	37	25	83
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.981			0.986			0.923	
Flt Protected		0.982			0.997			0.992			0.987	
Satd. Flow (prot)	0	1429	0	0	1381	0	0	1435	0	0	1331	0
Flt Permitted		0.982			0.997			0.992			0.987	
Satd. Flow (perm)	0	1429	0	0	1381	0	0	1435	0	0	1331	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	1%	6%	1%	1%	1%	2%	0%	2%	2%
Adj. Flow (vph)	96	166	4	8	120	21	5	22	3	40	27	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	266	0	0	149	0	0	30	0	0	157	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.1%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2036 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	153	4	7	110	19	5	20	3	37	25	83
Future Volume (Veh/h)	88	153	4	7	110	19	5	20	3	37	25	83
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	96	166	4	8	120	21	5	22	3	40	27	90
Pedestrians					3				1			
Lane Width (m)					3.6				3.6			
Walking Speed (m/s)					1.2				1.2			
Percent Blockage					0				0			
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	142			170			610	518	171	525	510	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	142			170			610	518	171	525	510	132
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			99			98	95	100	90	94	90
cM capacity (veh/h)	1434			1413			331	429	871	421	433	917
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	266	149	30	157								
Volume Left	96	8	5	40								
Volume Right	4	21	3	90								
cSH	1434	1413	430	614								
Volume to Capacity	0.07	0.00*	0.07	0.26								
Queue Length 95th (m)	1.7	0.1	1.8	8.1								
Control Delay (s/veh)	3.1	0.5	14.0	12.9								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.1	0.5	14.0	12.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Utilization			53.1%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	210	78	56	268	50	116	111	42	24	80	165
Future Volume (vph)	199	210	78	56	268	50	116	111	42	24	80	165
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.959				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1699	1365	1662	1683	1473	1630	1638	0	1614	1699	1352
Flt Permitted	0.560			0.616			0.701			0.651		
Satd. Flow (perm)	883	1699	1365	1078	1683	1473	1203	1638	0	1106	1699	1352
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			60		27				179
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	3%	9%	0%	4%	1%	2%	3%	1%	3%	3%	10%
Adj. Flow (vph)	216	228	85	61	291	54	126	121	46	26	87	179
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	228	85	61	291	54	126	167	0	26	87	179
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	23.4	23.4	23.4	23.4	23.4	23.4	30.3	30.3		30.3	30.3	30.3
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.34	0.44	0.44		0.44	0.44	0.44
v/c Ratio	0.72	0.40	0.16	0.17	0.51	0.10	0.24	0.23		0.05	0.12	0.26
Control Delay (s/veh)	34.4	19.0	4.4	16.2	21.1	4.2	16.1	13.0		14.7	14.5	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	34.4	19.0	4.4	16.2	21.1	4.2	16.1	13.0		14.7	14.5	4.0
LOS	C	B	A	B	C	A	B	B		B	B	A
Approach Delay (s/veh)		22.9			18.1			14.3			8.1	
Approach LOS		C			B			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 69.2

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.72

Intersection Signal Delay (s/veh): 17.1

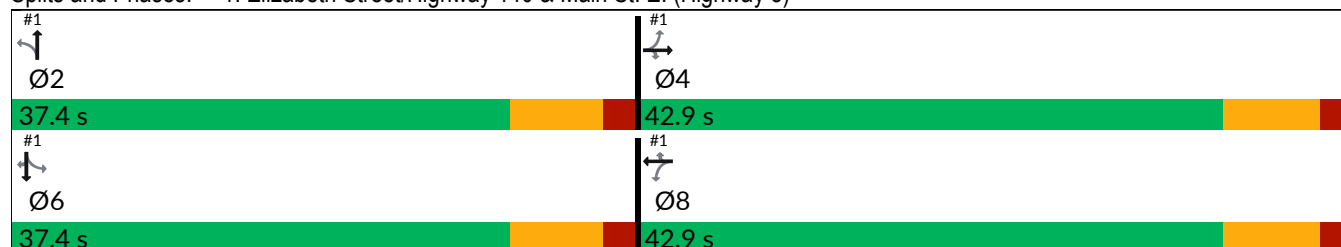
Intersection LOS: B

Intersection Capacity Utilization 68.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)



Queues

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

2036 FB SAT

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	216	228	85	61	291	54	126	167	26	87	179
v/c Ratio	0.72	0.40	0.16	0.17	0.51	0.10	0.24	0.23	0.05	0.12	0.26
Control Delay (s/veh)	34.4	19.0	4.4	16.2	21.1	4.2	16.1	13.0	14.7	14.5	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.4	19.0	4.4	16.2	21.1	4.2	16.1	13.0	14.7	14.5	4.0
Queue Length 50th (m)	27.0	23.5	0.0	5.7	31.6	0.0	10.3	11.3	2.0	6.8	0.0
Queue Length 95th (m)	52.1	40.0	8.2	13.2	52.1	5.7	27.6	30.0	8.0	19.1	13.2
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	451	869	739	551	860	782	527	733	485	745	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.26	0.12	0.11	0.34	0.07	0.24	0.23	0.05	0.12	0.26
Intersection Summary											

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2036 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	324	0	0	338	0	0	0	0	0	0	0
Future Volume (vph)	0	324	0	0	338	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1699	0	0	1716	0	0	1716	0	0	1716	0
Flt Permitted												
Satd. Flow (perm)	0	1699	0	0	1716	0	0	1716	0	0	1716	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	352	0	0	367	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	352	0	0	367	0	0	0	0	0	0	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 22.6%												
ICU Level of Service A												
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2036 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	324	0	0	338	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	324	0	0	338	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	352	0	0	367	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	367			352			719	719	352	719	719	367
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	367			352			719	719	352	719	719	367
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1192			1207			344	354	692	344	354	678
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	352	367	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1192	1207	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s/veh)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s/veh)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			22.6%		ICU Level of Service				A			
Analysis Period (min)			15									

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	315	7	1	326	2	2	1	2	0	1	0
Future Volume (vph)	0	315	7	1	326	2	2	1	2	0	1	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.946				
Flt Protected								0.980				
Satd. Flow (prot)	0	1699	1473	0	1716	1458	0	1597	0	0	1716	0
Flt Permitted								0.980				
Satd. Flow (perm)	0	1699	1473	0	1716	1458	0	1597	0	0	1716	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	0	342	8	1	354	2	2	1	2	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	8	0	355	2	0	5	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 35.4% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	0	315	7	1	326	2	2	1	2	0	1	0						
Future Volume (Veh/h)	0	315	7	1	326	2	2	1	2	0	1	0						
Sign Control	Free			Free			Stop			Stop								
Grade	0%			0%			0%			0%								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						
Hourly flow rate (vph)	0	342	8	1	354	2	2	1	2	0	1	0						
Pedestrians																		
Lane Width (m)																		
Walking Speed (m/s)																		
Percent Blockage																		
Right turn flare (veh)																		
Median type	None			None														
Median storage veh																		
Upstream signal (m)																		
pX, platoon unblocked																		
vC, conflicting volume	356			350			699	700	342	701	706	354						
vC1, stage 1 conf vol																		
vC2, stage 2 conf vol																		
vCu, unblocked vol	356			350			699	700	342	701	706	354						
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2						
tC, 2 stage (s)																		
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3						
p0 queue free %	100			100			99	100	100	100	100	100						
cM capacity (veh/h)	1203			1214			355	363	701	352	360	692						
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1												
Volume Total	342	8	355	2	5	1												
Volume Left	0	0	1	0	2	0												
Volume Right	0	8	0	2	2	0												
cSH	1203	1700	1214	1700	445	360												
Volume to Capacity	0.00	0.00*	0.00*	0.00*	0.01	0.00*												
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.3	0.1												
Control Delay (s/veh)	0.0	0.0	0.0	0.0	13.2	15.0												
Lane LOS			A		B		C											
Approach Delay (s/veh)	0.0		0.0		13.2	15.0												
Approach LOS					B		C											
Intersection Summary																		
Average Delay			0.1															
Intersection Capacity Utilization			35.4%		ICU Level of Service				A									
Analysis Period (min)			15															

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2036 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	114	8	6	86	1	3	2	9	4	7	3
Future Volume (vph)	0	114	8	6	86	1	3	2	9	4	7	3
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991			0.999			0.910			0.973	
Fl _t Protected					0.997			0.990			0.987	
Satd. Flow (prot)	0	1717	0	0	1724	0	0	1551	0	0	1656	0
Fl _t Permitted					0.997			0.990			0.987	
Satd. Flow (perm)	0	1717	0	0	1724	0	0	1551	0	0	1656	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	1%	2%	1%	1%	2%	2%	1%	2%
Adj. Flow (vph)	0	124	9	7	93	1	3	2	10	4	8	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	101	0	0	15	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2036 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	114	8	6	86	1	3	2	9	4	7	3
Future Volume (Veh/h)	0	114	8	6	86	1	3	2	9	4	7	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	124	9	7	93	1	3	2	10	4	8	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	94			133			243	237	129	247	241	94
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	94			133			243	237	129	247	241	94
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	99	99	100
cM capacity (veh/h)	1500			1452			702	663	921	695	659	963
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	133	101	15	15								
Volume Left	0	7	3	4								
Volume Right	9	1	10	3								
cSH	1500	1452	827	714								
Volume to Capacity	0.00	0.00*	0.02	0.02								
Queue Length 95th (m)	0.0	0.1	0.4	0.5								
Control Delay (s/veh)	0.0	0.6	9.4	10.1								
Lane LOS		A	A	B								
Approach Delay (s/veh)	0.0	0.6	9.4	10.1								
Approach LOS			A	B								
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization				20.3%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2036 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	112	4	6	96	12	2	25	4	23	23	86
Future Volume (vph)	68	112	4	6	96	12	2	25	4	23	23	86
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.986			0.984			0.912	
Flt Protected		0.982			0.997			0.997			0.991	
Satd. Flow (prot)	0	1697	0	0	1703	0	0	1698	0	0	1553	0
Flt Permitted		0.982			0.997			0.997			0.991	
Satd. Flow (perm)	0	1697	0	0	1703	0	0	1698	0	0	1553	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	1%	1%	1%	1%	1%	2%	1%	2%	2%
Adj. Flow (vph)	74	122	4	7	104	13	2	27	4	25	25	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	124	0	0	33	0	0	143	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	39.2%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 6: Elizabeth Street & Killaly St. E

2036 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	112	4	6	96	12	2	25	4	23	23	86
Future Volume (Veh/h)	68	112	4	6	96	12	2	25	4	23	23	86
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	122	4	7	104	13	2	27	4	25	25	93
Pedestrians	3											
Lane Width (m)	3.6											
Walking Speed (m/s)	1.2											
Percent Blockage	0											
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	117			126			502	403	127	417	399	111
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	117			126			502	403	127	417	399	111
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	95	100	95	95	90
cM capacity (veh/h)	1478			1467			400	508	921	501	510	943
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	200	124	33	143								
Volume Left	74	7	2	25								
Volume Right	4	13	4	93								
cSH	1478	1467	528	724								
Volume to Capacity	0.05	0.00*	0.06	0.20								
Queue Length 95th (m)	1.3	0.1	1.6	5.9								
Control Delay (s/veh)	3.1	0.5	12.3	11.2								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.1	0.5	12.3	11.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay			5.3									
Intersection Capacity Utilization			39.2%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

APPENDIX I

2041 Future Background Detailed Capacity Analysis

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	216	113	74	295	94	69	113	38	46	102	196
Future Volume (vph)	171	216	113	74	295	94	69	113	38	46	102	196
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					1.00						
Fr _t			0.850			0.850		0.962				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1083	1401	1369	1073	1415	1275	0	1335	1597	957
Flt Permitted	0.519			0.612			0.685			0.653		
Satd. Flow (perm)	702	1429	1083	902	1369	1069	1020	1275	0	918	1597	957
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			123			102		24				213
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	186	235	123	80	321	102	75	123	41	50	111	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	235	123	80	321	102	75	164	0	50	111	213
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effect Green (s)	24.4	24.4	24.4	24.4	24.4	24.4	30.4	30.4		30.4	30.4	30.4
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.35	0.43	0.43		0.43	0.43	0.43
v/c Ratio	0.77	0.47	0.27	0.26	0.68	0.23	0.17	0.29		0.13	0.16	0.40
Control Delay (s/veh)	41.0	20.6	4.6	17.7	26.7	4.7	16.3	14.8		16.0	15.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	41.0	20.6	4.6	17.7	26.7	4.7	16.3	14.8		16.0	15.4	5.3
LOS	D	C	A	B	C	A	B	B		B	B	A
Approach Delay (s/veh)		24.0			20.8			15.3			9.7	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			C			B			A		

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 70.2

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 18.6

Intersection LOS: B

Intersection Capacity Utilization 76.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

Queues

2041 FB AM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	186	235	123	80	321	102	75	164	50	111	213
v/c Ratio	0.77	0.47	0.27	0.26	0.68	0.23	0.17	0.29	0.13	0.16	0.40
Control Delay (s/veh)	41.0	20.6	4.6	17.7	26.7	4.7	16.3	14.8	16.0	15.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.0	20.6	4.6	17.7	26.7	4.7	16.3	14.8	16.0	15.4	5.3
Queue Length 50th (m)	23.9	27.0	0.0	7.8	41.6	0.0	6.1	12.4	4.2	9.1	0.0
Queue Length 95th (m)	50.0	46.9	9.8	17.4	70.0	9.0	17.9	32.5	13.6	23.4	16.6
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	354	720	607	455	690	589	441	565	396	690	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.33	0.20	0.18	0.47	0.17	0.17	0.29	0.13	0.16	0.40
Intersection Summary											

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2041 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	301	0	0	436	0	0	0	0	0	0	2
Future Volume (vph)	1	301	0	0	436	0	0	0	0	0	0	2
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865											
Flt Protected												
Satd. Flow (prot)	0	1226	0	0	1177	0	0	1454	0	0	1258	0
Flt Permitted												
Satd. Flow (perm)	0	1226	0	0	1177	0	0	1454	0	0	1258	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	327	0	0	474	0	0	0	0	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	328	0	0	474	0	0	0	0	0	2	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	39.4%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2041 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	301	0	0	436	0	0	0	0	0	0	2
Future Volume (Veh/h)	1	301	0	0	436	0	0	0	0	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	327	0	0	474	0	0	0	0	0	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	474			327			805	803	327	803	803	474
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	474			327			805	803	327	803	803	474
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1088			1233			300	317	714	301	317	590
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	328	474	0	2								
Volume Left	1	0	0	0								
Volume Right	0	0	0	2								
cSH	1088	1233	1700	590								
Volume to Capacity	0.00*	0.00	0.00	0.00*								
Queue Length 95th (m)	0.0	0.0	0.0	0.1								
Control Delay (s/veh)	0.0	0.0	0.0	11.1								
Lane LOS	A		A	B								
Approach Delay (s/veh)	0.0	0.0	0.0	11.1								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			39.4%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	291	7	2	409	0	12	0	2	0	2	2
Future Volume (vph)	1	291	7	2	409	0	12	0	2	0	2	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.982			0.932	
Flt Protected								0.958				
Satd. Flow (prot)	0	1024	1137	0	991	1325	0	1380	0	0	1362	0
Flt Permitted								0.958				
Satd. Flow (perm)	0	1024	1137	0	991	1325	0	1380	0	0	1362	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	1	316	8	2	445	0	13	0	2	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	317	8	0	447	0	0	15	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 50.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	291	7	2	409	0	12	0	2	0	2	2
Future Volume (Veh/h)	1	291	7	2	409	0	12	0	2	0	2	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	316	8	2	445	0	13	0	2	0	2	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	445			324			770	767	316	769	775	445
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	445			324			770	767	316	769	775	445
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	100	100	100	99	100
cM capacity (veh/h)	1115			1241			316	332	724	317	328	615
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	317	8	447	0	15	4						
Volume Left	1	0	2	0	13	0						
Volume Right	0	8	0	0	2	2						
cSH	1115	1700	1241	1700	341	428						
Volume to Capacity	0.00*	0.00*	0.00*	0.00	0.04	0.00*						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.1	0.2						
Control Delay (s/veh)	0.0	0.0	0.1	0.0	16.0	13.5						
Lane LOS	A		A		C	B						
Approach Delay (s/veh)	0.0		0.1		16.0	13.5						
Approach LOS					C	B						
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			50.1%		ICU Level of Service		A					
Analysis Period (min)			15									
* Value less than 0.01.												

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2041 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	91	6	7	86	2	5	5	4	2	4	1
Future Volume (vph)	1	91	6	7	86	2	5	5	4	2	4	1
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.991			0.997			0.961			0.981		
Flt Protected				0.996			0.982			0.986		
Satd. Flow (prot)	0	1404	0	0	1360	0	0	1377	0	0	1414	0
Flt Permitted				0.996			0.982			0.986		
Satd. Flow (perm)	0	1404	0	0	1360	0	0	1377	0	0	1414	0
Link Speed (k/h)	60			60			50			60		
Link Distance (m)	840.4			560.6			68.7			892.0		
Travel Time (s)	50.4			33.6			4.9			53.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	1	99	7	8	93	2	5	5	4	2	4	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	103	0	0	14	0	0	7	0
Sign Control	Free			Free			Stop			Stop		

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2041 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	91	6	7	86	2	5	5	4	2	4	1
Future Volume (Veh/h)	1	91	6	7	86	2	5	5	4	2	4	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	99	7	8	93	2	5	5	4	2	4	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	95			106			218	216	103	221	218	94
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95			106			218	216	103	221	218	94
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	99	100	100	99	100
cM capacity (veh/h)	1499			1485			731	680	953	724	678	963
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	107	103	14	7								
Volume Left	1	8	5	2								
Volume Right	7	2	4	1								
cSH	1499	1485	761	722								
Volume to Capacity	0.00*	0.00*	0.02	0.00*								
Queue Length 95th (m)	0.0	0.1	0.4	0.2								
Control Delay (s/veh)	0.1	0.6	9.8	10.0								
Lane LOS	A	A	A	B								
Approach Delay (s/veh)	0.1	0.6	9.8	10.0								
Approach LOS			A	B								
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			21.7%	ICU Level of Service						A		
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2041 FB AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	109	6	3	114	44	3	25	9	34	18	67
Future Volume (vph)	75	109	6	3	114	44	3	25	9	34	18	67
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.963			0.966			0.924	
Flt Protected		0.981			0.999			0.996			0.986	
Satd. Flow (prot)	0	1356	0	0	1277	0	0	1409	0	0	1332	0
Flt Permitted		0.981			0.999			0.996			0.986	
Satd. Flow (perm)	0	1356	0	0	1277	0	0	1409	0	0	1332	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	82	118	7	3	124	48	3	27	10	37	20	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	175	0	0	40	0	0	130	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.1%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2041 FB AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	109	6	3	114	44	3	25	9	34	18	67
Future Volume (Veh/h)	75	109	6	3	114	44	3	25	9	34	18	67
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	118	7	3	124	48	3	27	10	37	20	73
Pedestrians					1							
Lane Width (m)					3.6							
Walking Speed (m/s)					1.2							
Percent Blockage					0							
Right turn flare (veh)												
Median type	None						None					
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	173			125			523	465	123	465	444	149
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173			125			523	465	123	465	444	149
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			99	94	99	92	96	92
cM capacity (veh/h)	1391			1462			395	466	928	457	477	900
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	207	175	40	130								
Volume Left	82	3	3	37								
Volume Right	7	48	10	73								
cSH	1391	1462	524	637								
Volume to Capacity	0.06	0.00*	0.08	0.20								
Queue Length 95th (m)	1.5	0.0	2.0	6.1								
Control Delay (s/veh)	3.4	0.1	12.4	12.1								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.4	0.1	12.4	12.1								
Approach LOS			B	B								
Intersection Summary												
Average Delay			5.1									
Intersection Capacity Utilization			50.1%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	330	58	33	358	71	53	124	37	84	128	376
Future Volume (vph)	297	330	58	33	358	71	53	124	37	84	128	376
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1054	1401	1566	1137	1401	1308	0	1387	1597	1044
Flt Permitted	0.462			0.494			0.668			0.647		
Satd. Flow (perm)	626	1429	1054	728	1566	1137	985	1308	0	945	1597	1044
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			63			75		21				343
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	9%	2%	4%	1%	2%	3%	1%	3%	2%	10%
Adj. Flow (vph)	323	359	63	36	389	77	58	135	40	91	139	409
Shared Lane Traffic (%)												
Lane Group Flow (vph)	323	359	63	36	389	77	58	175	0	91	139	409
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	35.0	35.0	35.0	35.0	35.0	35.0	30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.37	0.37		0.37	0.37	0.37
v/c Ratio	1.19	0.58	0.13	0.11	0.57	0.14	0.16	0.35		0.26	0.23	0.68
Control Delay (s/veh)	140.8	21.7	4.6	14.7	21.1	4.5	18.3	18.3		20.0	18.6	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	140.8	21.7	4.6	14.7	21.1	4.5	18.3	18.3		20.0	18.6	10.7
LOS	F	C	A	B	C	A	B	B		B	B	B
Approach Delay (s/veh)		71.9			18.1			18.3			13.7	
Approach LOS		E			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 80.3

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.19

Intersection Signal Delay (s/veh): 35.7

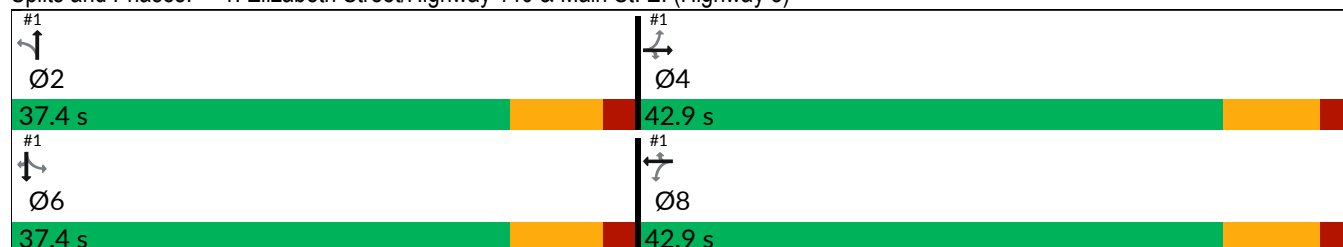
Intersection LOS: D

Intersection Capacity Utilization 88.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)



Queues

2041 FB PM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	323	359	63	36	389	77	58	175	91	139	409
v/c Ratio	1.19	0.58	0.13	0.11	0.57	0.14	0.16	0.35	0.26	0.23	0.68
Control Delay (s/veh)	140.8	21.7	4.6	14.7	21.1	4.5	18.3	18.3	20.0	18.6	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	140.8	21.7	4.6	14.7	21.1	4.5	18.3	18.3	20.0	18.6	10.7
Queue Length 50th (m)	~68.3	46.0	0.0	3.4	46.5	0.2	6.2	17.6	10.1	15.2	7.4
Queue Length 95th (m)	#121.7	76.5	7.2	9.3	75.1	7.8	14.7	34.2	21.8	28.5	41.8
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0	110.0		100.0	30.0		100.0	115.0		25.0	
Base Capacity (vph)	272	622	494	317	682	537	367	501	353	596	604
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.58	0.13	0.11	0.57	0.14	0.16	0.35	0.26	0.23	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2041 FB PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	448	0	1	428	0	1	1	0	0	0	1
Future Volume (vph)	1	448	0	1	428	0	1	1	0	0	0	1
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												0.865
Flt Protected								0.976				
Satd. Flow (prot)	0	1301	0	0	1412	0	0	1419	0	0	1258	0
Flt Permitted								0.976				
Satd. Flow (perm)	0	1301	0	0	1412	0	0	1419	0	0	1258	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Confl. Peds. (#/hr)	1						1					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	14%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	487	0	1	465	0	1	1	0	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	488	0	0	466	0	0	2	0	0	1	0
Sign Control	Free			Free			Stop			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.2%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2041 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	448	0	1	428	0	1	1	0	0	0	1
Future Volume (Veh/h)	1	448	0	1	428	0	1	1	0	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	487	0	1	465	0	1	1	0	0	0	1
Pedestrians												1
Lane Width (m)												3.6
Walking Speed (m/s)												1.2
Percent Blockage												0
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	466			487			957	957	487	958	957	466
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	466			487			957	957	487	958	957	466
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1095			1076			236	257	581	236	257	596
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	488	466	2	1								
Volume Left	1	1	1	0								
Volume Right	0	0	0	1								
cSH	1095	1076	246	596								
Volume to Capacity	0.00*	0.00*	0.00*	0.00*								
Queue Length 95th (m)	0.0	0.0	0.2	0.0								
Control Delay (s/veh)	0.0	0.0	19.7	11.0								
Lane LOS	A	A	C	B								
Approach Delay (s/veh)	0.0	0.0	19.7	11.0								
Approach LOS			C	B								
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			41.2%	ICU Level of Service		A						
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	423	16	0	406	0	9	0	3	0	0	2
Future Volume (vph)	0	423	16	0	406	0	9	0	3	0	0	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.969			0.865	
Flt Protected								0.963				
Satd. Flow (prot)	0	1087	1137	0	1170	1325	0	1367	0	0	1270	0
Flt Permitted								0.963				
Satd. Flow (perm)	0	1087	1137	0	1170	1325	0	1367	0	0	1270	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	13%	1%	1%	5%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	0	460	17	0	441	0	10	0	3	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	460	17	0	441	0	0	13	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	423	16	0	406	0	9	0	3	0	0	2
Future Volume (Veh/h)	0	423	16	0	406	0	9	0	3	0	0	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	460	17	0	441	0	10	0	3	0	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	441			477			903	901	460	904	918	441
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	441			477			903	901	460	904	918	441
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	100	100	100	100	100
cM capacity (veh/h)	1119			1090			258	278	601	257	272	618
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	460	17	441	0	13	2						
Volume Left	0	0	0	0	10	0						
Volume Right	0	17	0	0	3	2						
cSH	1119	1700	1090	1700	298	618						
Volume to Capacity	0.00	0.01	0.00	0.00	0.04	0.00*						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.1	0.1						
Control Delay (s/veh)	0.0	0.0	0.0	0.0	17.6	10.8						
Lane LOS				C			B					
Approach Delay (s/veh)	0.0		0.0		17.6	10.8						
Approach LOS				C			B					
Intersection Summary												
Average Delay				0.3								
Intersection Capacity Utilization				49.7%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2041 FB PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	141	6	6	103	2	7	4	8	2	10	2
Future Volume (vph)	4	141	6	6	103	2	7	4	8	2	10	2
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.998			0.942			0.982	
Flt Protected		0.999			0.997			0.981			0.993	
Satd. Flow (prot)	0	1458	0	0	1372	0	0	1351	0	0	1428	0
Flt Permitted		0.999			0.997			0.981			0.993	
Satd. Flow (perm)	0	1458	0	0	1372	0	0	1351	0	0	1428	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	8%	2%	1%	1%	2%	2%	1%	2%
Adj. Flow (vph)	4	153	7	7	112	2	8	4	9	2	11	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	0	0	121	0	0	21	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.6%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2041 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	141	6	6	103	2	7	4	8	2	10	2
Future Volume (Veh/h)	4	141	6	6	103	2	7	4	8	2	10	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	153	7	7	112	2	8	4	9	2	11	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	114			160			299	293	157	303	295	113
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	114			160			299	293	157	303	295	113
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	100	98	100
cM capacity (veh/h)	1475			1419			641	615	889	636	613	940
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	164	121	21	15								
Volume Left	4	7	8	2								
Volume Right	7	2	9	2								
cSH	1475	1419	722	646								
Volume to Capacity	0.00*	0.00*	0.03	0.02								
Queue Length 95th (m)	0.1	0.1	0.7	0.6								
Control Delay (s/veh)	0.2	0.5	10.1	10.7								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.2	0.5	10.1	10.7								
Approach LOS			B	B								
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			21.6%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2041 FB PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	153	4	7	110	19	5	20	3	37	25	83
Future Volume (vph)	88	153	4	7	110	19	5	20	3	37	25	83
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.981			0.986			0.923	
Flt Protected		0.982			0.997			0.992			0.987	
Satd. Flow (prot)	0	1429	0	0	1381	0	0	1435	0	0	1331	0
Flt Permitted		0.982			0.997			0.992			0.987	
Satd. Flow (perm)	0	1429	0	0	1381	0	0	1435	0	0	1331	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	1%	6%	1%	1%	1%	2%	0%	2%	2%
Adj. Flow (vph)	96	166	4	8	120	21	5	22	3	40	27	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	266	0	0	149	0	0	30	0	0	157	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.1%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2041 FB PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	153	4	7	110	19	5	20	3	37	25	83
Future Volume (Veh/h)	88	153	4	7	110	19	5	20	3	37	25	83
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	96	166	4	8	120	21	5	22	3	40	27	90
Pedestrians					3				1			
Lane Width (m)					3.6				3.6			
Walking Speed (m/s)					1.2				1.2			
Percent Blockage					0				0			
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	142			170			610	518	171	525	510	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	142			170			610	518	171	525	510	132
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			99			98	95	100	90	94	90
cM capacity (veh/h)	1434			1413			331	429	871	421	433	917
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	266	149	30	157								
Volume Left	96	8	5	40								
Volume Right	4	21	3	90								
cSH	1434	1413	430	614								
Volume to Capacity	0.07	0.00*	0.07	0.26								
Queue Length 95th (m)	1.7	0.1	1.8	8.1								
Control Delay (s/veh)	3.1	0.5	14.0	12.9								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.1	0.5	14.0	12.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Utilization			53.1%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	238	88	63	303	57	116	111	42	26	87	179
Future Volume (vph)	225	238	88	63	303	57	116	111	42	26	87	179
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.959				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1582	1054	1429	1566	1137	1401	1299	0	1387	1582	1044
Flt Permitted	0.519			0.599			0.695			0.651		
Satd. Flow (perm)	703	1582	1054	901	1566	1137	1025	1299	0	951	1582	1044
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96			62		27				195
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			841.1			1044.5			158.6	
Travel Time (s)		21.0			43.3			75.2			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	3%	9%	0%	4%	1%	2%	3%	1%	3%	3%	10%
Adj. Flow (vph)	245	259	96	68	329	62	126	121	46	28	95	195
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	259	96	68	329	62	126	167	0	28	95	195
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	29.7	29.7	29.7	29.7	29.7	29.7	30.2	30.2		30.2	30.2	30.2
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39	0.40	0.40		0.40	0.40	0.40
v/c Ratio	0.88	0.42	0.20	0.19	0.53	0.13	0.31	0.31		0.07	0.15	0.36
Control Delay (s/veh)	54.5	18.3	4.4	15.8	20.6	4.6	20.0	16.4		16.9	17.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	54.5	18.3	4.4	15.8	20.6	4.6	20.0	16.4		16.9	17.3	5.1
LOS	D	B	A	B	C	A	C	B		B	B	A
Approach Delay (s/veh)		30.9			17.8			18.0			9.7	
Approach LOS		C			B			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 75.4

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.88

Intersection Signal Delay (s/veh): 21.0

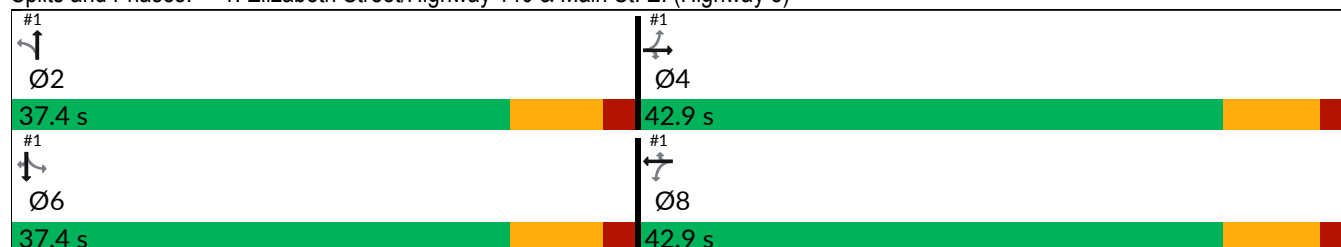
Intersection LOS: C

Intersection Capacity Utilization 79.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)



Queues

2041 FB SAT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	245	259	96	68	329	62	126	167	28	95	195
v/c Ratio	0.88	0.42	0.20	0.19	0.53	0.13	0.31	0.31	0.07	0.15	0.36
Control Delay (s/veh)	54.5	18.3	4.4	15.8	20.6	4.6	20.0	16.4	16.9	17.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.5	18.3	4.4	15.8	20.6	4.6	20.0	16.4	16.9	17.3	5.1
Queue Length 50th (m)	35.4	27.6	0.0	6.4	37.4	0.0	14.4	15.8	2.9	10.2	0.0
Queue Length 95th (m)	#81.2	46.5	8.9	14.9	61.4	6.8	28.8	31.7	8.4	20.7	14.2
Internal Link Dist (m)	383.5			817.1			1020.5			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	328	740	544	421	732	564	410	537	381	634	535
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.35	0.18	0.16	0.45	0.11	0.31	0.31	0.07	0.15	0.36

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2041 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	367	0	0	383	0	0	0	0	0	0	0
Future Volume (vph)	0	367	0	0	383	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1440	0	0	1454	0	0	1454	0	0	1454	0
Flt Permitted												
Satd. Flow (perm)	0	1440	0	0	1454	0	0	1454	0	0	1454	0
Link Speed (k/h)	70				80				50			
Link Distance (m)	841.1				852.0				103.0			
Travel Time (s)	43.3				38.3				7.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	399	0	0	416	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	399	0	0	416	0	0	0	0	0	0	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 29.2%												
ICU Level of Service A												
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2041 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	367	0	0	383	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	367	0	0	383	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	399	0	0	416	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	416			399			815	815	399	815	815	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	416			399			815	815	399	815	815	416
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1143			1160			296	312	651	296	312	637
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	399	416	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1143	1160	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s/veh)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s/veh)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			29.2%		ICU Level of Service					A		
Analysis Period (min)			15									

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	356	7	1	369	2	2	1	2	0	1	0
Future Volume (vph)	0	356	7	1	369	2	2	1	2	0	1	0
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.946				
Flt Protected								0.980				
Satd. Flow (prot)	0	1192	1137	0	1204	1126	0	1353	0	0	1454	0
Flt Permitted								0.980				
Satd. Flow (perm)	0	1192	1137	0	1204	1126	0	1353	0	0	1454	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			892.0			219.0	
Travel Time (s)		38.3			16.0			53.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	0	387	8	1	401	2	2	1	2	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	387	8	0	402	2	0	5	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 46.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FB SAT
02/25/2026

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	0	356	7	1	369	2	2	1	2	0	1	0						
Future Volume (Veh/h)	0	356	7	1	369	2	2	1	2	0	1	0						
Sign Control	Free			Free			Stop			Stop								
Grade	0%			0%			0%			0%								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						
Hourly flow rate (vph)	0	387	8	1	401	2	2	1	2	0	1	0						
Pedestrians																		
Lane Width (m)																		
Walking Speed (m/s)																		
Percent Blockage																		
Right turn flare (veh)																		
Median type	None			None														
Median storage veh																		
Upstream signal (m)																		
pX, platoon unblocked																		
vC, conflicting volume	403			395			791	792	387	793	798	401						
vC1, stage 1 conf vol																		
vC2, stage 2 conf vol																		
vCu, unblocked vol	403			395			791	792	387	793	798	401						
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2						
tC, 2 stage (s)																		
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3						
p0 queue free %	100			100			99	100	100	100	100	100						
cM capacity (veh/h)	1156			1169			308	321	661	305	319	651						
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1												
Volume Total	387	8	402	2	5	1												
Volume Left	0	0	1	0	2	0												
Volume Right	0	8	0	2	2	0												
cSH	1156	1700	1169	1700	396	319												
Volume to Capacity	0.00	0.00*	0.00*	0.00*	0.01	0.00*												
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.3	0.1												
Control Delay (s/veh)	0.0	0.0	0.0	0.0	14.2	16.3												
Lane LOS			A		B		C											
Approach Delay (s/veh)	0.0		0.0		14.2	16.3												
Approach LOS					B		C											
Intersection Summary																		
Average Delay			0.1															
Intersection Capacity Utilization			46.8%		ICU Level of Service				A									
Analysis Period (min)			15															
* Value less than 0.01.																		

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2041 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	114	8	6	86	1	3	2	9	4	7	3
Future Volume (vph)	0	114	8	6	86	1	3	2	9	4	7	3
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991			0.999			0.910			0.973	
Flt Protected					0.997			0.990			0.987	
Satd. Flow (prot)	0	1455	0	0	1461	0	0	1314	0	0	1404	0
Flt Permitted					0.997			0.990			0.987	
Satd. Flow (perm)	0	1455	0	0	1461	0	0	1314	0	0	1404	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		840.4			560.6			68.7			892.0	
Travel Time (s)		50.4			33.6			4.9			53.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	1%	2%	1%	1%	2%	2%	1%	2%
Adj. Flow (vph)	0	124	9	7	93	1	3	2	10	4	8	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	101	0	0	15	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.2%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2041 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	114	8	6	86	1	3	2	9	4	7	3
Future Volume (Veh/h)	0	114	8	6	86	1	3	2	9	4	7	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	124	9	7	93	1	3	2	10	4	8	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	94			133			243	237	129	247	241	94
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	94			133			243	237	129	247	241	94
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	99	99	100
cM capacity (veh/h)	1500			1452			702	663	921	695	659	963
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	133	101	15	15								
Volume Left	0	7	3	4								
Volume Right	9	1	10	3								
cSH	1500	1452	827	714								
Volume to Capacity	0.00	0.00*	0.02	0.02								
Queue Length 95th (m)	0.0	0.1	0.4	0.5								
Control Delay (s/veh)	0.0	0.6	9.4	10.1								
Lane LOS		A	A	B								
Approach Delay (s/veh)	0.0	0.6	9.4	10.1								
Approach LOS			A	B								
Intersection Summary												
Average Delay			1.3									
Intersection Capacity Utilization			22.2%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2041 FB SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	112	4	6	96	12	2	25	4	23	23	86
Future Volume (vph)	68	112	4	6	96	12	2	25	4	23	23	86
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.986			0.984			0.912	
Flt Protected		0.982			0.997			0.997			0.991	
Satd. Flow (prot)	0	1438	0	0	1443	0	0	1439	0	0	1316	0
Flt Permitted		0.982			0.997			0.997			0.991	
Satd. Flow (perm)	0	1438	0	0	1443	0	0	1439	0	0	1316	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			822.5			155.4			1044.5	
Travel Time (s)		14.5			59.2			11.2			94.0	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	1%	1%	1%	1%	1%	2%	1%	2%	2%
Adj. Flow (vph)	74	122	4	7	104	13	2	27	4	25	25	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	124	0	0	33	0	0	143	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	42.6%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2041 FB SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	112	4	6	96	12	2	25	4	23	23	86
Future Volume (Veh/h)	68	112	4	6	96	12	2	25	4	23	23	86
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	122	4	7	104	13	2	27	4	25	25	93
Pedestrians	3											
Lane Width (m)	3.6											
Walking Speed (m/s)	1.2											
Percent Blockage	0											
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	117			126			502	403	127	417	399	111
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	117			126			502	403	127	417	399	111
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	95	100	95	95	90
cM capacity (veh/h)	1478			1467			400	508	921	501	510	943
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	200	124	33	143								
Volume Left	74	7	2	25								
Volume Right	4	13	4	93								
cSH	1478	1467	528	724								
Volume to Capacity	0.05	0.00*	0.06	0.20								
Queue Length 95th (m)	1.3	0.1	1.6	5.9								
Control Delay (s/veh)	3.1	0.5	12.3	11.2								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	3.1	0.5	12.3	11.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay				5.3								
Intersection Capacity Utilization				42.6%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

APPENDIX J

ITE Excerpts

Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units

**On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 26

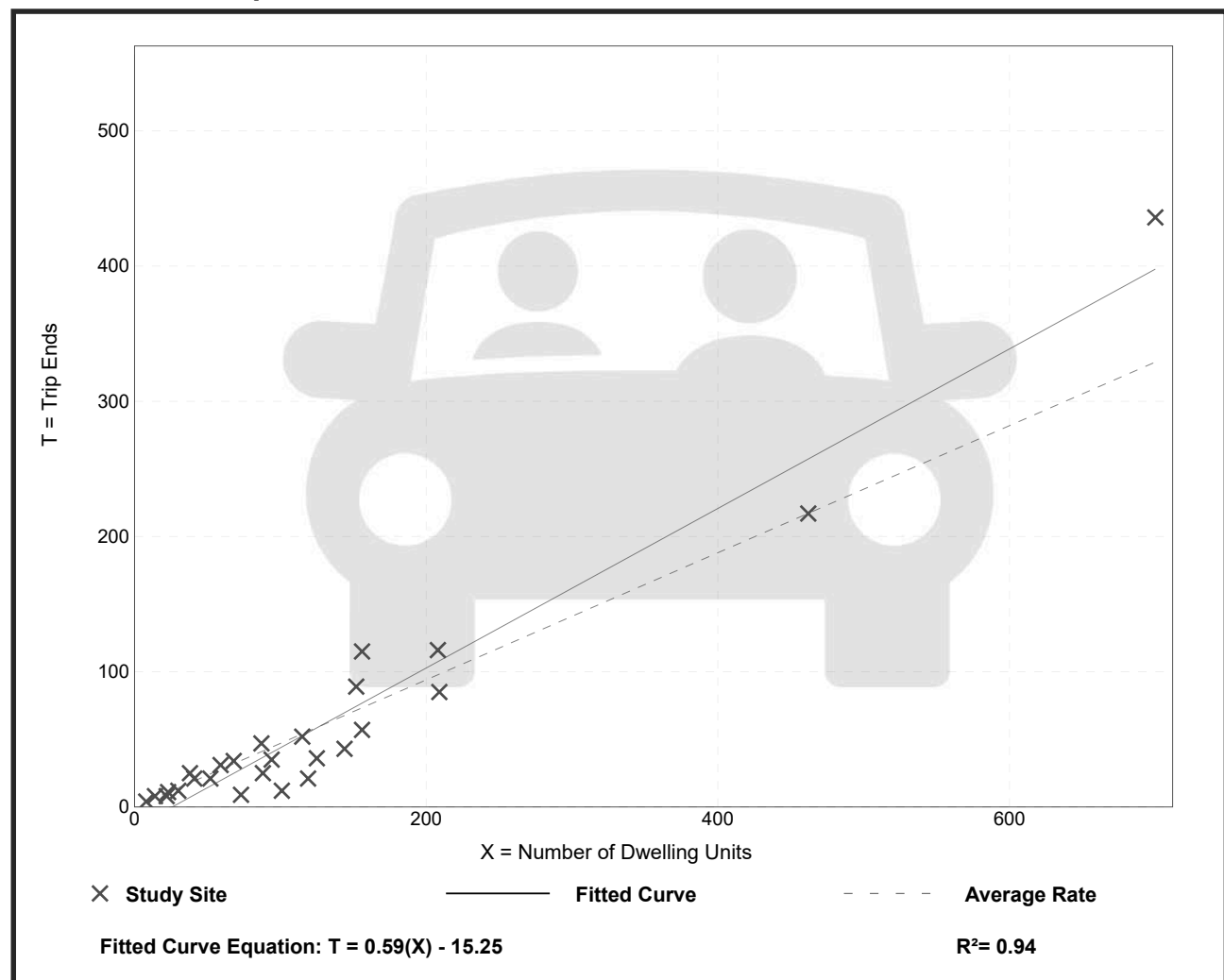
Avg. Num. of Dwelling Units: 129

Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.47	0.12 - 0.74	0.16

Data Plot and Equation



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units

**On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 31

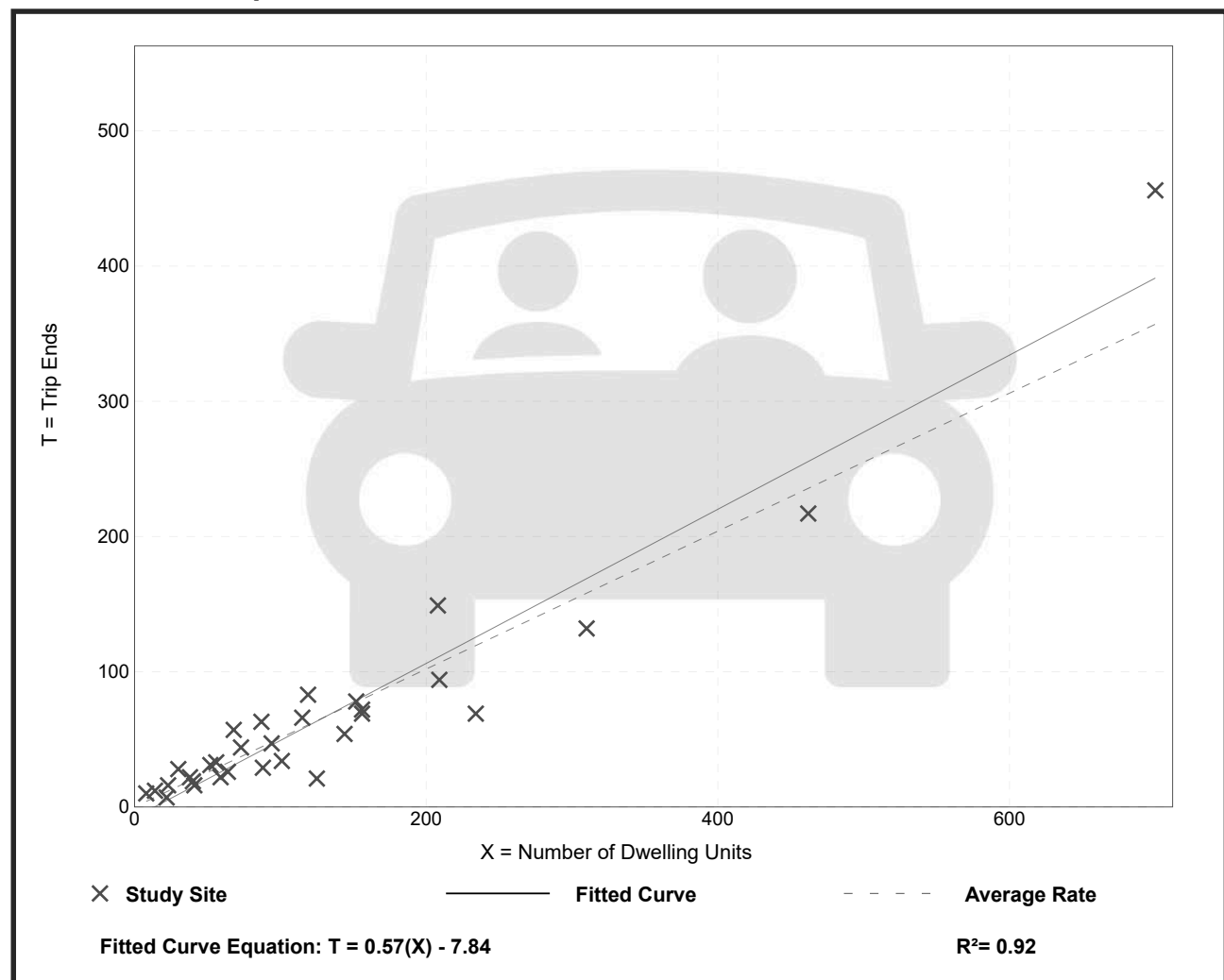
Avg. Num. of Dwelling Units: 131

Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.17 - 1.25	0.16

Data Plot and Equation



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. Num. of Dwelling Units: 386

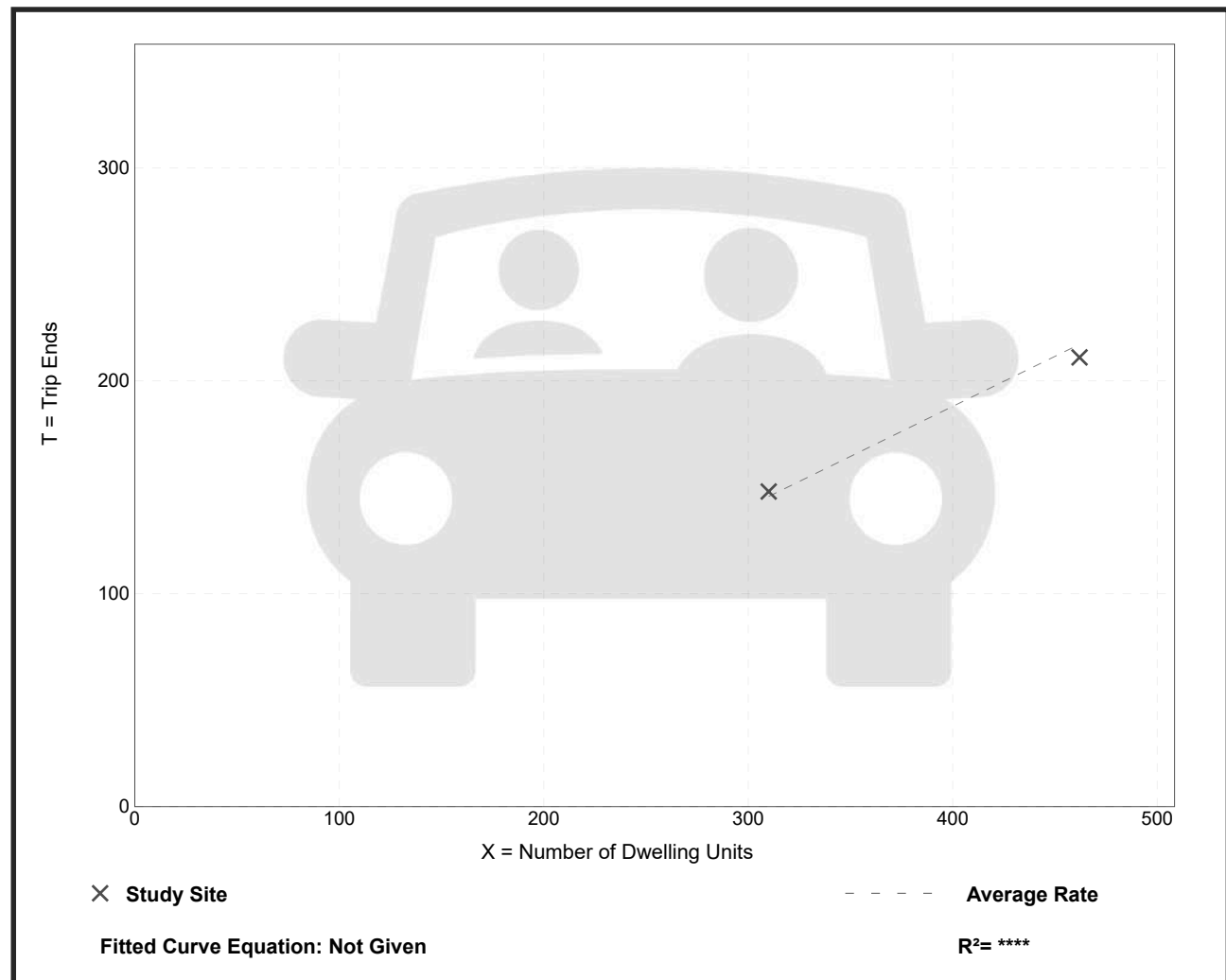
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.47	0.46 - 0.48	*

Data Plot and Equation

Caution – Small Sample Size



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

**On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 153

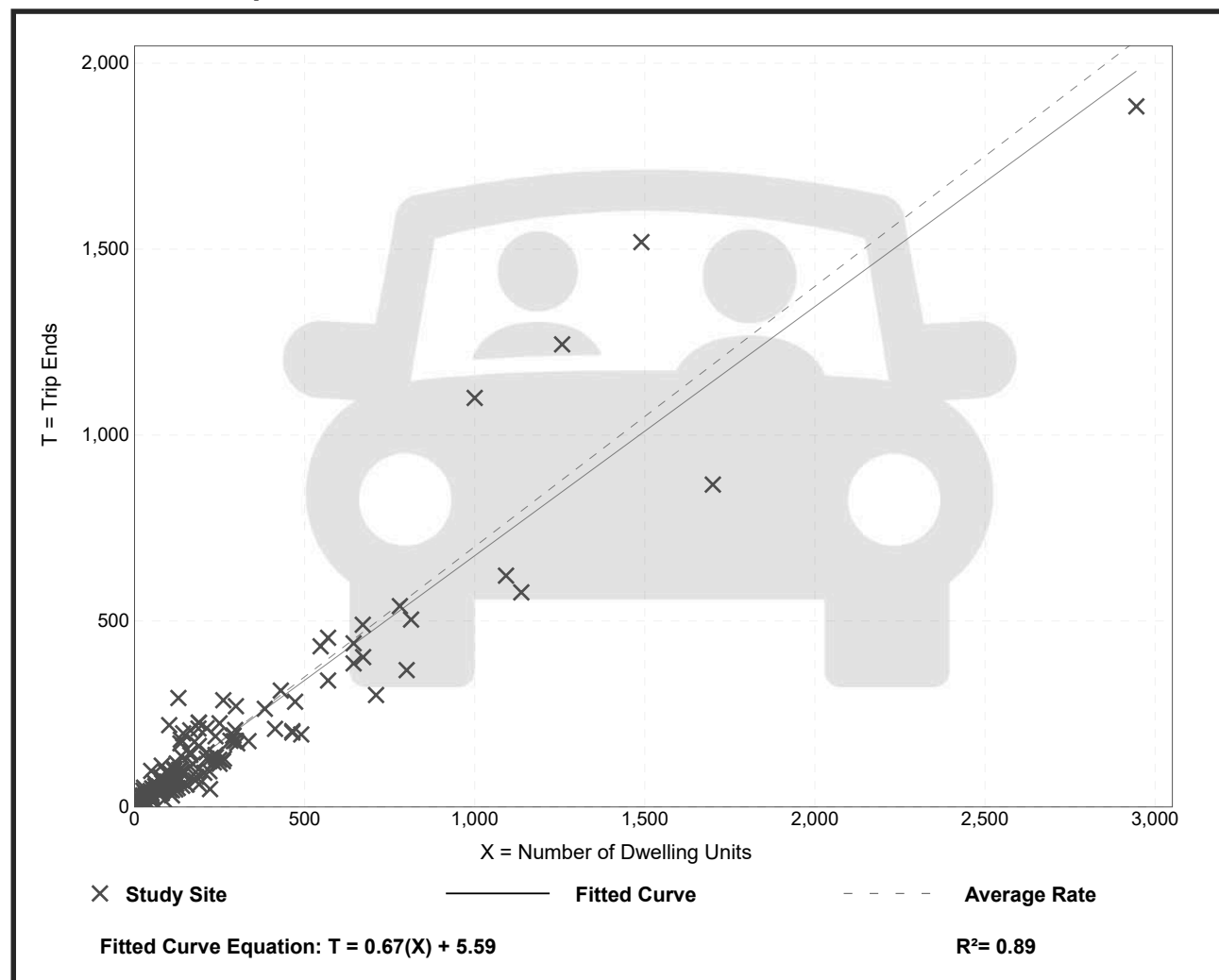
Avg. Num. of Dwelling Units: 239

Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.22 - 2.27	0.26

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

**On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 166

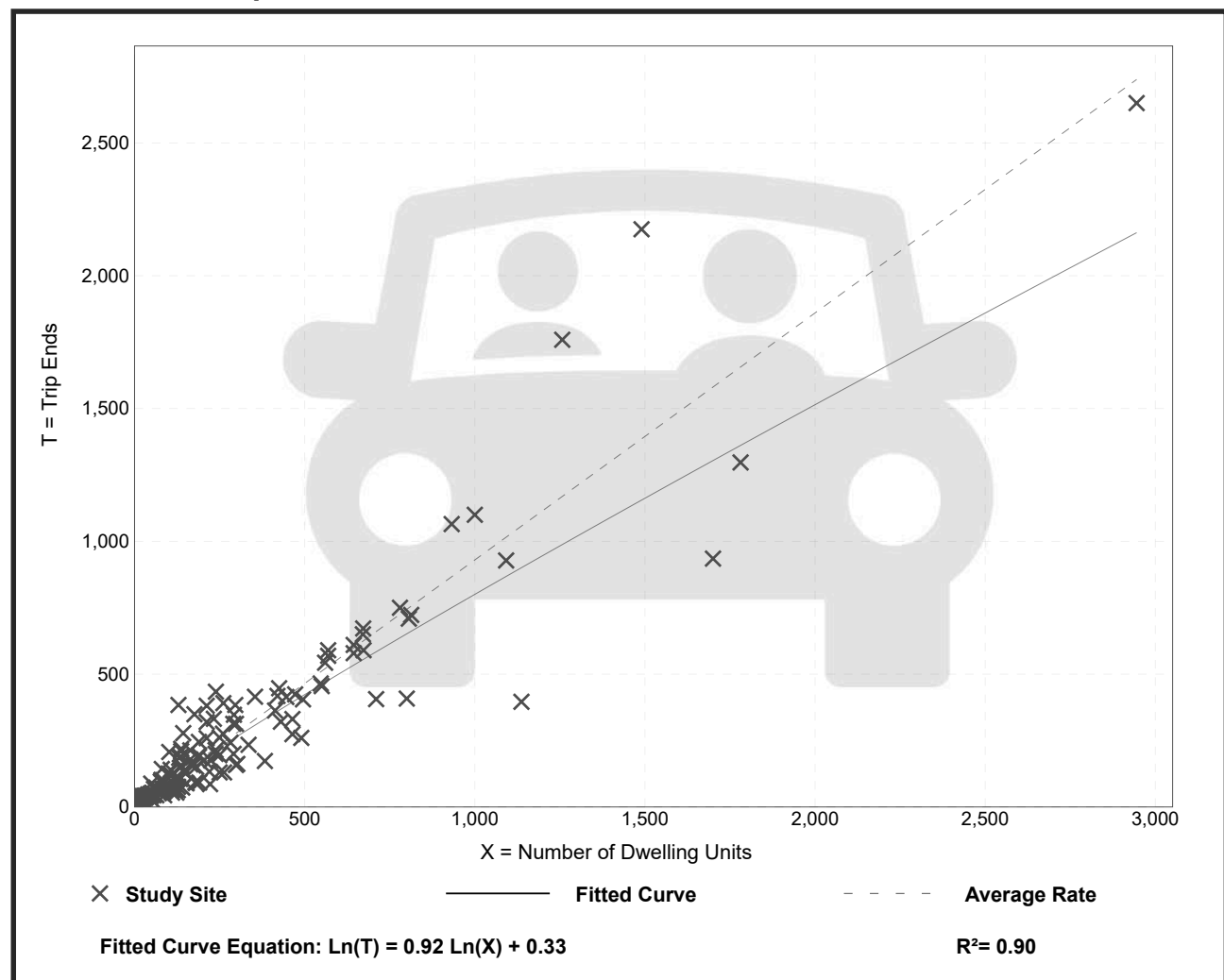
Avg. Num. of Dwelling Units: 266

Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.93	0.35 - 2.98	0.33

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 33

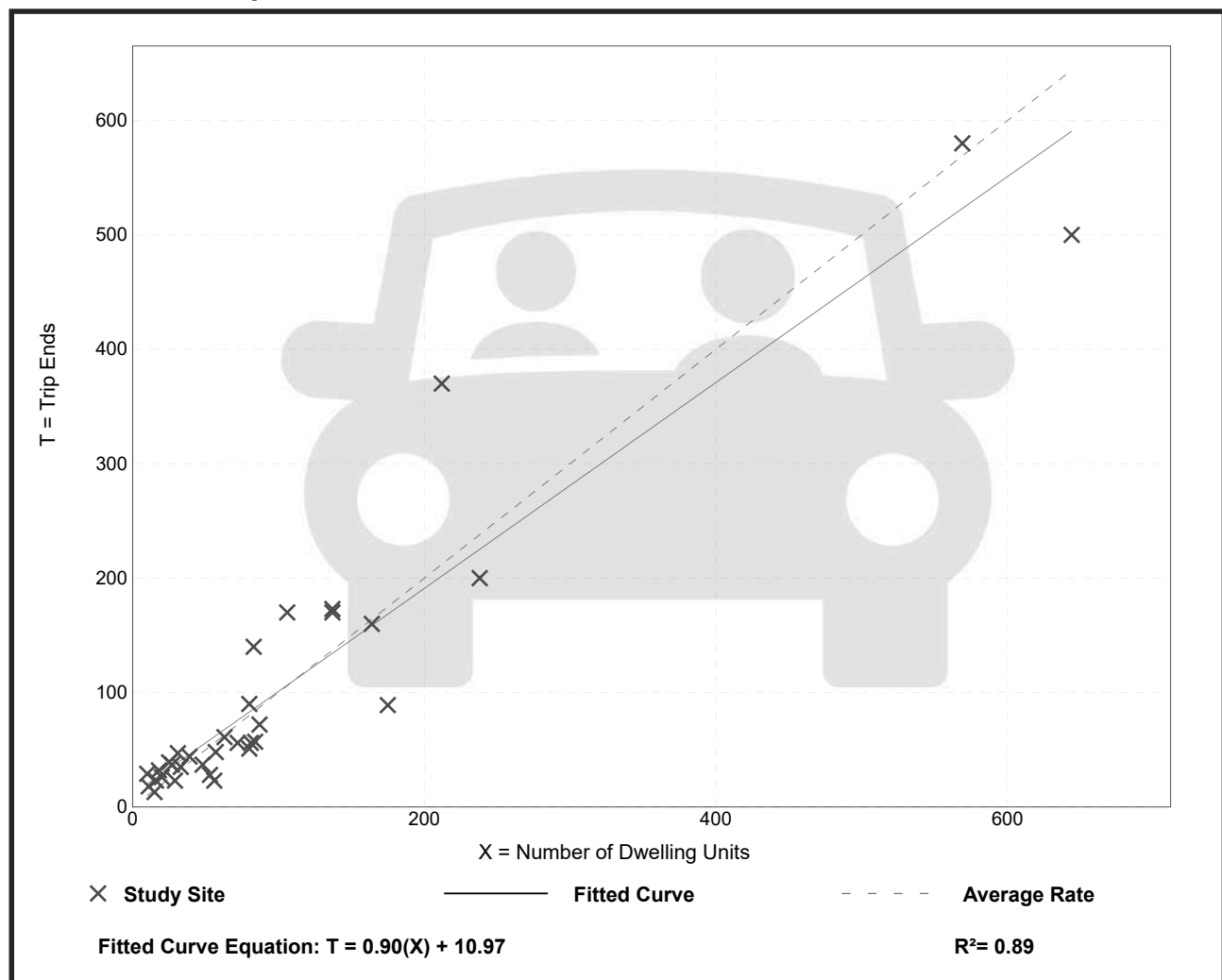
Avg. Num. of Dwelling Units: 106

Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
1.00	0.41 - 2.90	0.36

Data Plot and Equation



Trip Gen Manual, 12th Edition

• Institute of Transportation Engineers

Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

**On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 51

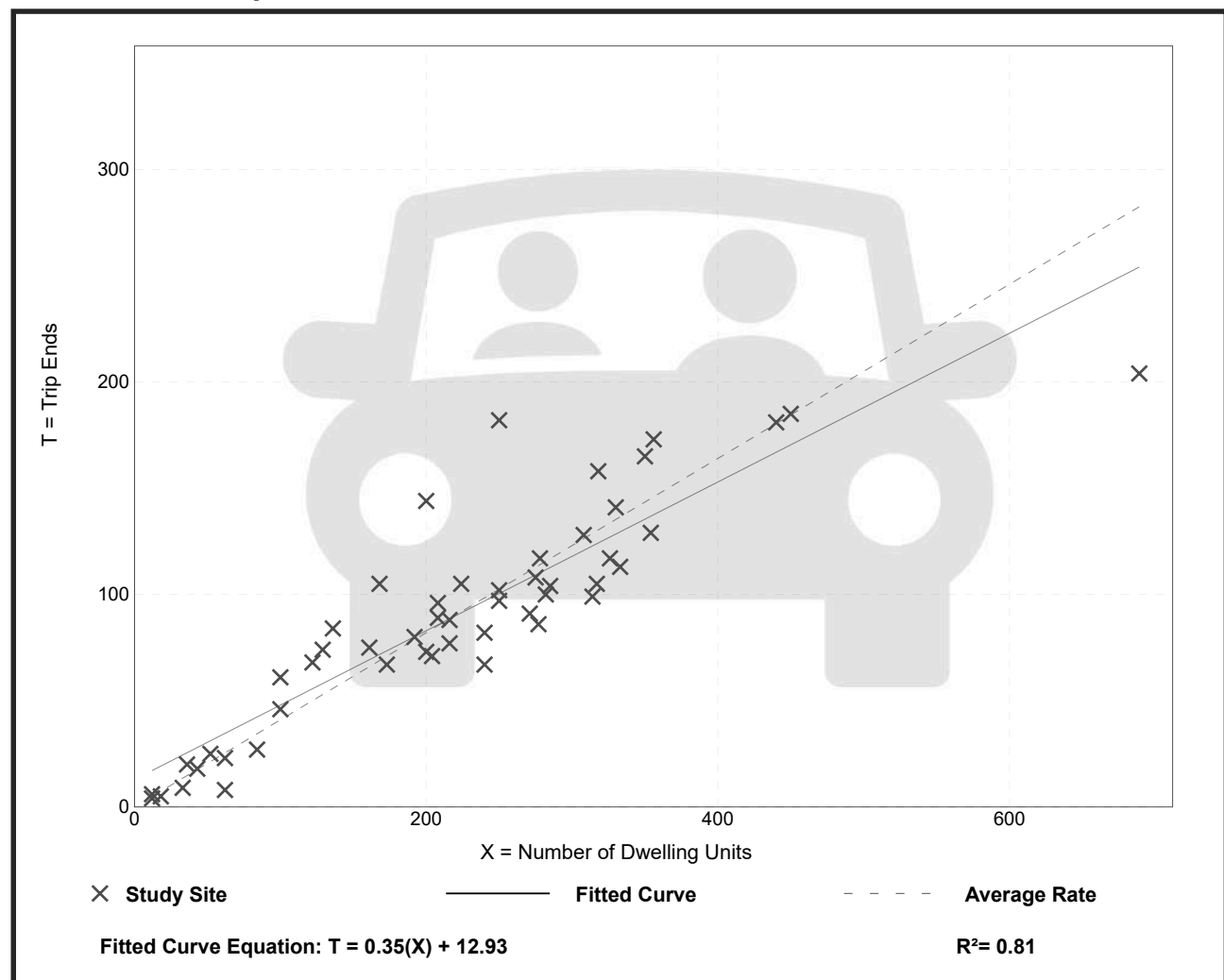
Avg. Num. of Dwelling Units: 219

Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.41	0.13 - 0.73	0.10

Data Plot and Equation



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

**On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 61

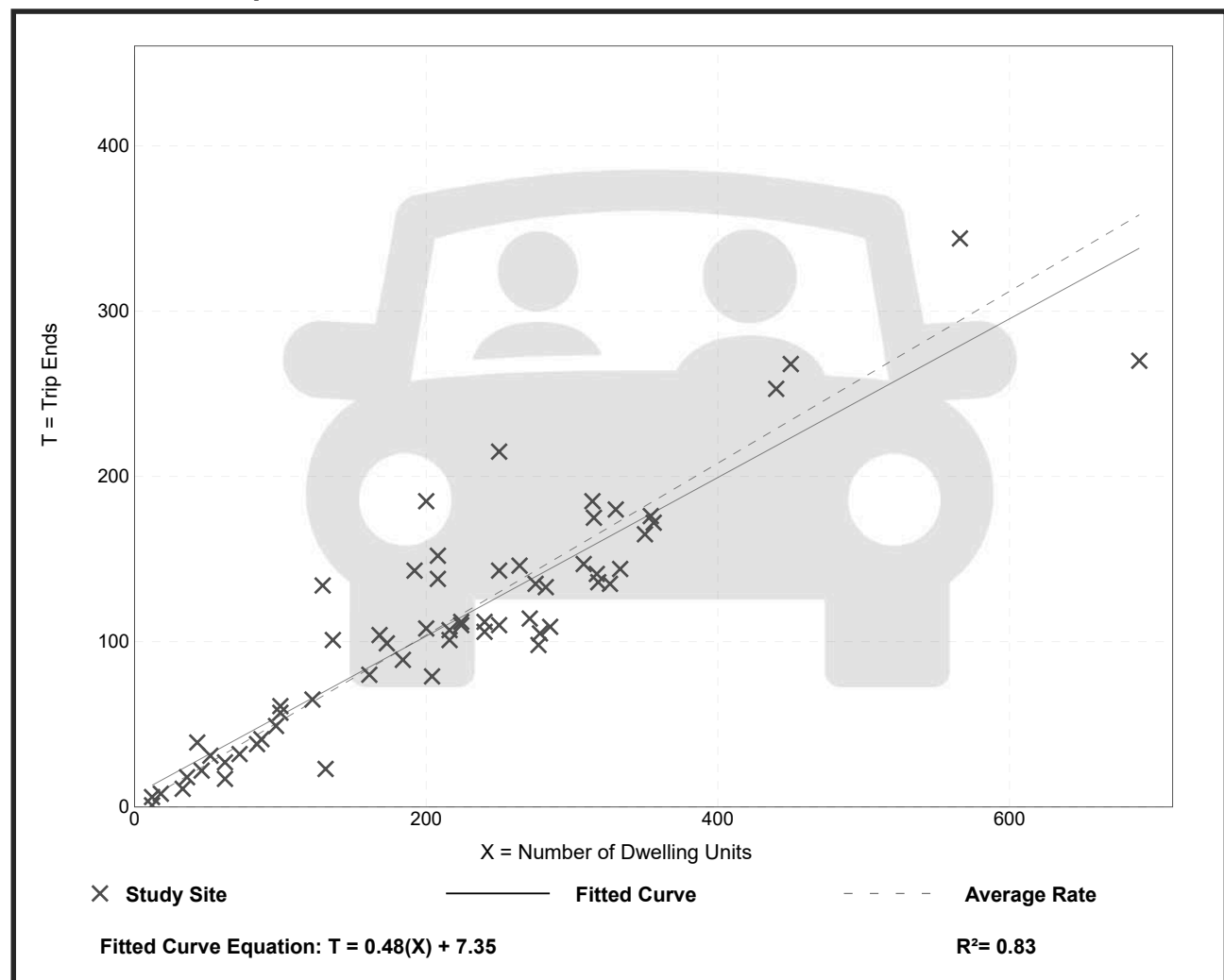
Avg. Num. of Dwelling Units: 215

Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.52	0.08 - 1.04	0.13

Data Plot and Equation



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday, Peak Hour of Generator

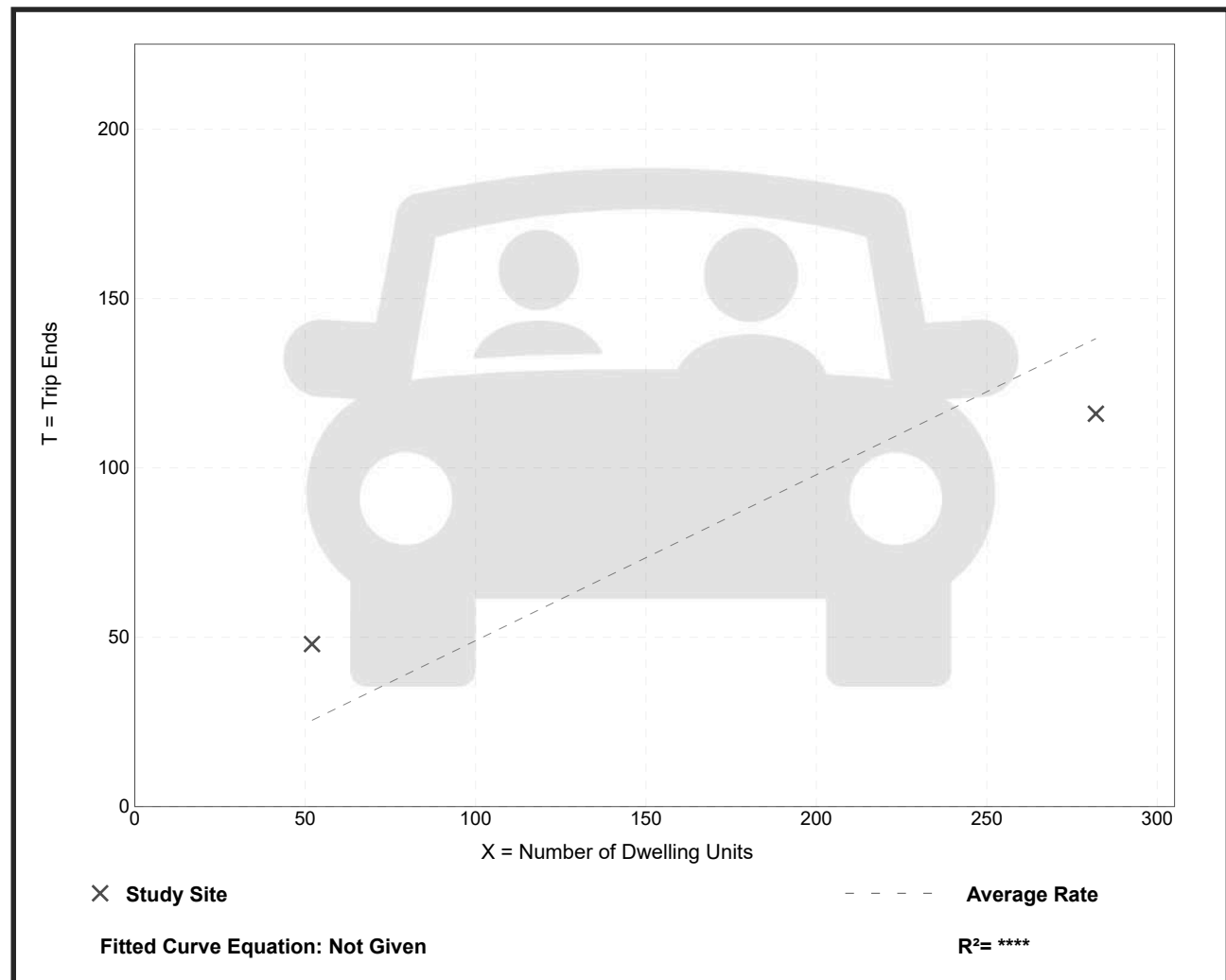
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Dwelling Units: 167
Directional Distribution: 38% entering, 62% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.49	0.41 - 0.92	*

Data Plot and Equation

Caution – Small Sample Size



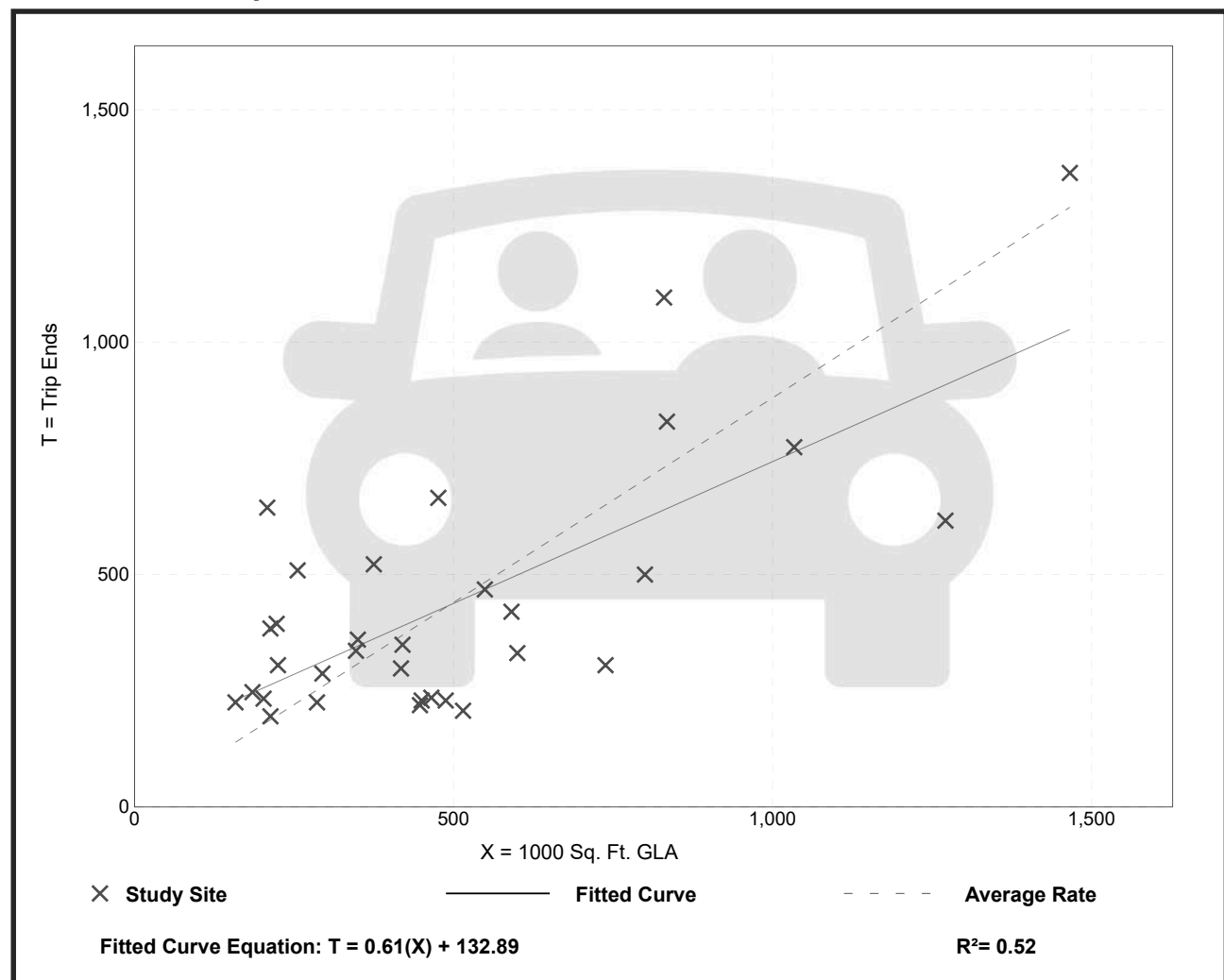
Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 32
 Avg. 1000 Sq. Ft. GLA: 498
 Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.88	0.40 - 3.10	0.45

Data Plot and Equation



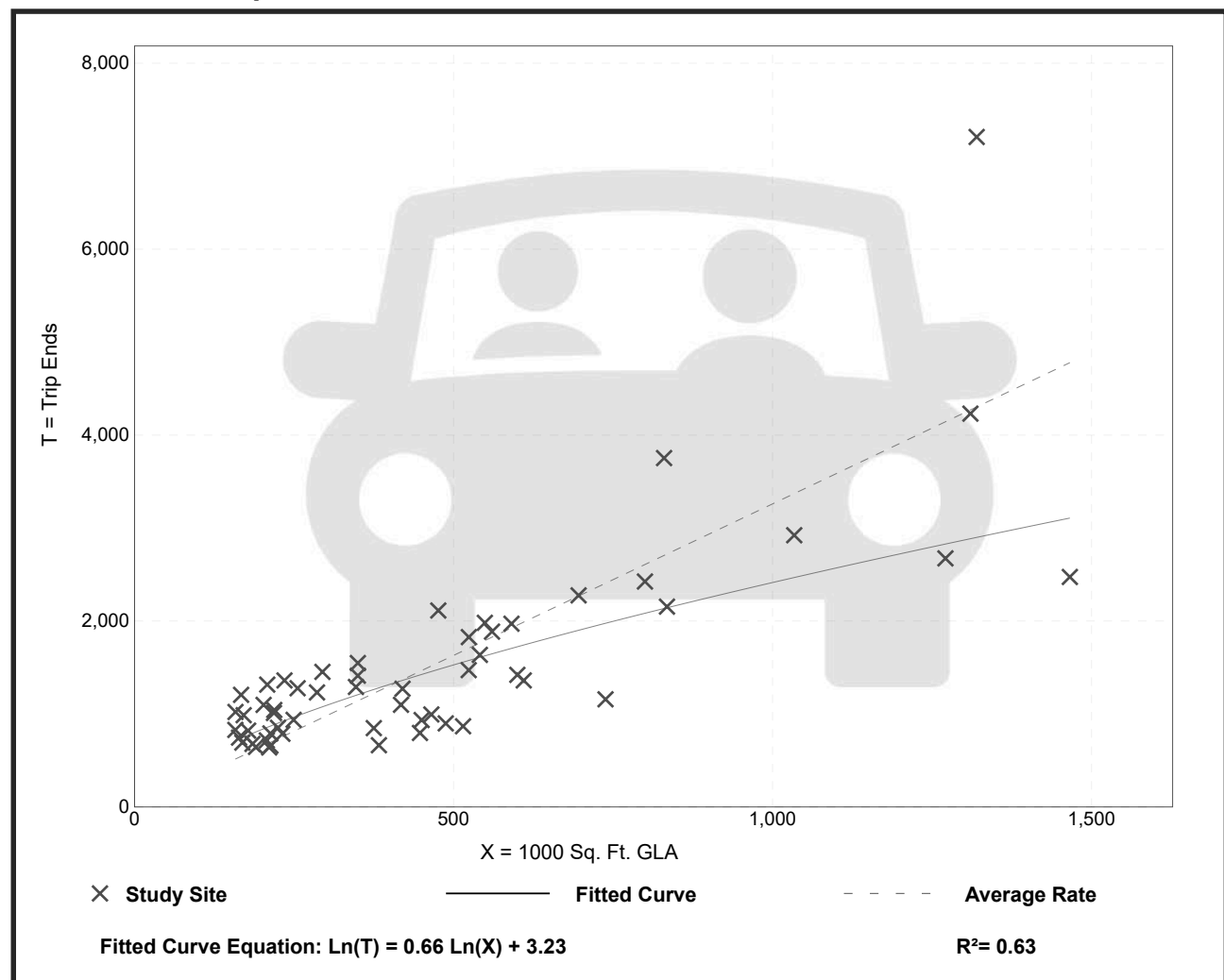
Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 55
 Avg. 1000 Sq. Ft. GLA: 460
 Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.26	1.57 - 7.22	1.25

Data Plot and Equation



Shopping Center (>150k) (820)

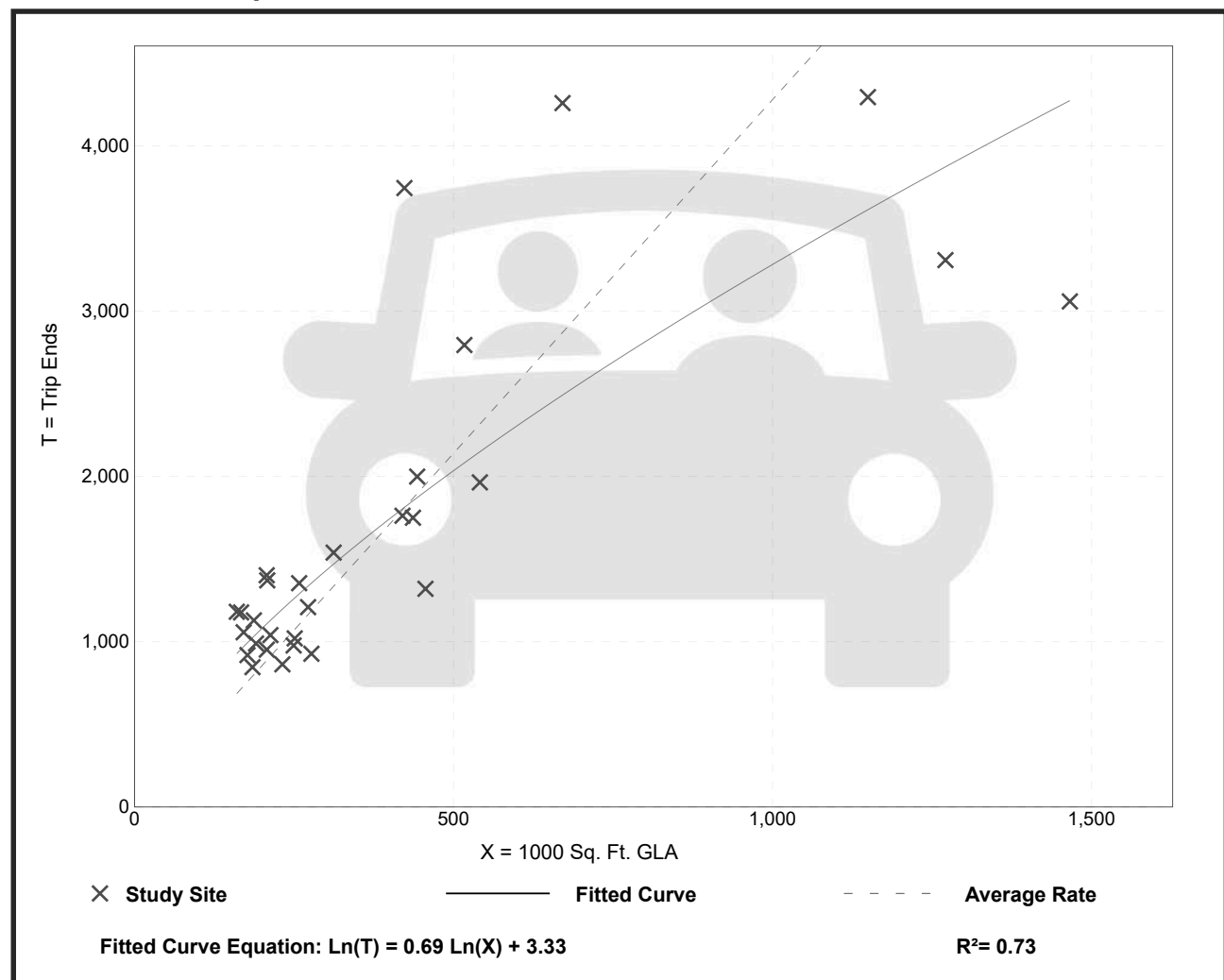
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. 1000 Sq. Ft. GLA: 404
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.28	2.09 - 8.85	1.68

Data Plot and Equation



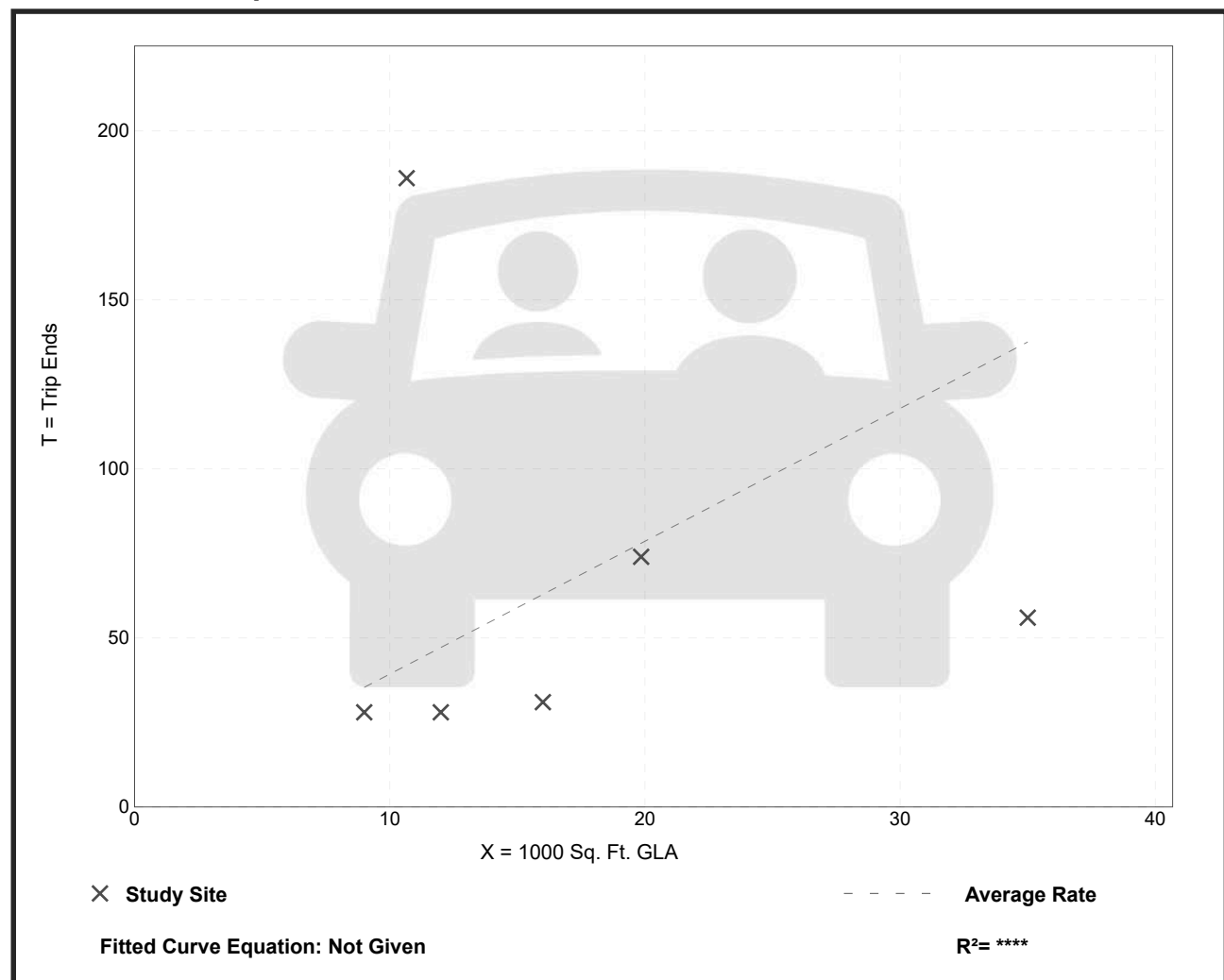
Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 6
 Avg. 1000 Sq. Ft. GLA: 17
 Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.93	1.60 - 17.44	5.12

Data Plot and Equation



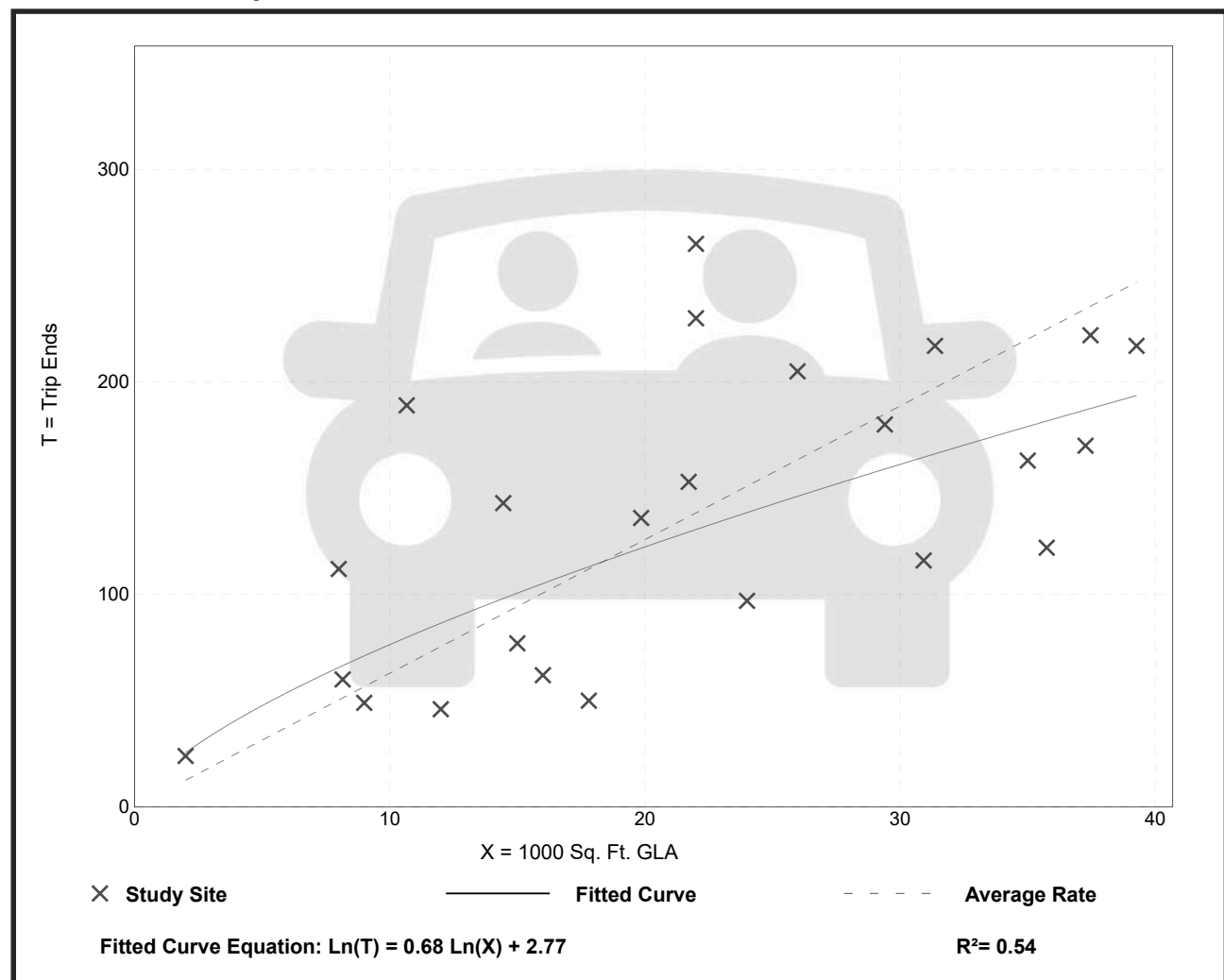
Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 24
 Avg. 1000 Sq. Ft. GLA: 22
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.29	2.81 - 17.72	3.02

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

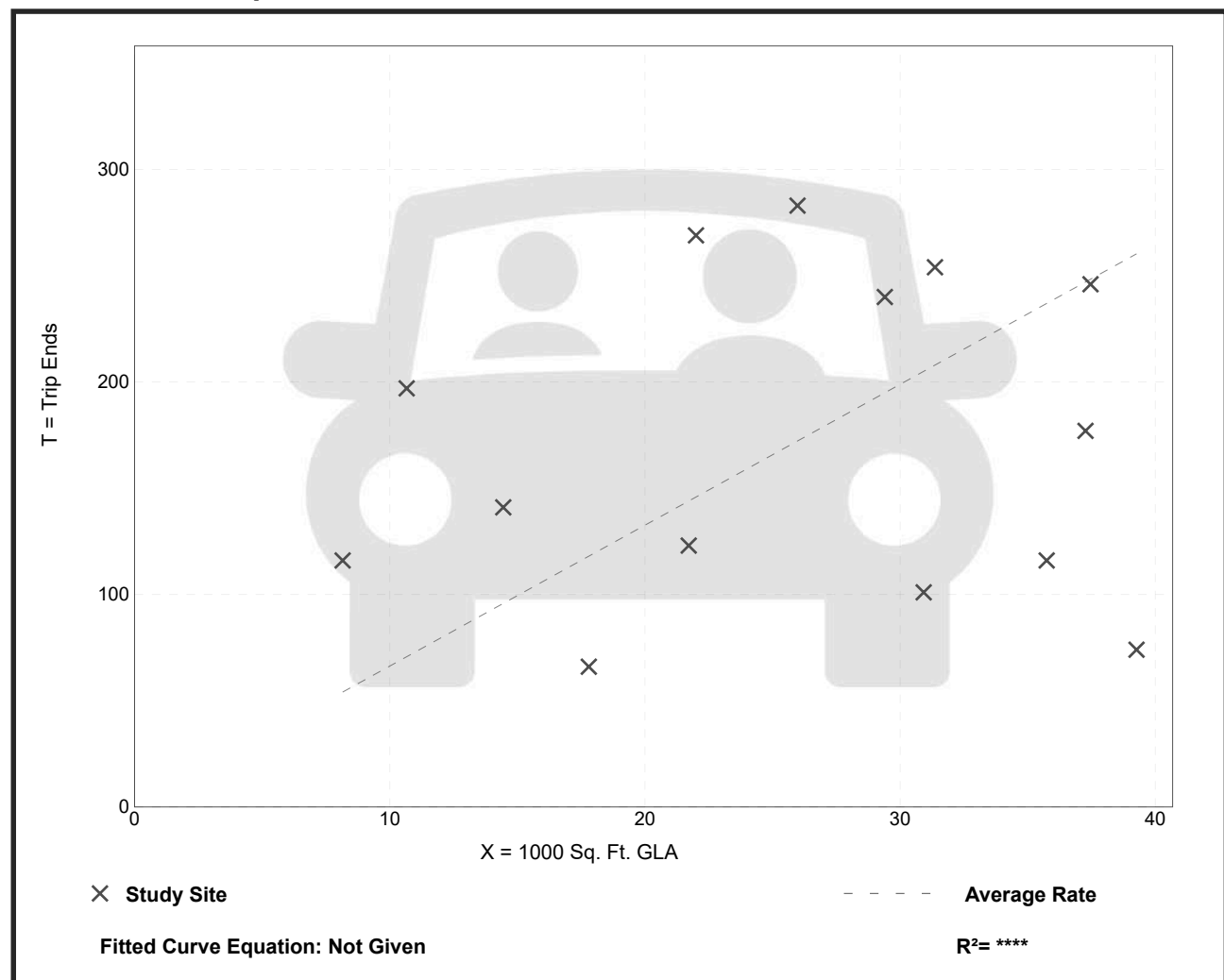
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 14
Avg. 1000 Sq. Ft. GLA: 26
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.63	1.88 - 18.48	3.99

Data Plot and Equation



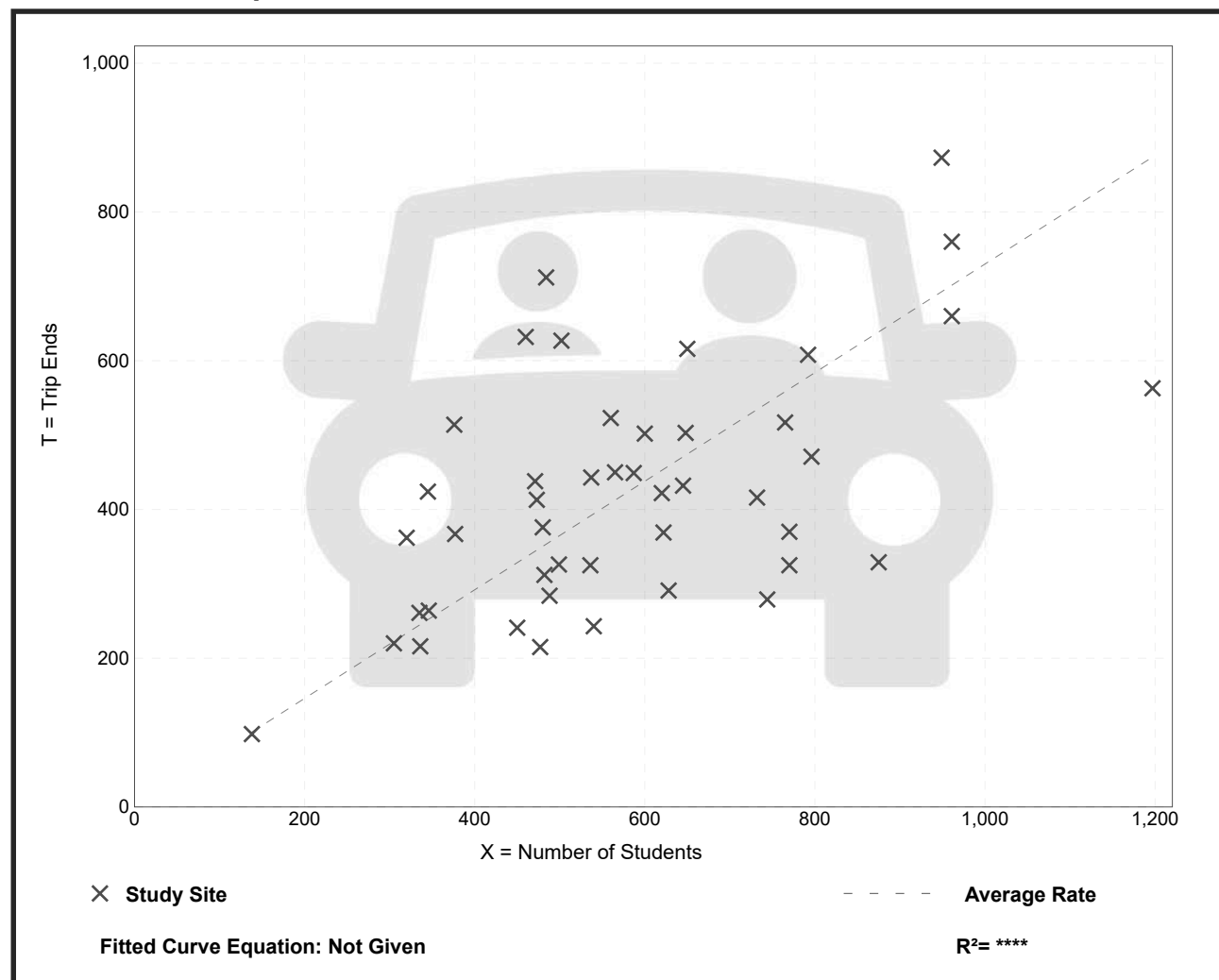
Elementary School (520)

Vehicle Trip Ends vs: Students
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 45
 Avg. Num. of Students: 582
 Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.73	0.38 - 1.47	0.26

Data Plot and Equation



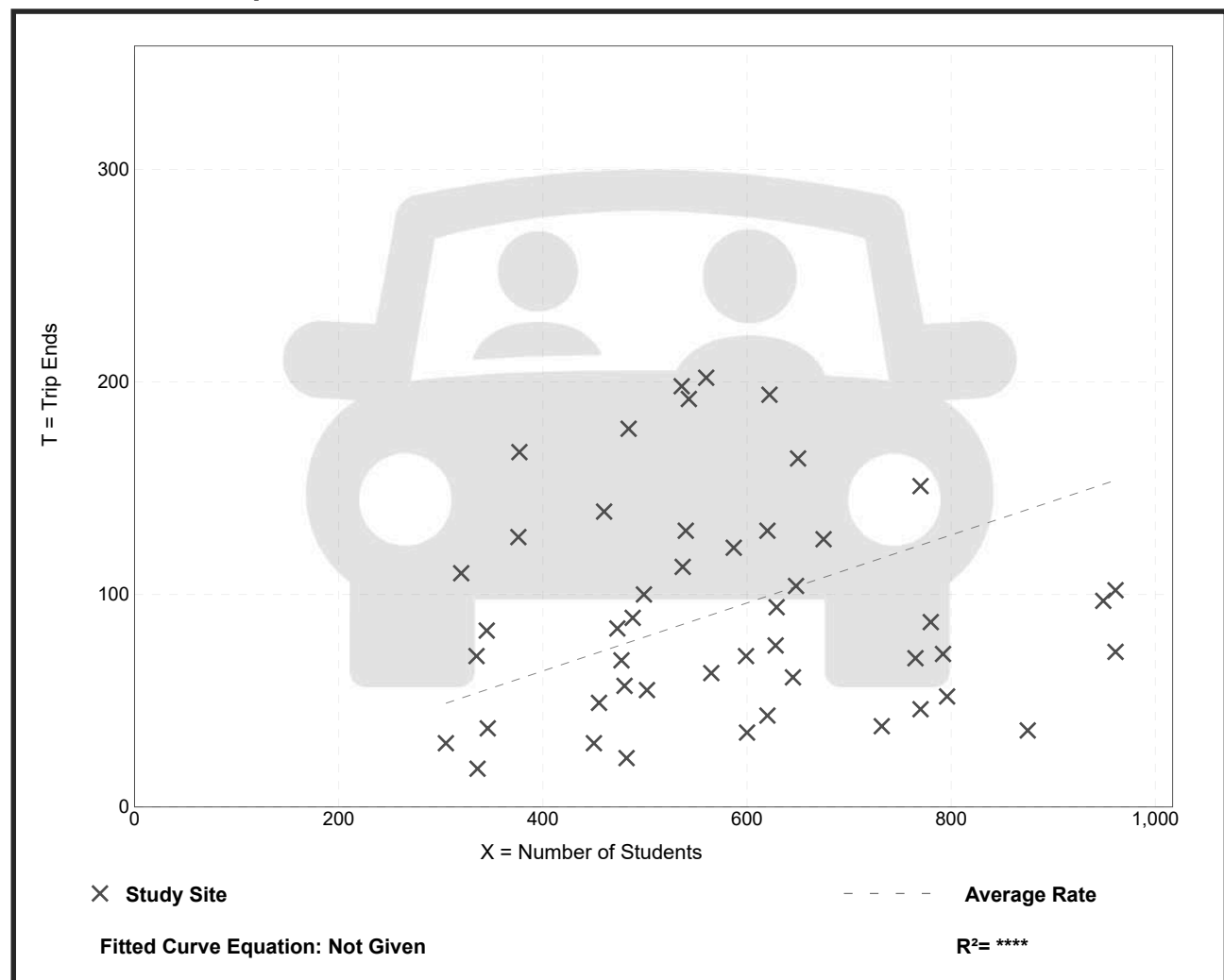
Elementary School (520)

Vehicle Trip Ends vs: Students
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 48
 Avg. Num. of Students: 582
 Directional Distribution: 46% entering, 54% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.16	0.04 - 0.44	0.10

Data Plot and Equation



APPENDIX K

TTS Summary

Time Period	Internal								External								Total
	NW	N	NE	E	SE	S	SW	W	NW	N	NE	E	SE	S	SW	W	
AM (IN)	4.3%	0.0%	0.0%	0.0%	9.0%	0.0%	31.1%	13.7%	0.0%	41.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
AM (OUT)	0.0%	0.0%	6.3%	8.5%	0.0%	0.0%	0.0%	46.6%	0.0%	30.7%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	100.0%
PM (IN)	2.4%	10.1%	2.8%	3.6%	3.2%	0.0%	0.0%	2.4%	12.3%	48.5%	4.9%	6.5%	0.0%	0.0%	0.0%	3.4%	100.0%
PM (OUT)	0.0%	3.1%	8.2%	11.7%	0.9%	0.0%	0.0%	11.9%	11.2%	23.2%	8.7%	17.1%	0.0%	0.0%	0.0%	4.1%	100.0%
SAT (IN)	14.5%	2.9%	3.9%	1.9%	4.4%	0.0%	2.9%	6.3%	3.8%	50.7%	4.3%	1.5%	0.0%	0.0%	0.0%	3.0%	100.0%
SAT (OUT)	0.0%	2.5%	7.1%	17.5%	0.0%	0.0%	0.0%	17.8%	10.4%	21.3%	1.1%	5.2%	0.0%	0.0%	0.0%	17.2%	100.0%

APPENDIX L

Sensitivity Scenario Detailed Capacity Analysis

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT AM - SC1
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	230	40	5	334	19	96	7	17	13	3	81
Future Volume (vph)	96	230	40	5	334	19	96	7	17	13	3	81
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	140.0		0.0	0.0		0.0	50.0		50.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	20.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.993			0.981			0.887	
Flt Protected		0.987			0.999			0.962			0.993	
Satd. Flow (prot)	0	1265	0	0	1183	0	0	1372	0	0	1281	0
Flt Permitted		0.987			0.999			0.962			0.993	
Satd. Flow (perm)	0	1265	0	0	1183	0	0	1372	0	0	1281	0
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	104	250	43	5	363	21	104	8	18	14	3	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	397	0	0	389	0	0	130	0	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	75.1%											
Analysis Period (min)	15											
	ICU Level of Service D											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2031 FT AM - SC1
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	230	40	5	334	19	96	7	17	13	3	81
Future Volume (Veh/h)	96	230	40	5	334	19	96	7	17	13	3	81
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	104	250	43	5	363	21	104	8	18	14	3	88
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	384			293			953	874	272	885	885	374
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384			293			953	874	272	885	885	374
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			46	97	98	94	99	87
cM capacity (veh/h)	1174			1269			191	262	767	236	258	673
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	397	389	130	105								
Volume Left	104	5	104	14								
Volume Right	43	21	18	88								
cSH	1174	1269	218	520								
Volume to Capacity	0.09	0.00*	0.60	0.20								
Queue Length 95th (m)	2.3	0.1	27.2	6.0								
Control Delay (s/veh)	2.9	0.1	43.4	13.7								
Lane LOS	A	A	E	B								
Approach Delay (s/veh)	2.9	0.1	43.4	13.7								
Approach LOS			E	B								
Intersection Summary												
Average Delay				8.1								
Intersection Capacity Utilization				75.1%	ICU Level of Service				D			
Analysis Period (min)				15								
* Value less than 0.01.												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	349	27	3	496	13	96	56	8	9	32	79
Future Volume (vph)	161	349	27	3	496	13	96	56	8	9	32	79
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	90.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	30.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.997			0.993			0.911	
Flt Protected		0.985						0.971			0.996	
Satd. Flow (prot)	0	1422	0	0	1450	0	0	1402	0	0	1319	0
Flt Permitted		0.985						0.971			0.996	
Satd. Flow (perm)	0	1422	0	0	1450	0	0	1402	0	0	1319	0
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	379	29	3	539	14	104	61	9	10	35	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	556	0	0	174	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	99.6%											
Analysis Period (min)	15											
ICU Level of Service F												

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

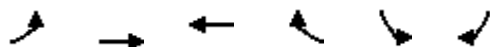
2031 FT AM - SC1
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	349	27	3	496	13	96	56	8	9	32	79
Future Volume (Veh/h)	161	349	27	3	496	13	96	56	8	9	32	79
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	175	379	29	3	539	14	104	61	9	10	35	86
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	553			408			1399	1303	394	1335	1310	546
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	553			408			1399	1303	394	1335	1310	546
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	83			100			0	54	99	86	73	84
cM capacity (veh/h)	1017			1151			69	133	655	72	131	538
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	583	556	174	131								
Volume Left	175	3	104	10								
Volume Right	29	14	9	86								
cSH	1017	1151	88	232								
Volume to Capacity	0.17	0.00*	1.99	0.56								
Queue Length 95th (m)	5.0	0.1	121.0	25.0								
Control Delay (s/veh)	4.3	0.1	562.2	38.9								
Lane LOS	A	A	F	E								
Approach Delay (s/veh)	4.3	0.1	562.2	38.9								
Approach LOS				F	E							
Intersection Summary												
Average Delay				73.0								
Intersection Capacity Utilization				99.6%	ICU Level of Service				F			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
20: Street A & Snider Road

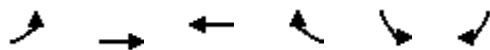
2031 FT AM - SC1
02/25/2026



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	17	31	184	49	26	39
Future Volume (vph)	17	31	184	49	26	39
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.972		0.919	
Flt Protected		0.983			0.980	
Satd. Flow (prot)	0	1687	1668	0	1545	0
Flt Permitted		0.983			0.980	
Satd. Flow (perm)	0	1687	1668	0	1545	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	34	200	53	28	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	52	253	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 29.0%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis
20: Street A & Snider Road

2031 FT AM - SC1
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	31	184	49	26	39
Future Volume (Veh/h)	17	31	184	49	26	39
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	34	200	53	28	42
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	253				297	227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	253				297	227
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				96	95
cM capacity (veh/h)	1312				685	813
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	52	253	70			
Volume Left	18	0	28			
Volume Right	0	53	42			
cSH	1312	1700	756			
Volume to Capacity	0.01	0.15	0.09			
Queue Length 95th (m)	0.3	0.0	2.4			
Control Delay (s/veh)	2.8	0.0	10.2			
Lane LOS	A		B			
Approach Delay (s/veh)	2.8	0.0	10.2			
Approach LOS			B			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			29.0%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Street A & Street C

2031 FT AM - SC1
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	5	223	48	14	51
Future Volume (vph)	91	5	223	48	14	51
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.976		0.894	
Flt Protected		0.955			0.989	
Satd. Flow (prot)	0	1150	1328	0	1286	0
Flt Permitted		0.955			0.989	
Satd. Flow (perm)	0	1150	1328	0	1286	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	5	242	52	15	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	104	294	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 43.3%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT AM - SC1
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	91	5	223	48	14	51
Future Volume (Veh/h)	91	5	223	48	14	51
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	5	242	52	15	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	294				471	268
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	294				471	268
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				97	93
cM capacity (veh/h)	1268				508	771
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	104	294	70			
Volume Left	99	0	15			
Volume Right	0	52	55			
cSH	1268	1700	694			
Volume to Capacity	0.08	0.17	0.10			
Queue Length 95th (m)	2.0	0.0	2.7			
Control Delay (s/veh)	7.7	0.0	10.8			
Lane LOS	A		B			
Approach Delay (s/veh)	7.7	0.0	10.8			
Approach LOS			B			
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			43.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT PM - SC1
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	381	121	21	341	112	49	60	23	152	158	191
Future Volume (vph)	229	381	121	21	341	112	49	60	23	152	158	191
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	140.0		0.0	0.0		0.0	50.0		50.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	20.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.968			0.976			0.948	
Flt Protected		0.985			0.998			0.982			0.985	
Satd. Flow (prot)	0	1277	0	0	1201	0	0	1393	0	0	1358	0
Flt Permitted		0.985			0.998			0.982			0.985	
Satd. Flow (perm)	0	1277	0	0	1201	0	0	1393	0	0	1358	0
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	249	414	132	23	371	122	53	65	25	165	172	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	795	0	0	516	0	0	143	0	0	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	137.6%											
Analysis Period (min)	15											
	ICU Level of Service H											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2031 FT PM - SC1
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	381	121	21	341	112	49	60	23	152	158	191
Future Volume (Veh/h)	229	381	121	21	341	112	49	60	23	152	158	191
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	249	414	132	23	371	122	53	65	25	165	172	208
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	493			546			1750	1517	480	1514	1522	432
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			546			1750	1517	480	1514	1522	432
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	77			98			0	27	96	0	0	67
cM capacity (veh/h)	1071			1023			0	89	586	32	89	624
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	795	516	143	545								
Volume Left	249	23	53	165								
Volume Right	132	122	25	208								
cSH	1071	1023	0	73								
Volume to Capacity	0.23	0.02	Err	7.42								
Queue Length 95th (m)	7.2	0.6	Err	Err								
Control Delay (s/veh)	5.1	0.6	Err	Err								
Lane LOS	A	A	F	F								
Approach Delay (s/veh)	5.1	0.6	Err	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			137.6%	ICU Level of Service				H				
Analysis Period (min)			15									

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	569	81	9	459	113	48	43	10	151	123	213
Future Volume (vph)	387	569	81	9	459	113	48	43	10	151	123	213
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	90.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	30.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.974			0.986			0.941	
Flt Protected		0.982			0.999			0.977			0.985	
Satd. Flow (prot)	0	1412	0	0	1415	0	0	1401	0	0	1348	0
Flt Permitted		0.982			0.999			0.977			0.985	
Satd. Flow (perm)	0	1412	0	0	1415	0	0	1401	0	0	1348	0
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	618	88	10	499	123	52	47	11	164	134	232
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1127	0	0	632	0	0	110	0	0	530	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	162.5%											
Analysis Period (min)	15											
	ICU Level of Service H											

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT PM - SC1
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	569	81	9	459	113	48	43	10	151	123	213
Future Volume (Veh/h)	387	569	81	9	459	113	48	43	10	151	123	213
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	618	88	10	499	123	52	47	11	164	134	232
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	622			706			2384	2146	662	2119	2129	561
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	622			706			2384	2146	662	2119	2129	561
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	56			99			0	0	98	0	0	56
cM capacity (veh/h)	959			892			0	27	462	0	28	527
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1127	632	110	530								
Volume Left	421	10	52	164								
Volume Right	88	123	11	232								
cSH	959	892	0	0								
Volume to Capacity	0.44	0.01	Err	Err								
Queue Length 95th (m)	18.2	0.3	Err	Err								
Control Delay (s/veh)	9.8	0.3	Err	Err								
Lane LOS	A	A	F	F								
Approach Delay (s/veh)	9.8	0.3	Err	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay				Err								
Intersection Capacity Utilization				162.5%	ICU Level of Service				H			
Analysis Period (min)				15								

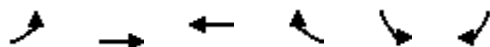
Lanes, Volumes, Timings
20: Street A & Snider Road

2031 FT PM - SC1
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	111	95	63	134	29
Future Volume (vph)	13	111	95	63	134	29
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.946		0.976	
Flt Protected		0.995			0.961	
Satd. Flow (prot)	0	1707	1623	0	1609	0
Flt Permitted		0.995			0.961	
Satd. Flow (perm)	0	1707	1623	0	1609	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	121	103	68	146	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	135	171	0	178	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	34.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
20: Street A & Snider Road

2031 FT PM - SC1
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	111	95	63	134	29
Future Volume (Veh/h)	13	111	95	63	134	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	121	103	68	146	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	171				286	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	171				286	137
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				79	96
cM capacity (veh/h)	1406				697	911
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	135	171	178			
Volume Left	14	0	146			
Volume Right	0	68	32			
cSH	1406	1700	728			
Volume to Capacity	0.00*	0.10	0.24			
Queue Length 95th (m)	0.2	0.0	7.7			
Control Delay (s/veh)	0.9	0.0	11.5			
Lane LOS	A		B			
Approach Delay (s/veh)	0.9	0.0	11.5			
Approach LOS			B			
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization		34.8%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

Lanes, Volumes, Timings
22: Street A & Street C

2031 FT PM - SC1
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	64	10	111	30	67	75
Future Volume (vph)	64	10	111	30	67	75
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.971		0.929	
Flt Protected		0.959			0.977	
Satd. Flow (prot)	0	1155	1321	0	1320	0
Flt Permitted		0.959			0.977	
Satd. Flow (perm)	0	1155	1321	0	1320	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	11	121	33	73	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	81	154	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 37.4%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT PM - SC1
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	10	111	30	67	75
Future Volume (Veh/h)	64	10	111	30	67	75
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	11	121	33	73	82
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	154				289	138
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154				289	138
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				89	91
cM capacity (veh/h)	1426				668	911
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	81	154	155			
Volume Left	70	0	73			
Volume Right	0	33	82			
cSH	1426	1700	777			
Volume to Capacity	0.05	0.09	0.20			
Queue Length 95th (m)	1.2	0.0	5.9			
Control Delay (s/veh)	6.7	0.0	10.8			
Lane LOS	A		B			
Approach Delay (s/veh)	6.7	0.0	10.8			
Approach LOS			B			
Intersection Summary						
Average Delay			5.7			
Intersection Capacity Utilization			37.4%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT SAT - SC1
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	341	326	87	10	295	115	86	81	26	147	201	291
Future Volume (vph)	341	326	87	10	295	115	86	81	26	147	201	291
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	140.0		0.0	0.0		0.0	50.0		50.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	20.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.963			0.982			0.939	
Flt Protected		0.978			0.999			0.978			0.989	
Satd. Flow (prot)	0	1295	0	0	1200	0	0	1396	0	0	1350	0
Flt Permitted		0.978			0.999			0.978			0.989	
Satd. Flow (perm)	0	1295	0	0	1200	0	0	1396	0	0	1350	0
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	371	354	95	11	321	125	93	88	28	160	218	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	820	0	0	457	0	0	209	0	0	694	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	143.3%											
Analysis Period (min)	15											
	ICU Level of Service H											

HCM Unsignalized Intersection Capacity Analysis

2: Snider Road & Main St. E. (Highway 3)

2031 FT SAT - SC1
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	341	326	87	10	295	115	86	81	26	147	201	291
Future Volume (Veh/h)	341	326	87	10	295	115	86	81	26	147	201	291
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	371	354	95	11	321	125	93	88	28	160	218	316
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	446			449			1974	1612	402	1621	1597	384
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446			449			1974	1612	402	1621	1597	384
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	67			99			0	0	96	0	0	52
cM capacity (veh/h)	1114			1111			0	69	649	0	70	664
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	820	457	209	694								
Volume Left	371	11	93	160								
Volume Right	95	125	28	316								
cSH	1114	1111	0	0								
Volume to Capacity	0.33	0.00*	Err	Err								
Queue Length 95th (m)	11.8	0.2	Err	Err								
Control Delay (s/veh)	6.9	0.3	Err	Err								
Lane LOS	A	A	F	F								
Approach Delay (s/veh)	6.9	0.3	Err	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay				Err								
Intersection Capacity Utilization				143.3%	ICU Level of Service				H			
Analysis Period (min)				15								

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	600	58	5	547	120	57	79	11	141	171	317
Future Volume (vph)	579	600	58	5	547	120	57	79	11	141	171	317
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	90.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	30.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.976			0.990			0.932	
Flt Protected		0.977						0.981			0.989	
Satd. Flow (prot)	0	1412	0	0	1419	0	0	1412	0	0	1340	0
Flt Permitted		0.977						0.981			0.989	
Satd. Flow (perm)	0	1412	0	0	1419	0	0	1412	0	0	1340	0
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	629	652	63	5	595	130	62	86	12	153	186	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1344	0	0	730	0	0	160	0	0	684	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	194.7%											
Analysis Period (min)	15											
ICU Level of Service H												

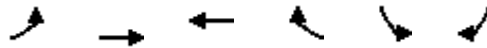
HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT SAT - SC1
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	579	600	58	5	547	120	57	79	11	141	171	317
Future Volume (Veh/h)	579	600	58	5	547	120	57	79	11	141	171	317
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	629	652	63	5	595	130	62	86	12	153	186	345
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	725			715			3050	2677	684	2667	2643	660
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	725			715			3050	2677	684	2667	2643	660
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	28			99			0	0	97	0	0	25
cM capacity (veh/h)	878			885			0	6	449	0	7	463
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1344	730	160	684								
Volume Left	629	5	62	153								
Volume Right	63	130	12	345								
cSH	878	885	0	0								
Volume to Capacity	0.72	0.00*	Err	Err								
Queue Length 95th (m)	50.4	0.1	Err	Err								
Control Delay (s/veh)	18.7	0.2	Err	Err								
Lane LOS	C	A	F	F								
Approach Delay (s/veh)	18.7	0.2	Err	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay				Err								
Intersection Capacity Utilization				194.7%	ICU Level of Service				H			
Analysis Period (min)				15								
* Value less than 0.01.												

Lanes, Volumes, Timings
20: Street A & Snider Road

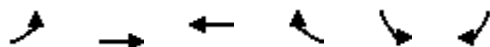
2031 FT SAT - SC1
02/25/2026



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	97	142	93	144	39
Future Volume (vph)	19	97	142	93	144	39
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.947		0.972	
Flt Protected		0.992			0.962	
Satd. Flow (prot)	0	1702	1625	0	1604	0
Flt Permitted		0.992			0.962	
Satd. Flow (perm)	0	1702	1625	0	1604	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	105	154	101	157	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	126	255	0	199	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 41.1%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 20: Street A & Snider Road

2031 FT SAT - SC1
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	97	142	93	144	39
Future Volume (Veh/h)	19	97	142	93	144	39
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	105	154	101	157	42
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	255				352	205
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	255				352	205
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				75	95
cM capacity (veh/h)	1310				636	836
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	126	255	199			
Volume Left	21	0	157			
Volume Right	0	101	42			
cSH	1310	1700	670			
Volume to Capacity	0.02	0.15	0.30			
Queue Length 95th (m)	0.4	0.0	9.9			
Control Delay (s/veh)	1.4	0.0	12.6			
Lane LOS	A		B			
Approach Delay (s/veh)	1.4	0.0	12.6			
Approach LOS			B			
Intersection Summary						
Average Delay			4.6			
Intersection Capacity Utilization		41.1%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
22: Street A & Street C

2031 FT SAT - SC1
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	96	8	165	36	63	108
Future Volume (vph)	96	8	165	36	63	108
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.976		0.915	
Flt Protected		0.956			0.982	
Satd. Flow (prot)	0	1151	1328	0	1306	0
Flt Permitted		0.956			0.982	
Satd. Flow (perm)	0	1151	1328	0	1306	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	9	179	39	68	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	113	218	0	185	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 46.7%						
ICU Level of Service A						
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT SAT - SC1
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	96	8	165	36	63	108
Future Volume (Veh/h)	96	8	165	36	63	108
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	104	9	179	39	68	117
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	218				416	199
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	218				416	199
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				88	86
cM capacity (veh/h)	1352				548	843
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	113	218	185			
Volume Left	104	0	68			
Volume Right	0	39	117			
cSH	1352	1700	703			
Volume to Capacity	0.08	0.13	0.26			
Queue Length 95th (m)	2.0	0.0	8.4			
Control Delay (s/veh)	7.3	0.0	11.9			
Lane LOS	A		B			
Approach Delay (s/veh)	7.3	0.0	11.9			
Approach LOS			B			
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			46.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT AM - SC2
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	222	40	5	334	19	192	63	17	21	35	81
Future Volume (vph)	96	222	40	5	334	19	192	63	17	21	35	81
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	140.0		0.0	0.0		0.0	50.0		50.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	20.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.993			0.992			0.920	
Flt Protected		0.987			0.999			0.966			0.992	
Satd. Flow (prot)	0	1267	0	0	1183	0	0	1393	0	0	1327	0
Flt Permitted		0.987			0.999			0.966			0.992	
Satd. Flow (perm)	0	1267	0	0	1183	0	0	1393	0	0	1327	0
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	104	241	43	5	363	21	209	68	18	23	38	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	388	0	0	389	0	0	295	0	0	149	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	85.1%											
Analysis Period (min)	15											
	ICU Level of Service E											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2031 FT AM - SC2
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	222	40	5	334	19	192	63	17	21	35	81
Future Volume (Veh/h)	96	222	40	5	334	19	192	63	17	21	35	81
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	104	241	43	5	363	21	209	68	18	23	38	88
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	384			284			961	865	263	906	876	374
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384			284			961	865	263	906	876	374
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			0	74	98	88	85	87
cM capacity (veh/h)	1174			1278			170	265	776	188	261	673
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	388	389	295	149								
Volume Left	104	5	209	23								
Volume Right	43	21	18	88								
cSH	1174	1278	195	374								
Volume to Capacity	0.09	0.00*	1.51	0.40								
Queue Length 95th (m)	2.3	0.1	147.8	14.9								
Control Delay (s/veh)	2.9	0.1	299.5	20.9								
Lane LOS	A	A	F	C								
Approach Delay (s/veh)	2.9	0.1	299.5	20.9								
Approach LOS			F	C								
Intersection Summary												
Average Delay				75.9								
Intersection Capacity Utilization				85.1%	ICU Level of Service				E			
Analysis Period (min)				15								
* Value less than 0.01.												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	349	27	3	592	13	0	0	8	0	0	79
Future Volume (vph)	161	349	27	3	592	13	0	0	8	0	0	79
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	90.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.997				0.865			0.865
Flt Protected		0.985										
Satd. Flow (prot)	0	1422	0	0	1450	0	0	0	1258	0	0	1258
Flt Permitted		0.985										
Satd. Flow (perm)	0	1422	0	0	1450	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	379	29	3	643	14	0	0	9	0	0	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	660	0	0	0	9	0	0	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	84.8%											
Analysis Period (min)	15											
	ICU Level of Service E											

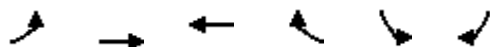
HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT AM - SC2
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	349	27	3	592	13	0	0	8	0	0	79
Future Volume (Veh/h)	161	349	27	3	592	13	0	0	8	0	0	79
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	175	379	29	3	643	14	0	0	9	0	0	86
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	657			408			1486	1407	394	1409	1414	650
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	657			408			1486	1407	394	1409	1414	650
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	81			100			100	100	99	100	100	82
cM capacity (veh/h)	931			1151			72	113	655	98	111	469
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	583	660	9	86								
Volume Left	175	3	0	0								
Volume Right	29	14	9	86								
cSH	931	1151	655	469								
Volume to Capacity	0.19	0.00*	0.01	0.18								
Queue Length 95th (m)	5.5	0.1	0.3	5.3								
Control Delay (s/veh)	4.6	0.1	10.6	14.4								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	4.6	0.1	10.6	14.4								
Approach LOS			B	B								
Intersection Summary												
Average Delay				3.0								
Intersection Capacity Utilization				84.8%	ICU Level of Service				E			
Analysis Period (min)				15								
* Value less than 0.01.												

Lanes, Volumes, Timings
20: Street A & Snider Road

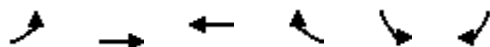
2031 FT AM - SC2
02/25/2026



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	97	31	179	119	27	70
Future Volume (vph)	97	31	179	119	27	70
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.946		0.902	
Flt Protected		0.964			0.986	
Satd. Flow (prot)	0	1654	1623	0	1526	0
Flt Permitted		0.964			0.986	
Satd. Flow (perm)	0	1654	1623	0	1526	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	34	195	129	29	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	139	324	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	42.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 20: Street A & Snider Road

2031 FT AM - SC2
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	97	31	179	119	27	70
Future Volume (Veh/h)	97	31	179	119	27	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	34	195	129	29	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	324				504	260
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324				504	260
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				94	90
cM capacity (veh/h)	1236				483	779
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	139	324	105			
Volume Left	105	0	29			
Volume Right	0	129	76			
cSH	1236	1700	666			
Volume to Capacity	0.08	0.19	0.16			
Queue Length 95th (m)	2.2	0.0	4.5			
Control Delay (s/veh)	6.4	0.0	11.4			
Lane LOS	A		B			
Approach Delay (s/veh)	6.4	0.0	11.4			
Approach LOS			B			
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			42.0%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Street A & Street C

2031 FT AM - SC2
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	60	247	5	14	21
Future Volume (vph)	12	60	247	5	14	21
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.998		0.918	
Flt Protected		0.992			0.981	
Satd. Flow (prot)	0	1194	1358	0	1309	0
Flt Permitted		0.992			0.981	
Satd. Flow (perm)	0	1194	1358	0	1309	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	65	268	5	15	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	78	273	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 30.8%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT AM - SC2
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	60	247	5	14	21
Future Volume (Veh/h)	12	60	247	5	14	21
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	65	268	5	15	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	273				362	271
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	273				362	271
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	97
cM capacity (veh/h)	1290				631	768
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	78	273	38			
Volume Left	13	0	15			
Volume Right	0	5	23			
cSH	1290	1700	708			
Volume to Capacity	0.01	0.16	0.05			
Queue Length 95th (m)	0.2	0.0	1.4			
Control Delay (s/veh)	1.4	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	1.4	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			30.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT PM - SC2

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	312	121	19	340	112	96	102	23	303	280	191
Future Volume (vph)	229	312	121	19	340	112	96	102	23	303	280	191
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	140.0		0.0	0.0		0.0	50.0		50.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	20.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.968			0.986			0.967	
Flt Protected		0.983			0.998			0.979			0.981	
Satd. Flow (prot)	0	1281	0	0	1201	0	0	1403	0	0	1379	0
Flt Permitted		0.983			0.998			0.979			0.981	
Satd. Flow (perm)	0	1281	0	0	1201	0	0	1403	0	0	1379	0
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	249	339	132	21	370	122	104	111	25	329	304	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	720	0	0	513	0	0	240	0	0	841	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	157.9%											
Analysis Period (min)	15											
ICU Level of Service H												

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2031 FT PM - SC2
02/25/2026

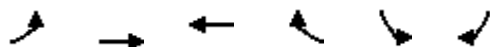
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	312	121	19	340	112	96	102	23	303	280	191
Future Volume (Veh/h)	229	312	121	19	340	112	96	102	23	303	280	191
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	249	339	132	21	370	122	104	111	25	329	304	208
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	492			471			1736	1437	405	1457	1442	431
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	492			471			1736	1437	405	1457	1442	431
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	77			98			0	0	96	0	0	67
cM capacity (veh/h)	1071			1091			0	100	646	0	100	624
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	720	513	240	841								
Volume Left	249	21	104	329								
Volume Right	132	122	25	208								
cSH	1071	1091	0	0								
Volume to Capacity	0.23	0.02	Err	Err								
Queue Length 95th (m)	7.2	0.5	Err	Err								
Control Delay (s/veh)	5.2	0.6	Err	Err								
Lane LOS	A	A	F	F								
Approach Delay (s/veh)	5.2	0.6	Err	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay				Err								
Intersection Capacity Utilization				157.9%	ICU Level of Service				H			
Analysis Period (min)				15								

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	569	81	8	506	113	0	0	10	0	0	213
Future Volume (vph)	387	569	81	8	506	113	0	0	10	0	0	213
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	90.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.976				0.865			0.865
Flt Protected		0.982			0.999							
Satd. Flow (prot)	0	1412	0	0	1418	0	0	0	1258	0	0	1258
Flt Permitted		0.982			0.999							
Satd. Flow (perm)	0	1412	0	0	1418	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	618	88	9	550	123	0	0	11	0	0	232
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1127	0	0	682	0	0	0	11	0	0	232
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	122.2%											
Analysis Period (min)	15											
	ICU Level of Service H											

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT PM - SC2
02/25/2026

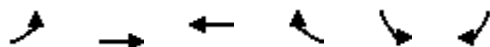
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	569	81	8	506	113	0	0	10	0	0	213
Future Volume (Veh/h)	387	569	81	8	506	113	0	0	10	0	0	213
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	618	88	9	550	123	0	0	11	0	0	232
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	673			706			2366	2195	662	2145	2178	612
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	673			706			2366	2195	662	2145	2178	612
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	54			99			100	100	98	100	100	53
cM capacity (veh/h)	918			892			8	24	462	22	25	493
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1127	682	11	232								
Volume Left	421	9	0	0								
Volume Right	88	123	11	232								
cSH	918	892	462	493								
Volume to Capacity	0.46	0.01	0.02	0.47								
Queue Length 95th (m)	19.6	0.2	0.6	19.8								
Control Delay (s/veh)	10.6	0.3	13.0	18.6								
Lane LOS	B	A	B	C								
Approach Delay (s/veh)	10.6	0.3	13.0	18.6								
Approach LOS				B	C							
Intersection Summary												
Average Delay				8.1								
Intersection Capacity Utilization				122.2%	ICU Level of Service				H			
Analysis Period (min)				15								



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	54	90	92	100	154	92
Future Volume (vph)	54	90	92	100	154	92
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.930		0.949	
Flt Protected		0.982			0.970	
Satd. Flow (prot)	0	1685	1596	0	1579	0
Flt Permitted		0.982			0.970	
Satd. Flow (perm)	0	1685	1596	0	1579	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	98	100	109	167	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	157	209	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	45.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 20: Street A & Snider Road

2031 FT PM - SC2
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	90	92	100	154	92
Future Volume (Veh/h)	54	90	92	100	154	92
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	98	100	109	167	100
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	209				371	155
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209				371	155
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				72	89
cM capacity (veh/h)	1362				603	891
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	157	209	267			
Volume Left	59	0	167			
Volume Right	0	109	100			
cSH	1362	1700	686			
Volume to Capacity	0.04	0.12	0.39			
Queue Length 95th (m)	1.1	0.0	14.8			
Control Delay (s/veh)	3.1	0.0	13.6			
Lane LOS	A		B			
Approach Delay (s/veh)	3.1	0.0	13.6			
Approach LOS			B			
Intersection Summary						
Average Delay			6.5			
Intersection Capacity Utilization		45.7%		ICU Level of Service		A
Analysis Period (min)		15				

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	41	172	5	41	11
Future Volume (vph)	22	41	172	5	41	11
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.996		0.972	
Flt Protected		0.983			0.962	
Satd. Flow (prot)	0	1183	1355	0	1360	0
Flt Permitted		0.983			0.962	
Satd. Flow (perm)	0	1183	1355	0	1360	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	45	187	5	45	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	69	192	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	31.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT PM - SC2
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	41	172	5	41	11
Future Volume (Veh/h)	22	41	172	5	41	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	45	187	5	45	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	192				283	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192				283	190
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	99
cM capacity (veh/h)	1381				695	852
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	69	192	57			
Volume Left	24	0	45			
Volume Right	0	5	12			
cSH	1381	1700	723			
Volume to Capacity	0.02	0.11	0.08			
Queue Length 95th (m)	0.4	0.0	2.0			
Control Delay (s/veh)	2.8	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	2.8	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			31.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT SAT - SC2
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	341	256	87	10	295	115	143	159	26	288	372	291
Future Volume (vph)	341	256	87	10	295	115	143	159	26	288	372	291
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	140.0		0.0	0.0		0.0	50.0		50.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	20.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.963			0.989			0.959	
Flt Protected		0.976			0.999			0.979			0.985	
Satd. Flow (prot)	0	1304	0	0	1200	0	0	1408	0	0	1373	0
Flt Permitted		0.976			0.999			0.979			0.985	
Satd. Flow (perm)	0	1304	0	0	1200	0	0	1408	0	0	1373	0
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	371	278	95	11	321	125	155	173	28	313	404	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	744	0	0	457	0	0	356	0	0	1033	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	166.2%											
Analysis Period (min)	15											
	ICU Level of Service H											

HCM Unsignalized Intersection Capacity Analysis 2: Snider Road & Main St. E. (Highway 3)

2031 FT SAT - SC2
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	341	256	87	10	295	115	143	159	26	288	372	291
Future Volume (Veh/h)	341	256	87	10	295	115	143	159	26	288	372	291
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	371	278	95	11	321	125	155	173	28	313	404	316
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	446			373			1991	1536	326	1588	1521	384
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446			373			1991	1536	326	1588	1521	384
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	67			99			0	0	96	0	0	52
cM capacity (veh/h)	1114			1185			0	77	716	0	78	664
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	744	457	356	1033								
Volume Left	371	11	155	313								
Volume Right	95	125	28	316								
cSH	1114	1185	0	0								
Volume to Capacity	0.33	0.00*	Err	Err								
Queue Length 95th (m)	11.8	0.2	Err	Err								
Control Delay (s/veh)	7.0	0.3	Err	Err								
Lane LOS	A	A	F	F								
Approach Delay (s/veh)	7.0	0.3	Err	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			166.2%		ICU Level of Service				H			
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	600	58	5	604	120	0	0	11	0	0	317
Future Volume (vph)	579	600	58	5	604	120	0	0	11	0	0	317
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	90.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.978				0.865			0.865
Flt Protected		0.977										
Satd. Flow (prot)	0	1412	0	0	1422	0	0	0	1258	0	0	1258
Flt Permitted		0.977										
Satd. Flow (perm)	0	1412	0	0	1422	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	629	652	63	5	657	130	0	0	12	0	0	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1344	0	0	792	0	0	0	12	0	0	345
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	143.1%											
Analysis Period (min)	15											
ICU Level of Service H												

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT SAT - SC2
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	579	600	58	5	604	120	0	0	11	0	0	317
Future Volume (Veh/h)	579	600	58	5	604	120	0	0	11	0	0	317
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	629	652	63	5	657	130	0	0	12	0	0	345
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	787			715			3019	2739	684	2686	2705	722
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	787			715			3019	2739	684	2686	2705	722
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	24			99			100	100	97	100	100	19
cM capacity (veh/h)	832			885			1	5	449	5	5	427
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1344	792	12	345								
Volume Left	629	5	0	0								
Volume Right	63	130	12	345								
cSH	832	885	449	427								
Volume to Capacity	0.76	0.00*	0.03	0.81								
Queue Length 95th (m)	57.8	0.1	0.7	58.9								
Control Delay (s/veh)	21.4	0.2	13.2	40.5								
Lane LOS	C	A	B	E								
Approach Delay (s/veh)	21.4	0.2	13.2	40.5								
Approach LOS			B	E								
Intersection Summary												
Average Delay				17.3								
Intersection Capacity Utilization				143.1%	ICU Level of Service				H			
Analysis Period (min)				15								

* Value less than 0.01.

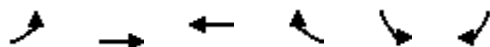
Lanes, Volumes, Timings
20: Street A & Snider Road

2031 FT SAT - SC2
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	97	70	138	141	170	136
Future Volume (vph)	97	70	138	141	170	136
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.932		0.940	
Flt Protected		0.972			0.973	
Satd. Flow (prot)	0	1668	1599	0	1569	0
Flt Permitted		0.972			0.973	
Satd. Flow (perm)	0	1668	1599	0	1569	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	76	150	153	185	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	181	303	0	333	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 56.3%				ICU Level of Service B		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 20: Street A & Snider Road

2031 FT SAT - SC2
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	97	70	138	141	170	136
Future Volume (Veh/h)	97	70	138	141	170	136
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	76	150	153	185	148
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	303				513	227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	303				513	227
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				61	82
cM capacity (veh/h)	1258				478	813
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	181	303	333			
Volume Left	105	0	185			
Volume Right	0	153	148			
cSH	1258	1700	585			
Volume to Capacity	0.08	0.18	0.57			
Queue Length 95th (m)	2.2	0.0	28.5			
Control Delay (s/veh)	5.0	0.0	19.0			
Lane LOS	A		C			
Approach Delay (s/veh)	5.0	0.0	19.0			
Approach LOS			C			
Intersection Summary						
Average Delay			8.8			
Intersection Capacity Utilization			56.3%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Street A & Street C

2031 FT SAT - SC2
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	71	259	5	29	11
Future Volume (vph)	19	71	259	5	29	11
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.963	
Flt Protected		0.989			0.965	
Satd. Flow (prot)	0	1191	1358	0	1351	0
Flt Permitted		0.989			0.965	
Satd. Flow (perm)	0	1191	1358	0	1351	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	77	282	5	32	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	98	287	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 39.8%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT SAT - SC2
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	71	259	5	29	11
Future Volume (Veh/h)	19	71	259	5	29	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	77	282	5	32	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	287				404	285
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	287				404	285
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				95	98
cM capacity (veh/h)	1275				593	754
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	98	287	44			
Volume Left	21	0	32			
Volume Right	0	5	12			
cSH	1275	1700	630			
Volume to Capacity	0.02	0.17	0.07			
Queue Length 95th (m)	0.4	0.0	1.8			
Control Delay (s/veh)	1.8	0.0	11.1			
Lane LOS	A		B			
Approach Delay (s/veh)	1.8	0.0	11.1			
Approach LOS			B			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			39.8%	ICU Level of Service		A
Analysis Period (min)			15			

APPENDIX M

Signal Warrant for Main Street East and Snider Road

**CROZIER****TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
PER OTM BOOK 12****Project and Scenario Summary**

Project	806 Killaly Street E	Project Number	2578-6905
Horizon	2031	Date	2/25/2026
		Analyst	AD

Study Intersection Summary

Major Street	Highway 3	Direction	East/West
Minor Street	Snider Road	Direction	North/South

Intersection Details for Warrant Parameters

Flow Conditions	Free Flow (Rural)	Number of Lanes	1
T-Intersection?	No	Intersection Type	New

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

Input Volumes and Average Hourly Volume Determination

Peak Hour	Major: Highway 3						Minor: Snider Road						Pedestrians Crossing Major Street
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
AM	96	222	40	5	334	19	192	63	17	21	35	81	0
PM	229	312	121	19	340	112	96	102	23	303	280	191	0
AHV	81	134	40	6	169	33	72	41	10	81	79	68	0

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then $AHV = (Peak1phv + Peak2phv)/4$. In only the case that one estimate is available then $AHV = Peak1phv/2$ or $Peak2phv/2$.

Justification 7 - OTM Book 12

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or More Lane Highways		Compliance		
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	Sectional		Entire Percentage
						Numerical	Percentage	
1. Minimum Vehicular Volume	A. Vehicle Volume, All Approaches (Avg. Hour)	480	720	600	900	814	169.6%	169.6%
	B. Vehicle Volume, Along Minor Streets (Avg. Hour)	120	170	120	170	351	292.5%	
2. Delay to Cross Traffic	A. Vehicle Volume, Major Street (Avg. Hour)	480	720	600	900	463	96.5%	96.5%
	B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour)	50	75	50	75	232	464.0%	
Applicable Threshold		X						

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.

Existing Intersections Require 120% Justification

New/Proposed Intersections Require 150% Justification

Percent Compliance:
Percentage Required to be Justified:

169.6%
150%

Signal Justification 7 Met:

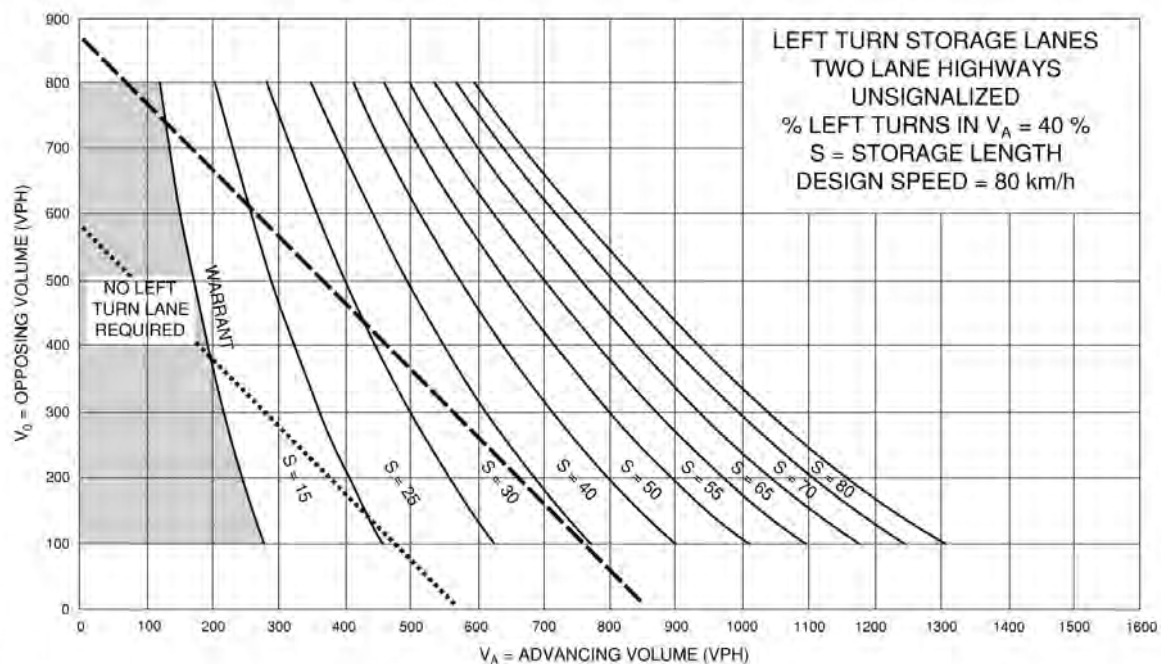
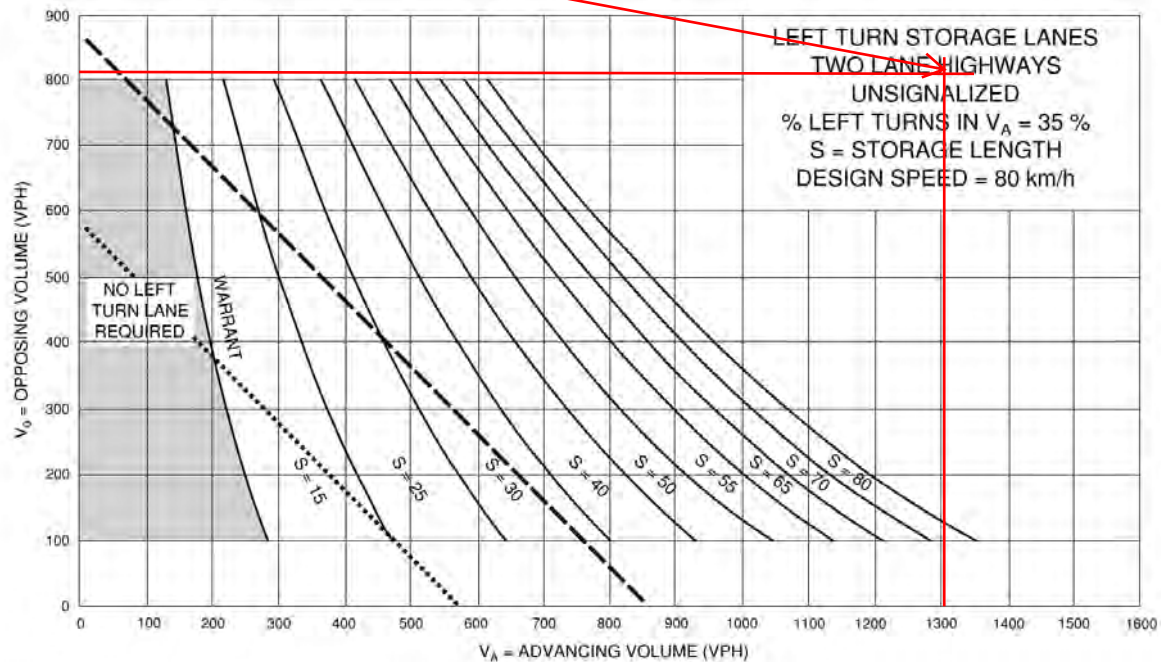
☒ Yes

☐ No

APPENDIX N

Left-Turn Lane Warrant

Left-turn lane warranted at intersection of
Main Street E & Street C/Commercial Access

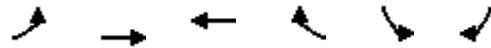
Exhibit-9A-18

APPENDIX O

Internal Intersection Detailed Capacity Analysis

Lanes, Volumes, Timings
20: Street A & Snider Road

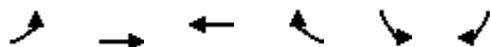
2031 FT AM - Internal Intersections
02/25/2026



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	97	31	179	119	27	70
Future Volume (vph)	97	31	179	119	27	70
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.946		0.902	
Flt Protected		0.964			0.986	
Satd. Flow (prot)	0	1654	1623	0	1526	0
Flt Permitted		0.964			0.986	
Satd. Flow (perm)	0	1654	1623	0	1526	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	34	195	129	29	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	139	324	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.2	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 42.0%			ICU Level of Service A			
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 20: Street A & Snider Road

2031 FT AM - Internal Intersections
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	97	31	179	119	27	70
Future Volume (Veh/h)	97	31	179	119	27	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	34	195	129	29	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	324				504	260
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324				504	260
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				94	90
cM capacity (veh/h)	1236				483	779
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	139	324	105			
Volume Left	105	0	29			
Volume Right	0	129	76			
cSH	1236	1700	666			
Volume to Capacity	0.08	0.19	0.16			
Queue Length 95th (m)	2.2	0.0	4.5			
Control Delay (s/veh)	6.4	0.0	11.4			
Lane LOS	A		B			
Approach Delay (s/veh)	6.4	0.0	11.4			
Approach LOS			B			
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization		42.0%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
21: Street E & Street A

2031 FT AM - Internal Intersections
02/25/2026

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↰	↰	
Traffic Volume (vph)	32	38	8	144	39	3
Future Volume (vph)	32	38	8	144	39	3
Ideal Flow (vphpl)	1388	1351	1504	1228	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.927				0.991	
Flt Protected				0.997	0.955	
Satd. Flow (prot)	1261	0	0	1200	1376	0
Flt Permitted				0.997	0.955	
Satd. Flow (perm)	1261	0	0	1200	1376	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	262.1			219.6	518.5	
Travel Time (s)	23.6			19.8	46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	41	9	157	42	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	76	0	0	166	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.48	1.53	1.34	1.71	1.37	1.37
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 21: Street E & Street A

2031 FT AM - Internal Intersections
02/25/2026

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	32	38	8	144	39	3
Future Volume (Veh/h)	32	38	8	144	39	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	41	9	157	42	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			76		231	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			76		231	56
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		94	100
cM capacity (veh/h)			1523		753	1011
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	76	166	45			
Volume Left	0	9	42			
Volume Right	41	0	3			
cSH	1700	1523	766			
Volume to Capacity	0.04	0.00*	0.06			
Queue Length 95th (m)	0.0	0.1	1.5			
Control Delay (s/veh)	0.0	0.4	10.0			
Lane LOS		A	A			
Approach Delay (s/veh)	0.0	0.4	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization		29.1%		ICU Level of Service	A	
Analysis Period (min)		15				
* Value less than 0.01.						

Lanes, Volumes, Timings
22: Street A & Street C

2031 FT AM - Internal Intersections
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	60	247	5	14	21
Future Volume (vph)	12	60	247	5	14	21
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.998		0.918	
Flt Protected		0.992			0.981	
Satd. Flow (prot)	0	1194	1358	0	1309	0
Flt Permitted		0.992			0.981	
Satd. Flow (perm)	0	1194	1358	0	1309	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	65	268	5	15	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	78	273	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 30.8%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT AM - Internal Intersections
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	60	247	5	14	21
Future Volume (Veh/h)	12	60	247	5	14	21
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	65	268	5	15	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	273				362	271
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	273				362	271
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	97
cM capacity (veh/h)	1290				631	768
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	78	273	38			
Volume Left	13	0	15			
Volume Right	0	5	23			
cSH	1290	1700	708			
Volume to Capacity	0.01	0.16	0.05			
Queue Length 95th (m)	0.2	0.0	1.4			
Control Delay (s/veh)	1.4	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	1.4	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			30.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
23: Street D & Street A

2031 FT AM - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	96	9	1	268	0	38	0	1	0	0	50
Future Volume (vph)	11	96	9	1	268	0	38	0	1	0	0	50
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989						0.997			0.865	
Flt Protected		0.995						0.953				
Satd. Flow (prot)	0	1431	0	0	1454	0	0	1381	0	0	1258	0
Flt Permitted		0.995						0.953				
Satd. Flow (perm)	0	1431	0	0	1454	0	0	1381	0	0	1258	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		402.0			127.1			338.9			91.6	
Travel Time (s)		36.2			11.4			30.5			8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	104	10	1	291	0	41	0	1	0	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	292	0	0	42	0	0	54	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.4%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

23: Street D & Street A

2031 FT AM - Internal Intersections

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	96	9	1	268	0	38	0	1	0	0	50
Future Volume (Veh/h)	11	96	9	1	268	0	38	0	1	0	0	50
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	104	10	1	291	0	41	0	1	0	0	54
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	291			114			480	426	109	427	431	291
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	291			114			480	426	109	427	431	291
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			91	100	100	100	100	93
cM capacity (veh/h)	1271			1475			457	515	945	533	512	748
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	126	292	42	54								
Volume Left	12	1	41	0								
Volume Right	10	0	1	54								
cSH	1271	1475	462	748								
Volume to Capacity	0.00*	0.00*	0.09	0.07								
Queue Length 95th (m)	0.2	0.0	2.4	1.9								
Control Delay (s/veh)	0.8	0.0	13.6	10.2								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.8	0.0	13.6	10.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay				2.4								
Intersection Capacity Utilization				34.4%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
24: Street F & Street A

2031 FT AM - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	10	25	6	54	2	36	0	2	4	18	60
Future Volume (vph)	10	10	25	6	54	2	36	0	2	4	18	60
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.926			0.996			0.993			0.901	
Flt Protected		0.989			0.995			0.955			0.998	
Satd. Flow (prot)	0	1332	0	0	1441	0	0	1379	0	0	1307	0
Flt Permitted		0.989			0.995			0.955			0.998	
Satd. Flow (perm)	0	1332	0	0	1441	0	0	1379	0	0	1307	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		219.6			248.0			514.5			93.0	
Travel Time (s)		19.8			22.3			46.3			8.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	11	27	7	59	2	39	0	2	4	20	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	68	0	0	41	0	0	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	22.2%											
Analysis Period (min)	15											
ICU Level of Service A												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	25	6	54	2	36	0	2	4	18	60
Future Volume (Veh/h)	10	10	25	6	54	2	36	0	2	4	18	60
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	11	27	7	59	2	39	0	2	4	20	65
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	61			38			196	122	25	123	134	60
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	61			38			196	122	25	123	134	60
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			94	100	100	100	97	94
cM capacity (veh/h)	1542			1572			694	760	1052	843	748	1005
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	49	68	41	89								
Volume Left	11	7	39	4								
Volume Right	27	2	2	65								
cSH	1542	1572	705	926								
Volume to Capacity	0.00*	0.00*	0.06	0.10								
Queue Length 95th (m)	0.2	0.1	1.5	2.5								
Control Delay (s/veh)	1.7	0.8	10.4	9.3								
Lane LOS	A	A	B	A								
Approach Delay (s/veh)	1.7	0.8	10.4	9.3								
Approach LOS			B	A								
Intersection Summary												
Average Delay				5.6								
Intersection Capacity Utilization				22.2%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
25: Street G & Street A

2031 FT AM - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	18	9	6	12	4	26	7	6	5	10	22
Future Volume (vph)	1	18	9	6	12	4	26	7	6	5	10	22
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.956			0.977			0.978			0.919	
Flt Protected		0.998			0.986			0.968			0.994	
Satd. Flow (prot)	0	1387	0	0	1401	0	0	1376	0	0	1328	0
Flt Permitted		0.998			0.986			0.968			0.994	
Satd. Flow (perm)	0	1387	0	0	1401	0	0	1376	0	0	1328	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		248.0			186.1			373.2			119.7	
Travel Time (s)		22.3			16.7			33.6			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	20	10	7	13	4	28	8	7	5	11	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	31	0	0	24	0	0	43	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	21.0%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

25: Street G & Street A

2031 FT AM - Internal Intersections

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	18	9	6	12	4	26	7	6	5	10	22
Future Volume (Veh/h)	1	18	9	6	12	4	26	7	6	5	10	22
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	20	10	7	13	4	28	8	7	5	11	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	17			30			86	58	25	67	61	15
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	17			30			86	58	25	67	61	15
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	99	99	99	99	98
cM capacity (veh/h)	1600			1583			868	829	1051	910	826	1065
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	31	24	43	40								
Volume Left	1	7	28	5								
Volume Right	10	4	7	24								
cSH	1600	1583	885	967								
Volume to Capacity	0.00*	0.00*	0.05	0.04								
Queue Length 95th (m)	0.0	0.1	1.2	1.0								
Control Delay (s/veh)	0.2	2.1	9.3	8.9								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	0.2	2.1	9.3	8.9								
Approach LOS			A	A								
Intersection Summary												
Average Delay				5.9								
Intersection Capacity Utilization				21.0%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
26: Street D & Street B

2031 FT AM - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	7	6	11	39	0	25	6	8	0	16	33
Future Volume (vph)	9	7	6	11	39	0	25	6	8	0	16	33
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962						0.972			0.908	
Flt Protected		0.980			0.989			0.970				
Satd. Flow (prot)	0	1371	0	0	1438	0	0	1371	0	0	1320	0
Flt Permitted		0.980			0.989			0.970				
Satd. Flow (perm)	0	1371	0	0	1438	0	0	1371	0	0	1320	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		414.9			122.4			415.2			338.9	
Travel Time (s)		37.3			11.0			37.4			30.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	8	7	12	42	0	27	7	9	0	17	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	54	0	0	43	0	0	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	19.9%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

26: Street D & Street B

2031 FT AM - Internal Intersections

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	7	6	11	39	0	25	6	8	0	16	33
Future Volume (Veh/h)	9	7	6	11	39	0	25	6	8	0	16	33
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	8	7	12	42	0	27	7	9	0	17	36
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	42			15			142	98	12	110	101	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	42			15			142	98	12	110	101	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	99	99	100	98	97
cM capacity (veh/h)	1567			1603			777	782	1069	846	778	1029
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	25	54	43	53								
Volume Left	10	12	27	0								
Volume Right	7	0	9	36								
cSH	1567	1603	825	932								
Volume to Capacity	0.00*	0.00*	0.05	0.06								
Queue Length 95th (m)	0.2	0.2	1.3	1.4								
Control Delay (s/veh)	3.0	1.7	9.6	9.1								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	3.0	1.7	9.6	9.1								
Approach LOS			A	A								
Intersection Summary												
Average Delay				6.0								
Intersection Capacity Utilization				19.9%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

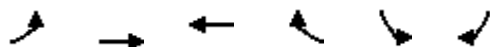
Lanes, Volumes, Timings
20: Street A & Snider Road

2031 FT PM - Internal Intersections
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	54	90	92	100	154	92
Future Volume (vph)	54	90	92	100	154	92
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.930		0.949	
Flt Protected		0.982			0.970	
Satd. Flow (prot)	0	1685	1596	0	1579	0
Flt Permitted		0.982			0.970	
Satd. Flow (perm)	0	1685	1596	0	1579	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	98	100	109	167	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	157	209	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.2	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	45.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 20: Street A & Snider Road

2031 FT PM - Internal Intersections
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	90	92	100	154	92
Future Volume (Veh/h)	54	90	92	100	154	92
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	98	100	109	167	100
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	209				371	155
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209				371	155
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				72	89
cM capacity (veh/h)	1362				603	891
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	157	209	267			
Volume Left	59	0	167			
Volume Right	0	109	100			
cSH	1362	1700	686			
Volume to Capacity	0.04	0.12	0.39			
Queue Length 95th (m)	1.1	0.0	14.8			
Control Delay (s/veh)	3.1	0.0	13.6			
Lane LOS	A		B			
Approach Delay (s/veh)	3.1	0.0	13.6			
Approach LOS			B			
Intersection Summary						
Average Delay			6.5			
Intersection Capacity Utilization			45.7%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
21: Street E & Street A

2031 FT PM - Internal Intersections

02/25/2026

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	173	84	3	101	26	2
Future Volume (vph)	173	84	3	101	26	2
Ideal Flow (vphpl)	1388	1351	1504	1228	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.956				0.991	
Flt Protected				0.999	0.955	
Satd. Flow (prot)	1301	0	0	1203	1376	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1301	0	0	1203	1376	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	262.1			219.6	518.5	
Travel Time (s)	23.6			19.8	46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	91	3	110	28	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	279	0	0	113	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.48	1.53	1.34	1.71	1.37	1.37
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 21: Street E & Street A

2031 FT PM - Internal Intersections
02/25/2026

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	173	84	3	101	26	2
Future Volume (Veh/h)	173	84	3	101	26	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	188	91	3	110	28	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			279	350		234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			279	350		234
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			100	96		100
cM capacity (veh/h)			1284	646		806
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	279	113	30			
Volume Left	0	3	28			
Volume Right	91	0	2			
cSH	1700	1284	655			
Volume to Capacity	0.16	0.00*	0.05			
Queue Length 95th (m)	0.0	0.1	1.2			
Control Delay (s/veh)	0.0	0.2	10.8			
Lane LOS	A		B			
Approach Delay (s/veh)	0.0	0.2	10.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			29.5%	ICU Level of Service		A
Analysis Period (min)			15			
* Value less than 0.01.						

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	41	172	5	41	11
Future Volume (vph)	22	41	172	5	41	11
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.972	
Flt Protected		0.983			0.962	
Satd. Flow (prot)	0	1183	1355	0	1360	0
Flt Permitted		0.983			0.962	
Satd. Flow (perm)	0	1183	1355	0	1360	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	45	187	5	45	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	69	192	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 31.8%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT PM - Internal Intersections
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	41	172	5	41	11
Future Volume (Veh/h)	22	41	172	5	41	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	45	187	5	45	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	192				283	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192				283	190
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	99
cM capacity (veh/h)	1381				695	852
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	69	192	57			
Volume Left	24	0	45			
Volume Right	0	5	12			
cSH	1381	1700	723			
Volume to Capacity	0.02	0.11	0.08			
Queue Length 95th (m)	0.4	0.0	2.0			
Control Delay (s/veh)	2.8	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	2.8	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization		31.8%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
23: Street D & Street A

2031 FT PM - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	103	19	24	144	10	17	0	14	3	0	22
Future Volume (vph)	19	103	19	24	144	10	17	0	14	3	0	22
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.992			0.939			0.880	
Flt Protected		0.993			0.993			0.973			0.994	
Satd. Flow (prot)	0	1418	0	0	1432	0	0	1328	0	0	1272	0
Flt Permitted		0.993			0.993			0.973			0.994	
Satd. Flow (perm)	0	1418	0	0	1432	0	0	1328	0	0	1272	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		402.0			127.1			338.9			91.6	
Travel Time (s)		36.2			11.4			30.5			8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	112	21	26	157	11	18	0	15	3	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	154	0	0	194	0	0	33	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	30.2%											
Analysis Period (min)	15											
	ICU Level of Service A											

HCM Unsignalized Intersection Capacity Analysis

2031 FT PM - Internal Intersections

23: Street D & Street A

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	103	19	24	144	10	17	0	14	3	0	22
Future Volume (Veh/h)	19	103	19	24	144	10	17	0	14	3	0	22
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	112	21	26	157	11	18	0	15	3	0	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	168			133			403	385	123	394	390	163
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	168			133			403	385	123	394	390	163
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			97	100	98	99	100	97
cM capacity (veh/h)	1410			1452			529	531	929	543	528	882
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	154	194	33	27								
Volume Left	21	26	18	3								
Volume Right	21	11	15	24								
cSH	1410	1452	658	825								
Volume to Capacity	0.01	0.02	0.05	0.03								
Queue Length 95th (m)	0.4	0.4	1.3	0.8								
Control Delay (s/veh)	1.1	1.1	10.8	9.5								
Lane LOS	A	A	B	A								
Approach Delay (s/veh)	1.1	1.1	10.8	9.5								
Approach LOS			B	A								
Intersection Summary												
Average Delay				2.5								
Intersection Capacity Utilization				30.2%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
24: Street F & Street A

2031 FT PM - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	50	41	3	37	2	21	0	3	7	8	35
Future Volume (vph)	40	50	41	3	37	2	21	0	3	7	8	35
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.957			0.994			0.984			0.907	
Flt Protected		0.985			0.997			0.958			0.993	
Satd. Flow (prot)	0	1371	0	0	1441	0	0	1371	0	0	1309	0
Flt Permitted		0.985			0.997			0.958			0.993	
Satd. Flow (perm)	0	1371	0	0	1441	0	0	1371	0	0	1309	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		219.6			248.0			514.5			93.0	
Travel Time (s)		19.8			22.3			46.3			8.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	54	45	3	40	2	23	0	3	8	9	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	0	0	45	0	0	26	0	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	30.2%											
Analysis Period (min)	15											
	ICU Level of Service A											

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	50	41	3	37	2	21	0	3	7	8	35
Future Volume (Veh/h)	40	50	41	3	37	2	21	0	3	7	8	35
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	54	45	3	40	2	23	0	3	8	9	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	42			99			252	211	77	213	232	41
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	42			99			252	211	77	213	232	41
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			96	100	100	99	99	96
cM capacity (veh/h)	1567			1494			653	666	985	725	648	1030
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	142	45	26	55								
Volume Left	43	3	23	8								
Volume Right	45	2	3	38								
cSH	1567	1494	680	890								
Volume to Capacity	0.03	0.00*	0.04	0.06								
Queue Length 95th (m)	0.7	0.0	1.0	1.6								
Control Delay (s/veh)	2.4	0.5	10.5	9.3								
Lane LOS	A	A	B	A								
Approach Delay (s/veh)	2.4	0.5	10.5	9.3								
Approach LOS			B	A								
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			30.2%		ICU Level of Service					A		
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
25: Street G & Street A

2031 FT PM - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	45	12	12	11	13	15	5	7	9	6	12
Future Volume (vph)	6	45	12	12	11	13	15	5	7	9	6	12
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.952			0.963			0.941	
Flt Protected		0.995			0.984			0.973			0.984	
Satd. Flow (prot)	0	1410	0	0	1362	0	0	1362	0	0	1346	0
Flt Permitted		0.995			0.984			0.973			0.984	
Satd. Flow (perm)	0	1410	0	0	1362	0	0	1362	0	0	1346	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		248.0			186.1			373.2			119.7	
Travel Time (s)		22.3			16.7			33.6			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	49	13	13	12	14	16	5	8	10	7	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	39	0	0	29	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	16.3%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

25: Street G & Street A

2031 FT PM - Internal Intersections

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	45	12	12	11	13	15	5	7	9	6	12
Future Volume (Veh/h)	6	45	12	12	11	13	15	5	7	9	6	12
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	49	13	13	12	14	16	5	8	10	7	13
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	26			62			131	122	56	125	121	19
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26			62			131	122	56	125	121	19
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			98	99	99	99	99	99
cM capacity (veh/h)	1588			1541			817	759	1011	830	759	1059
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	69	39	29	30								
Volume Left	7	13	16	10								
Volume Right	13	14	8	13								
cSH	1588	1541	851	894								
Volume to Capacity	0.00*	0.00*	0.03	0.03								
Queue Length 95th (m)	0.1	0.2	0.8	0.8								
Control Delay (s/veh)	0.8	2.5	9.4	9.2								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	0.8	2.5	9.4	9.2								
Approach LOS			A	A								
Intersection Summary												
Average Delay				4.2								
Intersection Capacity Utilization				16.3%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
26: Street D & Street B

2031 FT PM - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	13	3	5	14	2	12	6	4	6	12	14
Future Volume (vph)	19	13	3	5	14	2	12	6	4	6	12	14
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.988			0.977			0.942	
Flt Protected		0.973			0.989			0.974			0.990	
Satd. Flow (prot)	0	1399	0	0	1421	0	0	1384	0	0	1356	0
Flt Permitted		0.973			0.989			0.974			0.990	
Satd. Flow (perm)	0	1399	0	0	1421	0	0	1384	0	0	1356	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		414.9			122.4			415.2			338.9	
Travel Time (s)		37.3			11.0			37.4			30.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	14	3	5	15	2	13	7	4	7	13	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	22	0	0	24	0	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 15.4%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 26: Street D & Street B

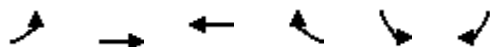
2031 FT PM - Internal Intersections
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	13	3	5	14	2	12	6	4	6	12	14
Future Volume (Veh/h)	19	13	3	5	14	2	12	6	4	6	12	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	14	3	5	15	2	13	7	4	7	13	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	17			17			105	85	16	91	85	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	17			17			105	85	16	91	85	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	99	100	99	98	99
cM capacity (veh/h)	1600			1600			841	793	1064	873	792	1063
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	38	22	24	35								
Volume Left	21	5	13	7								
Volume Right	3	2	4	15								
cSH	1600	1600	856	908								
Volume to Capacity	0.01	0.00*	0.03	0.04								
Queue Length 95th (m)	0.3	0.1	0.7	1.0								
Control Delay (s/veh)	4.1	1.7	9.3	9.1								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	4.1	1.7	9.3	9.1								
Approach LOS			A	A								
Intersection Summary												
Average Delay				6.2								
Intersection Capacity Utilization				15.4%	ICU Level of Service				A			
Analysis Period (min)				15								
* Value less than 0.01.												

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	97	70	138	141	170	136
Future Volume (vph)	97	70	138	141	170	136
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.932		0.940	
Flt Protected		0.972			0.973	
Satd. Flow (prot)	0	1668	1599	0	1569	0
Flt Permitted		0.972			0.973	
Satd. Flow (perm)	0	1668	1599	0	1569	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		279.5	262.1		363.5	
Travel Time (s)		25.2	23.6		32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	76	150	153	185	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	181	303	0	333	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.2	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.3%			ICU Level of Service B		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 20: Street A & Snider Road

2031 FT SAT - Internal Intersections
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	97	70	138	141	170	136
Future Volume (Veh/h)	97	70	138	141	170	136
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	76	150	153	185	148
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	303				513	227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	303				513	227
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				61	82
cM capacity (veh/h)	1258				478	813
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	181	303	333			
Volume Left	105	0	185			
Volume Right	0	153	148			
cSH	1258	1700	585			
Volume to Capacity	0.08	0.18	0.57			
Queue Length 95th (m)	2.2	0.0	28.5			
Control Delay (s/veh)	5.0	0.0	19.0			
Lane LOS	A		C			
Approach Delay (s/veh)	5.0	0.0	19.0			
Approach LOS			C			
Intersection Summary						
Average Delay			8.8			
Intersection Capacity Utilization			56.3%	ICU Level of Service		B
Analysis Period (min)			15			

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↙	↘↗	
Traffic Volume (vph)	180	70	4	150	38	1
Future Volume (vph)	180	70	4	150	38	1
Ideal Flow (vphpl)	1388	1351	1504	1228	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.962				0.997	
Flt Protected				0.999	0.953	
Satd. Flow (prot)	1309	0	0	1203	1381	0
Flt Permitted				0.999	0.953	
Satd. Flow (perm)	1309	0	0	1203	1381	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	262.1			219.6	518.5	
Travel Time (s)	23.6			19.8	46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	76	4	163	41	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	272	0	0	167	42	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.48	1.53	1.34	1.71	1.37	1.37
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.8%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	180	70	4	150	38	1
Future Volume (Veh/h)	180	70	4	150	38	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	76	4	163	41	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			272		405	234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			272		405	234
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		93	100
cM capacity (veh/h)			1291		600	805
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	272	167	42			
Volume Left	0	4	41			
Volume Right	76	0	1			
cSH	1700	1291	604			
Volume to Capacity	0.16	0.00*	0.07			
Queue Length 95th (m)	0.0	0.1	1.8			
Control Delay (s/veh)	0.0	0.2	11.4			
Lane LOS		A	B			
Approach Delay (s/veh)	0.0	0.2	11.4			
Approach LOS			B			
Intersection Summary						
Average Delay						
			1.1			
Intersection Capacity Utilization			28.8%	ICU Level of Service		A
Analysis Period (min)			15			
* Value less than 0.01.						

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	71	259	5	29	11
Future Volume (vph)	19	71	259	5	29	11
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.963	
Flt Protected		0.989			0.965	
Satd. Flow (prot)	0	1191	1358	0	1351	0
Flt Permitted		0.989			0.965	
Satd. Flow (perm)	0	1191	1358	0	1351	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		127.1	279.5		279.4	
Travel Time (s)		11.4	25.2		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	77	282	5	32	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	98	287	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 39.8%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 22: Street A & Street C

2031 FT SAT - Internal Intersections
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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	71	259	5	29	11
Future Volume (Veh/h)	19	71	259	5	29	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	77	282	5	32	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	287				404	285
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	287				404	285
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				95	98
cM capacity (veh/h)	1275				593	754
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	98	287	44			
Volume Left	21	0	32			
Volume Right	0	5	12			
cSH	1275	1700	630			
Volume to Capacity	0.02	0.17	0.07			
Queue Length 95th (m)	0.4	0.0	1.8			
Control Delay (s/veh)	1.8	0.0	11.1			
Lane LOS	A		B			
Approach Delay (s/veh)	1.8	0.0	11.1			
Approach LOS			B			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			39.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
23: Street D & Street A

2031 FT SAT - Internal Intersections

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	110	16	31	217	13	27	0	19	4	0	36
Future Volume (vph)	16	110	16	31	217	13	27	0	19	4	0	36
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.993			0.943			0.878	
Flt Protected		0.995			0.994			0.972			0.995	
Satd. Flow (prot)	0	1425	0	0	1435	0	0	1333	0	0	1270	0
Flt Permitted		0.995			0.994			0.972			0.995	
Satd. Flow (perm)	0	1425	0	0	1435	0	0	1333	0	0	1270	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		402.0			127.1			338.9			91.6	
Travel Time (s)		36.2			11.4			30.5			8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	120	17	34	236	14	29	0	21	4	0	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	154	0	0	284	0	0	50	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	40.8%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

2031 FT SAT - Internal Intersections

23: Street D & Street A

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	110	16	31	217	13	27	0	19	4	0	36
Future Volume (Veh/h)	16	110	16	31	217	13	27	0	19	4	0	36
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	120	17	34	236	14	29	0	21	4	0	39
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	250			137			513	481	129	495	482	243
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	250			137			513	481	129	495	482	243
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			93	100	98	99	100	95
cM capacity (veh/h)	1316			1447			437	467	921	461	466	796
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	154	284	50	43								
Volume Left	17	34	29	4								
Volume Right	17	14	21	39								
cSH	1316	1447	560	745								
Volume to Capacity	0.01	0.02	0.09	0.06								
Queue Length 95th (m)	0.3	0.6	2.3	1.5								
Control Delay (s/veh)	1.0	1.1	12.1	10.1								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	1.0	1.1	12.1	10.1								
Approach LOS			B	B								
Intersection Summary												
Average Delay				2.8								
Intersection Capacity Utilization				40.8%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
24: Street F & Street A

2031 FT SAT - Internal Intersections
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	52	37	4	52	2	32	0	2	6	10	53
Future Volume (vph)	40	52	37	4	52	2	32	0	2	6	10	53
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.996			0.993			0.897	
Flt Protected		0.985			0.997			0.955			0.995	
Satd. Flow (prot)	0	1376	0	0	1444	0	0	1379	0	0	1298	0
Flt Permitted		0.985			0.997			0.955			0.995	
Satd. Flow (perm)	0	1376	0	0	1444	0	0	1379	0	0	1298	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		219.6			248.0			514.5			93.0	
Travel Time (s)		19.8			22.3			46.3			8.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	57	40	4	57	2	35	0	2	7	11	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	63	0	0	37	0	0	76	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	31.7%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

2031 FT SAT - Internal Intersections

24: Street F & Street A

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	52	37	4	52	2	32	0	2	6	10	53
Future Volume (Veh/h)	40	52	37	4	52	2	32	0	2	6	10	53
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	57	40	4	57	2	35	0	2	7	11	58
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	59			97			293	230	77	231	249	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59			97			293	230	77	231	249	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			94	100	100	99	98	94
cM capacity (veh/h)	1545			1496			599	649	984	706	634	1008
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	140	63	37	76								
Volume Left	43	4	35	7								
Volume Right	40	2	2	58								
cSH	1545	1496	612	896								
Volume to Capacity	0.03	0.00*	0.06	0.08								
Queue Length 95th (m)	0.7	0.1	1.5	2.2								
Control Delay (s/veh)	2.4	0.5	11.3	9.4								
Lane LOS	A	A	B	A								
Approach Delay (s/veh)	2.4	0.5	11.3	9.4								
Approach LOS			B	A								
Intersection Summary												
Average Delay			4.7									
Intersection Capacity Utilization			31.7%	ICU Level of Service				A				
Analysis Period (min)			15									
* Value less than 0.01.												

Lanes, Volumes, Timings
25: Street G & Street A

2031 FT SAT - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	39	13	7	12	6	21	3	6	8	7	18
Future Volume (vph)	7	39	13	7	12	6	21	3	6	8	7	18
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.966			0.971			0.927	
Flt Protected		0.994			0.986			0.966			0.988	
Satd. Flow (prot)	0	1402	0	0	1385	0	0	1364	0	0	1332	0
Flt Permitted		0.994			0.986			0.966			0.988	
Satd. Flow (perm)	0	1402	0	0	1385	0	0	1364	0	0	1332	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		248.0			186.1			373.2			119.7	
Travel Time (s)		22.3			16.7			33.6			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	42	14	8	13	7	23	3	7	9	8	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	28	0	0	33	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	16.5%											
Analysis Period (min)	15											
ICU Level of Service A												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	39	13	7	12	6	21	3	6	8	7	18
Future Volume (Veh/h)	7	39	13	7	12	6	21	3	6	8	7	18
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	42	14	8	13	7	23	3	7	9	8	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	20			56			122	101	49	106	105	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	20			56			122	101	49	106	105	17
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	100	99	99	99	98
cM capacity (veh/h)	1596			1549			824	781	1020	858	778	1063
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	64	28	33	37								
Volume Left	8	8	23	9								
Volume Right	14	7	7	20								
cSH	1596	1549	855	934								
Volume to Capacity	0.00*	0.00*	0.04	0.04								
Queue Length 95th (m)	0.1	0.1	1.0	1.0								
Control Delay (s/veh)	0.9	2.1	9.4	9.0								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	0.9	2.1	9.4	9.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			4.7									
Intersection Capacity Utilization			16.5%	ICU Level of Service				A				
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
26: Street D & Street B

2031 FT SAT - Internal Intersections

02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	11	3	6	23	2	17	6	3	8	15	22
Future Volume (vph)	18	11	3	6	23	2	17	6	3	8	15	22
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.992			0.986			0.934	
Flt Protected		0.972			0.990			0.969			0.991	
Satd. Flow (prot)	0	1396	0	0	1428	0	0	1389	0	0	1346	0
Flt Permitted		0.972			0.990			0.969			0.991	
Satd. Flow (perm)	0	1396	0	0	1428	0	0	1389	0	0	1346	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		414.9			122.4			415.2			338.9	
Travel Time (s)		37.3			11.0			37.4			30.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	12	3	7	25	2	18	7	3	9	16	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	0	0	34	0	0	28	0	0	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	17.3%											
Analysis Period (min)	15											
	ICU Level of Service A											

HCM Unsignalized Intersection Capacity Analysis

2031 FT SAT - Internal Intersections

26: Street D & Street B

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	11	3	6	23	2	17	6	3	8	15	22
Future Volume (Veh/h)	18	11	3	6	23	2	17	6	3	8	15	22
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	12	3	7	25	2	18	7	3	9	16	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	27			15			126	95	14	100	95	26
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	27			15			126	95	14	100	95	26
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	99	100	99	98	98
cM capacity (veh/h)	1587			1603			805	782	1067	862	782	1050
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	35	34	28	49								
Volume Left	20	7	18	9								
Volume Right	3	2	3	24								
cSH	1587	1603	821	911								
Volume to Capacity	0.01	0.00*	0.03	0.05								
Queue Length 95th (m)	0.3	0.1	0.8	1.4								
Control Delay (s/veh)	4.2	1.5	9.5	9.2								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	4.2	1.5	9.5	9.2								
Approach LOS			A	A								
Intersection Summary												
Average Delay				6.3								
Intersection Capacity Utilization				17.3%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

APPENDIX P

2031 Future Total Detailed Capacity Analysis

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	219	132	87	360	245	275	311	118	208	187	181
Future Volume (vph)	149	219	132	87	360	245	275	311	118	208	187	181
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					1.00						
Frt			0.850			0.850		0.959				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1083	1401	1369	1073	1415	1272	0	1335	1597	957
Flt Permitted	0.437			0.611			0.630			0.376		
Satd. Flow (perm)	591	1429	1083	901	1369	1069	938	1272	0	529	1597	957
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			257		27				197
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			529.0			290.6			158.6	
Travel Time (s)		21.0			27.2			20.9			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	162	238	143	95	391	266	299	338	128	226	203	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	238	143	95	391	266	299	466	0	226	203	197
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.34	1.22	1.53	1.34	1.22	1.53	1.34	1.48	1.48	1.34	1.22	1.53
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	35.0	30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Flash Don't Walk (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	0
Act Effect Green (s)	26.8	26.8	26.8	26.8	26.8	26.8	30.3	30.3		30.3	30.3	30.3
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.37	0.37	0.42	0.42		0.42	0.42	0.42
v/c Ratio	0.74	0.45	0.29	0.29	0.77	0.48	0.76	0.85		1.02	0.30	0.38
Control Delay (s/veh)	41.5	19.7	4.4	17.8	31.2	5.5	36.3	38.0		96.0	17.6	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	41.5	19.7	4.4	17.8	31.2	5.5	36.3	38.0		96.0	17.6	5.3
LOS	D	B	A	B	C	A	D	D		F	B	A
Approach Delay (s/veh)		22.2			20.4			37.3			42.0	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 72.5

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.02

Intersection Signal Delay (s/veh): 30.6

Intersection LOS: C

Intersection Capacity Utilization 106.9%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

Queues

2031 FT AM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	162	238	143	95	391	266	299	466	226	203	197
v/c Ratio	0.74	0.45	0.29	0.29	0.77	0.48	0.76	0.85	1.02	0.30	0.38
Control Delay (s/veh)	41.5	19.7	4.4	17.8	31.2	5.5	36.3	38.0	96.0	17.6	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.5	19.7	4.4	17.8	31.2	5.5	36.3	38.0	96.0	17.6	5.3
Queue Length 50th (m)	21.1	27.4	0.0	9.4	54.3	0.8	36.8	59.4	~38.2	19.6	0.0
Queue Length 95th (m)	#52.4	47.4	10.6	20.2	90.8	15.5	#90.5	#135.4	#90.6	40.6	15.8
Internal Link Dist (m)	383.5			505.0			266.6			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	288	696	601	439	667	652	391	547	221	667	514
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.34	0.24	0.22	0.59	0.41	0.76	0.85	1.02	0.30	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	222	40	5	334	19	192	63	17	21	35	81
Future Volume (vph)	96	222	40	5	334	19	192	63	17	21	35	81
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1483	1504	1529	1351
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1401	1346	1126	1401	1293	1126	1401	1319	0	1401	1499	1126
Flt Permitted	0.424			0.609			0.700			0.701		
Satd. Flow (perm)	625	1346	1126	898	1293	1126	1032	1319	0	1034	1499	1126
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			67		14				88
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	104	241	43	5	363	21	209	68	18	23	38	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	241	43	5	363	21	209	86	0	23	38	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.34	1.22	1.53	1.34	1.22	1.53	1.34	1.48	1.37	1.34	1.32	1.53
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	8.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	8.5	56.7	56.7	48.2	48.2	48.2	10.4	23.8		9.5	22.9	22.9
Total Split (%)	9.4%	63.0%	63.0%	53.6%	53.6%	53.6%	11.6%	26.4%		10.6%	25.4%	25.4%
Maximum Green (s)	6.0	53.2	53.2	44.7	44.7	44.7	7.9	20.3		7.0	19.4	19.4
Yellow Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.5	3.5	3.5	3.5	3.5	3.5	2.5	3.5		2.5	3.5	3.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	54.2	53.2	53.2	44.7	44.7	44.7	29.2	20.3		27.4	19.4	19.4
Actuated g/C Ratio	0.60	0.59	0.59	0.50	0.50	0.50	0.32	0.23		0.30	0.22	0.22

2031 FT AM 10:09 am 01/28/2026

Synchro 11 Report
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Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.24	0.30	0.06	0.01	0.57	0.04	0.57	0.28		0.07	0.12	0.28
Control Delay (s/veh)	9.2	10.5	2.8	11.6	20.2	0.1	30.8	27.1		20.5	29.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	9.2	10.5	2.8	11.6	20.2	0.1	30.8	27.1		20.5	29.7	9.4
LOS	A	B	A	B	C	A	C	C		C	C	A
Approach Delay (s/veh)		9.3			19.0			29.7			16.3	
Approach LOS		A			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Pretimed

Maximum v/c Ratio: 0.57

Intersection Signal Delay (s/veh): 18.1

Intersection LOS: B

Intersection Capacity Utilization 57.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

 Ø1	 Ø2 (R)	 Ø4	
9.5 s	23.8 s	56.7 s	
 Ø5	 Ø6 (R)	 Ø7	 Ø8
10.4 s	22.9 s	8.5 s	48.2 s

Queues

2: Snider Road & Main St. E. (Highway 3)

2031 FT AM

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	104	241	43	5	363	21	209	86	23	38	88
v/c Ratio	0.24	0.30	0.06	0.01	0.57	0.04	0.57	0.28	0.07	0.12	0.28
Control Delay (s/veh)	9.2	10.5	2.8	11.6	20.2	0.1	30.8	27.1	20.5	29.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.2	10.5	2.8	11.6	20.2	0.1	30.8	27.1	20.5	29.7	9.4
Queue Length 50th (m)	7.5	23.1	0.0	0.5	52.3	0.0	29.5	10.9	2.8	5.7	0.0
Queue Length 95th (m)	14.7	39.1	4.2	2.3	85.9	0.0	50.3	24.4	8.3	14.3	12.4
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	428	795	683	446	642	592	367	308	343	323	311
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.30	0.06	0.01	0.57	0.04	0.57	0.28	0.07	0.12	0.28
Intersection Summary											

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FT AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	230	18	10	317	0	31	7	17	0	2	2
Future Volume (vph)	10	230	18	10	317	0	31	7	17	0	2	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.959			0.932	
Flt Protected		0.998			0.998			0.972				
Satd. Flow (prot)	0	1028	1137	0	994	1325	0	1363	0	0	1362	0
Flt Permitted		0.998			0.998			0.972				
Satd. Flow (perm)	0	1028	1137	0	994	1325	0	1363	0	0	1362	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	11	250	20	11	345	0	34	8	18	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	20	0	356	0	0	60	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	55.6%											
Analysis Period (min)	15											
ICU Level of Service B												

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FT AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	230	18	10	317	0	31	7	17	0	2	2
Future Volume (Veh/h)	10	230	18	10	317	0	31	7	17	0	2	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	250	20	11	345	0	34	8	18	0	2	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	345			270			642	639	250	661	659	345
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345			270			642	639	250	661	659	345
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			91	98	98	100	99	100
cM capacity (veh/h)	1214			1299			381	387	789	357	377	700
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	261	20	356	0	60	4						
Volume Left	11	0	11	0	34	0						
Volume Right	0	20	0	0	18	2						
cSH	1214	1700	1299	1700	452	490						
Volume to Capacity	0.00*	0.01	0.00*	0.00	0.13	0.00*						
Queue Length 95th (m)	0.2	0.0	0.2	0.0	3.6	0.2						
Control Delay (s/veh)	0.4	0.0	0.3	0.0	14.2	12.4						
Lane LOS	A		A		B	B						
Approach Delay (s/veh)	0.4		0.3		14.2	12.4						
Approach LOS					B	B						
Intersection Summary												
Average Delay				1.6								
Intersection Capacity Utilization				55.6%	ICU Level of Service			B				
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2031 FT AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	123	6	7	102	28	5	5	4	31	4	5
Future Volume (vph)	9	123	6	7	102	28	5	5	4	31	4	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.973			0.961			0.984	
Flt Protected		0.997			0.997			0.982			0.962	
Satd. Flow (prot)	0	1405	0	0	1342	0	0	1377	0	0	1378	0
Flt Permitted		0.997			0.997			0.982			0.962	
Satd. Flow (perm)	0	1405	0	0	1342	0	0	1377	0	0	1378	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	10	134	7	8	111	30	5	5	4	34	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	151	0	0	149	0	0	14	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.0%											
Analysis Period (min)	15											
	ICU Level of Service A											

HCM Unsignalized Intersection Capacity Analysis 4: Killaly St. E & Lorraine Road

2031 FT AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	123	6	7	102	28	5	5	4	31	4	5
Future Volume (Veh/h)	9	123	6	7	102	28	5	5	4	31	4	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	134	7	8	111	30	5	5	4	34	4	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	141			141			307	315	138	306	303	126
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	141			141			307	315	138	306	303	126
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	99	100	95	99	99
cM capacity (veh/h)	1442			1442			633	595	911	633	604	924
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	151	149	14	43								
Volume Left	10	8	5	34								
Volume Right	7	30	4	5								
cSH	1442	1442	677	654								
Volume to Capacity	0.00*	0.00*	0.02	0.07								
Queue Length 95th (m)	0.2	0.1	0.5	1.7								
Control Delay (s/veh)	0.6	0.4	10.4	10.9								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.6	0.4	10.4	10.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay				2.1								
Intersection Capacity Utilization				25.0%	ICU Level of Service				A			
Analysis Period (min)				15								
* Value less than 0.01.												

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FT AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Future Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.977			0.966			0.898	
Flt Protected		0.972						0.996			0.991	
Satd. Flow (prot)	0	1356	0	0	1282	0	0	1409	0	0	1304	0
Flt Permitted		0.972						0.996			0.991	
Satd. Flow (perm)	0	1356	0	0	1282	0	0	1409	0	0	1304	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	299	221	7	3	315	67	3	27	10	57	20	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	0	385	0	0	40	0	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	97.0%											
Analysis Period (min)	15											
	ICU Level of Service F											

HCM Unsignalized Intersection Capacity Analysis 6: Elizabeth Street & Killaly St. E

2031 FT AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	203	6	3	290	62	3	25	9	52	18	217
Future Volume (Veh/h)	275	203	6	3	290	62	3	25	9	52	18	217
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	299	221	7	3	315	67	3	27	10	57	20	236
Pedestrians					1				1			
Lane Width (m)					3.6				3.6			
Walking Speed (m/s)					1.2				1.2			
Percent Blockage					0				0			
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	383			228			1423	1212	226	1203	1182	350
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	383			228			1423	1212	226	1203	1182	350
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	74			100			94	80	99	47	86	66
cM capacity (veh/h)	1164			1340			54	136	813	109	141	696
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	527	385	40	313								
Volume Left	299	3	3	57								
Volume Right	7	67	10	236								
cSH	1164	1340	150	311								
Volume to Capacity	0.26	0.00*	0.27	1.01								
Queue Length 95th (m)	8.2	0.1	8.1	87.7								
Control Delay (s/veh)	6.4	0.1	37.6	90.5								
Lane LOS	A	A	E	F								
Approach Delay (s/veh)	6.4	0.1	37.6	90.5								
Approach LOS			E	F								
Intersection Summary												
Average Delay				26.3								
Intersection Capacity Utilization				97.0%	ICU Level of Service				F			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
7: Elizabeth Street & Street A

2031 FT AM
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	73	247	457	76	67	302
Future Volume (vph)	73	247	457	76	67	302
Ideal Flow (vphpl)	1504	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.981			
Flt Protected	0.950					0.991
Satd. Flow (prot)	1401	1126	1335	0	0	1193
Flt Permitted	0.950					0.991
Satd. Flow (perm)	1401	1126	1335	0	0	1193
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	268	497	83	73	328
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	268	580	0	0	401
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.34	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	84.7%			ICU Level of Service E		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

7: Elizabeth Street & Street A

2031 FT AM
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	73	247	457	76	67	302
Future Volume (Veh/h)	73	247	457	76	67	302
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	268	497	83	73	328
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						290
pX, platoon unblocked						
vC, conflicting volume	1013	539			580	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1013	539			580	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	68	51			93	
cM capacity (veh/h)	245	543			994	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	79	268	580	401		
Volume Left	79	0	0	73		
Volume Right	0	268	83	0		
cSH	245	543	1700	994		
Volume to Capacity	0.32	0.49	0.34	0.07		
Queue Length 95th (m)	10.7	21.7	0.0	1.9		
Control Delay (s/veh)	26.5	17.9	0.0	2.3		
Lane LOS	D	C		A		
Approach Delay (s/veh)	19.9		0.0	2.3		
Approach LOS	C					
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			84.7%		ICU Level of Service	E
Analysis Period (min)			15			

Lanes, Volumes, Timings
8: Elizabeth Street & Street B

2031 FT AM
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	123	410	30	45	331
Future Volume (vph)	40	123	410	30	45	331
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.898		0.991			
Flt Protected	0.988					0.994
Satd. Flow (prot)	1290	0	1349	0	0	1255
Flt Permitted	0.988					0.994
Satd. Flow (perm)	1290	0	1349	0	0	1255
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	134	446	33	49	360
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	0	479	0	0	409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	83.9%			ICU Level of Service E		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 8: Elizabeth Street & Street B

2031 FT AM
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	123	410	30	45	331
Future Volume (Veh/h)	40	123	410	30	45	331
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	134	446	33	49	360
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	921	463			479	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	921	463			479	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	78			95	
cM capacity (veh/h)	287	599			1083	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	177	479	409			
Volume Left	43	0	49			
Volume Right	134	33	0			
cSH	474	1700	1083			
Volume to Capacity	0.37	0.28	0.05			
Queue Length 95th (m)	13.7	0.0	1.1			
Control Delay (s/veh)	17.1	0.0	1.4			
Lane LOS	C		A			
Approach Delay (s/veh)	17.1	0.0	1.4			
Approach LOS	C					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			83.9%	ICU Level of Service	E	
Analysis Period (min)			15			

Lanes, Volumes, Timings
9: Elizabeth Street & Elementary School Access

2031 FT AM
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	41	401	37	40	337
Future Volume (vph)	25	41	401	37	40	337
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.916		0.989			
Flt Protected	0.982					0.995
Satd. Flow (prot)	1308	0	1346	0	0	1198
Flt Permitted	0.982					0.995
Satd. Flow (perm)	1308	0	1346	0	0	1198
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	45	436	40	43	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	0	476	0	0	409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.8%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 9: Elizabeth Street & Elementary School Access

2031 FT AM
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	41	401	37	40	337
Future Volume (Veh/h)	25	41	401	37	40	337
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	45	436	40	43	366
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	908	456			476	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	908	456			476	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	93			96	
cM capacity (veh/h)	294	604			1086	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	72	476	409			
Volume Left	27	0	43			
Volume Right	45	40	0			
cSH	433	1700	1086			
Volume to Capacity	0.17	0.28	0.04			
Queue Length 95th (m)	4.7	0.0	1.0			
Control Delay (s/veh)	15.0	0.0	1.3			
Lane LOS	B		A			
Approach Delay (s/veh)	15.0	0.0	1.3			
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			77.8%	ICU Level of Service		D
Analysis Period (min)			15			

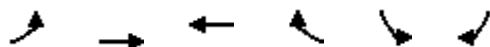
Lanes, Volumes, Timings
10: Killaly St. E & Commercial Access

2031 FT AM
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	206	296	2	2	16
Future Volume (vph)	20	206	296	2	2	16
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.999		0.879	
Flt Protected		0.996			0.995	
Satd. Flow (prot)	0	1199	1359	0	1272	0
Flt Permitted		0.996			0.995	
Satd. Flow (perm)	0	1199	1359	0	1272	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	224	322	2	2	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	246	324	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	52.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 10: Killaly St. E & Commercial Access

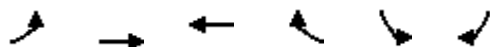
2031 FT AM
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	206	296	2	2	16
Future Volume (Veh/h)	20	206	296	2	2	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	224	322	2	2	17
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	324				591	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324				591	323
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	98
cM capacity (veh/h)	1236				461	718
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	246	324	19			
Volume Left	22	0	2			
Volume Right	0	2	17			
cSH	1236	1700	678			
Volume to Capacity	0.02	0.19	0.03			
Queue Length 95th (m)	0.4	0.0	0.7			
Control Delay (s/veh)	0.9	0.0	10.5			
Lane LOS	A		B			
Approach Delay (s/veh)	0.9	0.0	10.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			52.5%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
11: Killaly St. E & Street D

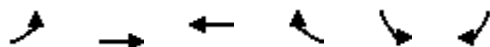
2031 FT AM
02/25/2026



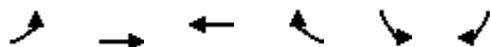
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	170	230	4	9	43
Future Volume (vph)	22	170	230	4	9	43
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.889	
Flt Protected		0.994			0.991	
Satd. Flow (prot)	0	1197	1358	0	1281	0
Flt Permitted		0.994			0.991	
Satd. Flow (perm)	0	1197	1358	0	1281	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	185	250	4	10	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	209	254	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 11: Killaly St. E & Street D

2031 FT AM
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	170	230	4	9	43
Future Volume (Veh/h)	22	170	230	4	9	43
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	185	250	4	10	47
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	254				485	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254				485	252
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	94
cM capacity (veh/h)	1311				531	787
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	209	254	57			
Volume Left	24	0	10			
Volume Right	0	4	47			
cSH	1311	1700	725			
Volume to Capacity	0.02	0.15	0.08			
Queue Length 95th (m)	0.4	0.0	2.0			
Control Delay (s/veh)	1.0	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	1.0	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			46.7%	ICU Level of Service		A
Analysis Period (min)			15			



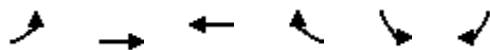
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	135	131	4	9	52
Future Volume (vph)	26	135	131	4	9	52
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.996		0.885	
Flt Protected		0.992			0.993	
Satd. Flow (prot)	0	1194	1355	0	1278	0
Flt Permitted		0.992			0.993	
Satd. Flow (perm)	0	1194	1355	0	1278	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	147	142	4	10	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	175	146	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis 12: Killaly St. E & Street F

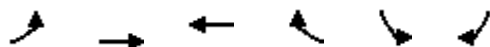
2031 FT AM
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	135	131	4	9	52
Future Volume (Veh/h)	26	135	131	4	9	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	147	142	4	10	57
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	146				347	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	146				347	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	94
cM capacity (veh/h)	1436				637	903
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	175	146	67			
Volume Left	28	0	10			
Volume Right	0	4	57			
cSH	1436	1700	850			
Volume to Capacity	0.02	0.09	0.08			
Queue Length 95th (m)	0.5	0.0	2.0			
Control Delay (s/veh)	1.3	0.0	9.6			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			37.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
13: Killaly St. E & Street G

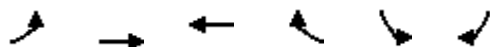
2031 FT AM
02/25/2026



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	130	109	3	7	26
Future Volume (vph)	13	130	109	3	7	26
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.997		0.895	
Flt Protected		0.996			0.989	
Satd. Flow (prot)	0	1199	1357	0	1287	0
Flt Permitted		0.996			0.989	
Satd. Flow (perm)	0	1199	1357	0	1287	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	141	118	3	8	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	155	121	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 28.4%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 13: Killaly St. E & Street G

2031 FT AM
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	130	109	3	7	26
Future Volume (Veh/h)	13	130	109	3	7	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	141	118	3	8	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	121				289	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121				289	120
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	97
cM capacity (veh/h)	1467				695	932
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	155	121	36			
Volume Left	14	0	8			
Volume Right	0	3	28			
cSH	1467	1700	867			
Volume to Capacity	0.00*	0.07	0.04			
Queue Length 95th (m)	0.2	0.0	1.0			
Control Delay (s/veh)	0.7	0.0	9.3			
Lane LOS	A		A			
Approach Delay (s/veh)	0.7	0.0	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		28.4%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

Lanes, Volumes, Timings
14: Street E & Killaly St. E

2031 FT AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	153	9	0	181	2	18	0	3	5	0	35
Future Volume (vph)	17	153	9	0	181	2	18	0	3	5	0	35
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.999			0.982			0.881	
Flt Protected		0.995						0.958			0.994	
Satd. Flow (prot)	0	1437	0	0	1452	0	0	1368	0	0	1273	0
Flt Permitted		0.995						0.958			0.994	
Satd. Flow (perm)	0	1437	0	0	1452	0	0	1368	0	0	1273	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	166	10	0	197	2	20	0	3	5	0	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	194	0	0	199	0	0	23	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.5%											
Analysis Period (min)	15											
	ICU Level of Service A											

HCM Unsignalized Intersection Capacity Analysis

14: Street E & Killaly St. E

2031 FT AM

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	153	9	0	181	2	18	0	3	5	0	35
Future Volume (Veh/h)	17	153	9	0	181	2	18	0	3	5	0	35
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	166	10	0	197	2	20	0	3	5	0	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	199			176			443	406	171	408	410	198
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	199			176			443	406	171	408	410	198
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	100	100	99	100	95
cM capacity (veh/h)	1373			1400			496	527	873	546	524	843
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	194	199	23	43								
Volume Left	18	0	20	5								
Volume Right	10	2	3	38								
cSH	1373	1400	526	793								
Volume to Capacity	0.01	0.00	0.04	0.05								
Queue Length 95th (m)	0.3	0.0	1.1	1.4								
Control Delay (s/veh)	0.8	0.0	12.2	9.8								
Lane LOS	A		B	A								
Approach Delay (s/veh)	0.8	0.0	12.2	9.8								
Approach LOS			B	A								
Intersection Summary												
Average Delay				1.9								
Intersection Capacity Utilization				41.5%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
15: Lorraine Road & Site Access

2031 FT AM
02/25/2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	6	3	45	38	2
Future Volume (vph)	6	6	3	45	38	2
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.994	
Flt Protected	0.976			0.997		
Satd. Flow (prot)	1323	0	0	1200	1353	0
Flt Permitted	0.976			0.997		
Satd. Flow (perm)	1323	0	0	1200	1353	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	176.2			135.3	371.1	
Travel Time (s)	15.9			8.1	22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	7	3	49	41	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	52	43	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 17.5%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 15: Lorraine Road & Site Access

2031 FT AM
02/25/2026

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	6	3	45	38	2
Future Volume (Veh/h)	6	6	3	45	38	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	7	3	49	41	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	97	42	43			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97	42	43			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	900	1029	1566			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	14	52	43			
Volume Left	7	3	0			
Volume Right	7	0	2			
cSH	960	1566	1700			
Volume to Capacity	0.01	0.00*	0.03			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s/veh)	8.8	0.4	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.8	0.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			17.5%	ICU Level of Service		A
Analysis Period (min)			15			
* Value less than 0.01.						

Lanes, Volumes, Timings
16: Lorraine Road & Street A

2031 FT AM
02/25/2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	13	5	40	27	4
Future Volume (vph)	9	13	5	40	27	4
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921				0.984	
Flt Protected	0.980			0.995		
Satd. Flow (prot)	1312	0	0	1256	1339	0
Flt Permitted	0.980			0.995		
Satd. Flow (perm)	1312	0	0	1256	1339	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	186.1			371.1	118.9	
Travel Time (s)	16.7			22.3	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	14	5	43	29	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	0	48	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 16: Lorraine Road & Street A

2031 FT AM
02/25/2026

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	13	5	40	27	4
Future Volume (Veh/h)	9	13	5	40	27	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	14	5	43	29	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	84	31	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	84	31	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	915	1043	1579			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	24	48	33			
Volume Left	10	5	0			
Volume Right	14	0	4			
cSH	985	1579	1700			
Volume to Capacity	0.02	0.00*	0.02			
Queue Length 95th (m)	0.6	0.1	0.0			
Control Delay (s/veh)	8.7	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.7	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			19.3%	ICU Level of Service		A
Analysis Period (min)			15			
* Value less than 0.01.						

Lanes, Volumes, Timings
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT AM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	349	27	3	592	13	0	0	8	0	0	79
Future Volume (vph)	161	349	27	3	592	13	0	0	8	0	0	79
Ideal Flow (vphpl)	1504	1388	1483	1483	1483	1483	1483	1483	1351	1483	1483	1351
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.997				0.865			0.865
Flt Protected	0.950											
Satd. Flow (prot)	1401	1346	0	0	1450	0	0	0	1146	0	0	1146
Flt Permitted	0.950											
Satd. Flow (perm)	1401	1346	0	0	1450	0	0	0	1146	0	0	1146
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	379	29	3	643	14	0	0	9	0	0	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	408	0	0	660	0	0	0	9	0	0	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.34	1.48	1.37	1.37	1.37	1.37	1.37	1.37	1.53	1.37	1.37	1.53
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	75.2%						ICU Level of Service D					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT AM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	349	27	3	592	13	0	0	8	0	0	79
Future Volume (Veh/h)	161	349	27	3	592	13	0	0	8	0	0	79
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	175	379	29	3	643	14	0	0	9	0	0	86
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (m)	307											
pX, platoon unblocked	0.78						0.78	0.78		0.78	0.78	0.78
vC, conflicting volume	657			408			1486	1407	394	1394	1414	650
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	425			408			1482	1381	394	1365	1390	416
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	80			100			100	100	99	100	100	83
cM capacity (veh/h)	889			1151			57	91	655	82	89	499
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	175	408	660	9	86							
Volume Left	175	0	3	0	0							
Volume Right	0	29	14	9	86							
cSH	889	1700	1151	655	499							
Volume to Capacity	0.20	0.24	0.00*	0.01	0.17							
Queue Length 95th (m)	5.8	0.0	0.1	0.3	4.9							
Control Delay (s/veh)	10.0	0.0	0.1	10.6	13.7							
Lane LOS	B		A	B	B							
Approach Delay (s/veh)	3.0		0.1	10.6	13.7							
Approach LOS				B	B							
Intersection Summary												
Average Delay												
2.3												
Intersection Capacity Utilization												
75.2%												
ICU Level of Service												
D												
Analysis Period (min)												
15												

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	519	99	43	419	281	93	265	43	490	361	317
Future Volume (vph)	232	519	99	43	419	281	93	265	43	490	361	317
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					1.00						
Frt			0.850			0.850		0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1083	1401	1369	1073	1415	1290	0	1335	1597	957
Flt Permitted	0.394			0.287			0.414			0.482		
Satd. Flow (perm)	533	1429	1083	423	1369	1069	616	1290	0	678	1597	957
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108			253		12				260
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			529.0			290.6			158.6	
Travel Time (s)		21.0			27.2			20.9			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	252	564	108	47	455	305	101	288	47	533	392	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	252	564	108	47	455	305	101	335	0	533	392	345
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.34	1.22	1.53	1.34	1.22	1.53	1.34	1.48	1.48	1.34	1.22	1.53
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	35.0	30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Flash Don't Walk (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	0
Act Effect Green (s)	35.0	35.0	35.0	35.0	35.0	35.0	30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.37	0.37		0.37	0.37	0.37
v/c Ratio	1.09	0.91	0.20	0.26	0.76	0.50	0.44	0.69		2.11	0.66	0.66
Control Delay (s/veh)	110.8	42.6	4.1	19.0	29.6	6.8	26.3	29.0		531.8	27.3	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	110.8	42.6	4.1	19.0	29.6	6.8	26.3	29.0		531.8	27.3	12.8
LOS	F	D	A	B	C	A	C	C		F	C	B
Approach Delay (s/veh)		56.7			20.3			28.4			235.1	
Approach LOS		E			C			C			F	

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 80.3

Natural Cycle: 110

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 2.11

Intersection Signal Delay (s/veh): 110.5

Intersection LOS: F

Intersection Capacity Utilization 126.8%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1 	#1 
Ø2	Ø4
37.4 s	42.9 s
#1 	#1 
Ø6	Ø8
37.4 s	42.9 s

Queues

2031 FT PM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	252	564	108	47	455	305	101	335	533	392	345
v/c Ratio	1.09	0.91	0.20	0.26	0.76	0.50	0.44	0.69	2.11	0.66	0.66
Control Delay (s/veh)	110.8	42.6	4.1	19.0	29.6	6.8	26.3	29.0	531.8	27.3	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	110.8	42.6	4.1	19.0	29.6	6.8	26.3	29.0	531.8	27.3	12.8
Queue Length 50th (m)	~49.7	89.7	0.0	4.7	67.6	5.0	12.0	44.6	~144.8	51.9	10.5
Queue Length 95th (m)	#98.0	#161.1	9.2	13.4	#124.3	24.5	27.5	77.0	#170.1	83.6	46.5
Internal Link Dist (m)	383.5			505.0			266.6			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		115.0		25.0
Base Capacity (vph)	232	622	532	184	596	608	230	489	253	596	520
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.91	0.20	0.26	0.76	0.50	0.44	0.69	2.11	0.66	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	312	121	19	340	112	96	102	23	303	280	191
Future Volume (vph)	229	312	121	19	340	112	96	102	23	303	280	191
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1483	1504	1629	1351
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1401	1346	1126	1401	1293	1126	1401	1323	0	1401	1597	1126
Flt Permitted	0.378			0.557			0.415			0.525		
Satd. Flow (perm)	557	1346	1126	821	1293	1126	612	1323	0	774	1597	1126
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132			109		12				208
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	249	339	132	21	370	122	104	111	25	329	304	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	339	132	21	370	122	104	136	0	329	304	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.34	1.22	1.53	1.34	1.22	1.53	1.34	1.48	1.37	1.34	1.22	1.53
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	8.5	22.5	22.5	22.5	22.5	22.5	9.5	20.5		9.5	22.5	22.5
Total Split (s)	11.0	53.0	53.0	42.0	42.0	42.0	9.5	23.0		14.0	27.5	27.5
Total Split (%)	12.2%	58.9%	58.9%	46.7%	46.7%	46.7%	10.6%	25.6%		15.6%	30.6%	30.6%
Maximum Green (s)	8.5	49.5	49.5	38.5	38.5	38.5	7.0	19.5		11.5	24.0	24.0
Yellow Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.5	3.5	3.5	3.5	3.5	3.5	2.5	3.5		2.5	3.5	3.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	50.5	49.5	49.5	38.5	38.5	38.5	27.5	19.5		34.5	24.0	24.0
Actuated g/C Ratio	0.56	0.55	0.55	0.43	0.43	0.43	0.31	0.22		0.38	0.27	0.27

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Synchro 11 Report
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Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.64	0.46	0.19	0.06	0.67	0.22	0.42	0.46		0.88	0.72	0.46
Control Delay (s/veh)	19.4	14.7	2.6	15.8	27.9	5.3	24.9	33.7		49.6	40.8	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	19.4	14.7	2.6	15.8	27.9	5.3	24.9	33.7		49.6	40.8	7.6
LOS	B	B	A	B	C	A	C	C		D	D	A
Approach Delay (s/veh)		14.1			22.1			29.9			36.0	
Approach LOS		B			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.88

Intersection Signal Delay (s/veh): 25.5

Intersection LOS: C

Intersection Capacity Utilization 80.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

#2  Ø1	#2  Ø2 (R)	#2  Ø4	
14 s	23 s	53 s	
#2  Ø5	#2  Ø6 (R)	#2  Ø7	#2  Ø8
9.5 s	27.5 s	11 s	42 s

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	249	339	132	21	370	122	104	136	329	304	208
v/c Ratio	0.64	0.46	0.19	0.06	0.67	0.22	0.42	0.46	0.88	0.72	0.46
Control Delay (s/veh)	19.4	14.7	2.6	15.8	27.9	5.3	24.9	33.7	49.6	40.8	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.4	14.7	2.6	15.8	27.9	5.3	24.9	33.7	49.6	40.8	7.6
Queue Length 50th (m)	22.9	40.0	0.0	2.2	62.2	1.4	12.5	19.9	48.0	50.8	0.0
Queue Length 95th (m)	38.3	65.4	8.1	6.9	102.0	11.8	24.4	38.4	#102.7	#86.9	17.7
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	392	740	678	351	553	544	248	296	376	425	452
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.46	0.19	0.06	0.67	0.22	0.42	0.46	0.88	0.72	0.46

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FT PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	407	130	15	365	0	74	6	26	0	9	25
Future Volume (vph)	16	407	130	15	365	0	74	6	26	0	9	25
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.967			0.901	
Flt Protected		0.998			0.998			0.966				
Satd. Flow (prot)	0	1027	1137	0	995	1325	0	1367	0	0	1319	0
Flt Permitted		0.998			0.998			0.966				
Satd. Flow (perm)	0	1027	1137	0	995	1325	0	1367	0	0	1319	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	17	442	141	16	397	0	80	7	28	0	10	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	459	141	0	413	0	0	115	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 74.2%	ICU Level of Service D											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FT PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	407	130	15	365	0	74	6	26	0	9	25
Future Volume (Veh/h)	16	407	130	15	365	0	74	6	26	0	9	25
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	442	141	16	397	0	80	7	28	0	10	27
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	397			583			937	905	442	937	1046	397
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	397			583			937	905	442	937	1046	397
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			64	97	95	100	95	96
cM capacity (veh/h)	1162			996			222	268	615	224	221	655
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	459	141	413	0	115	37						
Volume Left	17	0	16	0	80	0						
Volume Right	0	141	0	0	28	27						
cSH	1162	1700	996	1700	267	428						
Volume to Capacity	0.01	0.08	0.02	0.00	0.43	0.09						
Queue Length 95th (m)	0.4	0.0	0.4	0.0	16.4	2.3						
Control Delay (s/veh)	0.5	0.0	0.5	0.0	28.4	14.2						
Lane LOS	A		A		D	B						
Approach Delay (s/veh)	0.3		0.5		28.4	14.2						
Approach LOS					D	B						
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			74.2%	ICU Level of Service					D			
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2031 FT PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	215	6	6	146	92	7	4	8	157	10	6
Future Volume (vph)	14	215	6	6	146	92	7	4	8	157	10	6
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.949			0.942			0.995	
Flt Protected		0.997			0.999			0.981			0.957	
Satd. Flow (prot)	0	1406	0	0	1324	0	0	1346	0	0	1385	0
Flt Permitted		0.997			0.999			0.981			0.957	
Satd. Flow (perm)	0	1406	0	0	1324	0	0	1346	0	0	1385	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	15	234	7	7	159	100	8	4	9	171	11	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	266	0	0	21	0	0	189	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.3%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

4: Killaly St. E & Lorraine Road

2031 FT PM

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	215	6	6	146	92	7	4	8	157	10	6
Future Volume (Veh/h)	14	215	6	6	146	92	7	4	8	157	10	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	234	7	7	159	100	8	4	9	171	11	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	259			241			503	541	238	502	494	209
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259			241			503	541	238	502	494	209
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			98	99	99	63	98	99
cM capacity (veh/h)	1306			1326			461	442	801	465	470	831
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	256	266	21	189								
Volume Left	15	7	8	171								
Volume Right	7	100	9	7								
cSH	1306	1326	558	473								
Volume to Capacity	0.01	0.00*	0.04	0.40								
Queue Length 95th (m)	0.3	0.1	0.9	15.1								
Control Delay (s/veh)	0.6	0.3	11.7	17.6								
Lane LOS	A	A	B	C								
Approach Delay (s/veh)	0.6	0.3	11.7	17.6								
Approach LOS			B	C								
Intersection Summary												
Average Delay			5.2									
Intersection Capacity Utilization			49.3%	ICU Level of Service					A			
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FT PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Future Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.972			0.986			0.923	
Flt Protected		0.981			0.998			0.992			0.984	
Satd. Flow (prot)	0	1357	0	0	1283	0	0	1435	0	0	1328	0
Flt Permitted		0.981			0.998			0.992			0.984	
Satd. Flow (perm)	0	1357	0	0	1283	0	0	1435	0	0	1328	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	109	174	4	8	146	41	5	22	3	77	27	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	287	0	0	195	0	0	30	0	0	243	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	64.2%											
Analysis Period (min)	15											
ICU Level of Service C												

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2031 FT PM
02/25/2026

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	100	160	4	7	134	38	5	20	3	71	25	128	
Future Volume (Veh/h)	100	160	4	7	134	38	5	20	3	71	25	128	
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	109	174	4	8	146	41	5	22	3	77	27	139	
Pedestrians					1					1			
Lane Width (m)					3.6					3.6			
Walking Speed (m/s)					1.2					1.2			
Percent Blockage					0					0			
Right turn flare (veh)													
Median type	None			None									
Median storage (veh)													
Upstream signal (m)													
pX, platoon unblocked													
vC, conflicting volume	188			178			729	598	177	593	580	168	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	188			178			729	598	177	593	580	168	
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	92			99			98	94	100	79	93	84	
cM capacity (veh/h)	1373			1398			253	381	865	371	390	879	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1									
Volume Total	287	195	30	243									
Volume Left	109	8	5	77									
Volume Right	4	41	3	139									
cSH	1373	1398	371	559									
Volume to Capacity	0.08	0.00*	0.08	0.43									
Queue Length 95th (m)	2.1	0.1	2.1	17.5									
Control Delay (s/veh)	3.4	0.4	15.6	16.3									
Lane LOS	A	A	C	C									
Approach Delay (s/veh)	3.4	0.4	15.6	16.3									
Approach LOS			C	C									
Intersection Summary													
Average Delay			7.3										
Intersection Capacity Utilization			64.2%	ICU Level of Service				C					
Analysis Period (min)			15										

* Value less than 0.01.

Lanes, Volumes, Timings
7: Elizabeth Street & Street A

2031 FT PM
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	108	291	5	187	288
Future Volume (vph)	23	108	291	5	187	288
Ideal Flow (vphpl)	1504	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.998			
Flt Protected	0.950					0.981
Satd. Flow (prot)	1401	1126	1358	0	0	1181
Flt Permitted	0.950					0.981
Satd. Flow (perm)	1401	1126	1358	0	0	1181
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	117	316	5	203	313
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	117	321	0	0	516
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.34	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	74.2%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

7: Elizabeth Street & Street A

2031 FT PM
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	108	291	5	187	288
Future Volume (Veh/h)	23	108	291	5	187	288
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	117	316	5	203	313
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						290
pX, platoon unblocked	0.85					
vC, conflicting volume	1038	319			321	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	953	319			321	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	84			84	
cM capacity (veh/h)	203	722			1239	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	25	117	321	516		
Volume Left	25	0	0	203		
Volume Right	0	117	5	0		
cSH	203	722	1700	1239		
Volume to Capacity	0.12	0.16	0.19	0.16		
Queue Length 95th (m)	3.3	4.6	0.0	4.7		
Control Delay (s/veh)	25.2	10.9	0.0	4.4		
Lane LOS	D	B		A		
Approach Delay (s/veh)	13.5		0.0	4.4		
Approach LOS	B					
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			74.2%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes, Volumes, Timings
8: Elizabeth Street & Street B

2031 FT PM
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	47	250	2	81	230
Future Volume (vph)	4	47	250	2	81	230
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875		0.999			
Flt Protected	0.996					0.987
Satd. Flow (prot)	1267	0	1359	0	0	1246
Flt Permitted	0.996					0.987
Satd. Flow (perm)	1267	0	1359	0	0	1246
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	51	272	2	88	250
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	274	0	0	338
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.6%			ICU Level of Service B		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 8: Elizabeth Street & Street B

2031 FT PM
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	47	250	2	81	230
Future Volume (Veh/h)	4	47	250	2	81	230
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	51	272	2	88	250
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	699	273			274	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	699	273			274	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	93			93	
cM capacity (veh/h)	378	766			1289	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	55	274	338			
Volume Left	4	0	88			
Volume Right	51	2	0			
cSH	713	1700	1289			
Volume to Capacity	0.08	0.16	0.07			
Queue Length 95th (m)	2.0	0.0	1.8			
Control Delay (s/veh)	10.5	0.0	2.6			
Lane LOS	B		A			
Approach Delay (s/veh)	10.5	0.0	2.6			
Approach LOS	B					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			56.6%	ICU Level of Service	B	
Analysis Period (min)			15			

Lanes, Volumes, Timings
9: Elizabeth Street & Elementary School Access

2031 FT PM
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	10	241	3	12	223
Future Volume (vph)	7	10	241	3	12	223
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922		0.998			
Flt Protected	0.979					0.997
Satd. Flow (prot)	1312	0	1358	0	0	1200
Flt Permitted	0.979					0.997
Satd. Flow (perm)	1312	0	1358	0	0	1200
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	11	262	3	13	242
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	265	0	0	255
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.3%			ICU Level of Service A		
Analysis Period (min)	15					

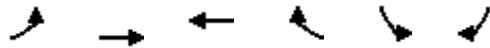
HCM Unsignalized Intersection Capacity Analysis 9: Elizabeth Street & Elementary School Access

2031 FT PM
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	10	241	3	12	223
Future Volume (Veh/h)	7	10	241	3	12	223
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	11	262	3	13	242
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	532	264			265	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	532	264			265	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			99	
cM capacity (veh/h)	503	775			1299	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	19	265	255			
Volume Left	8	0	13			
Volume Right	11	3	0			
cSH	632	1700	1299			
Volume to Capacity	0.03	0.16	0.01			
Queue Length 95th (m)	0.7	0.0	0.2			
Control Delay (s/veh)	10.9	0.0	0.5			
Lane LOS	B		A			
Approach Delay (s/veh)	10.9	0.0	0.5			
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			43.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
10: Killaly St. E & Commercial Access

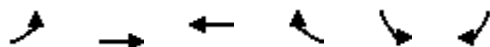
2031 FT PM
02/25/2026



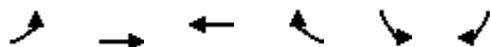
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	163	137	7	10	18
Future Volume (vph)	28	163	137	7	10	18
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.913	
Flt Protected		0.993			0.983	
Satd. Flow (prot)	0	1195	1351	0	1305	0
Flt Permitted		0.993			0.983	
Satd. Flow (perm)	0	1195	1351	0	1305	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	177	149	8	11	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	207	157	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 39.5% ICU Level of Service A						
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 10: Killaly St. E & Commercial Access

2031 FT PM
02/25/2026



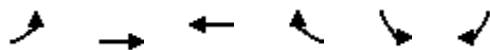
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	163	137	7	10	18
Future Volume (Veh/h)	28	163	137	7	10	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	177	149	8	11	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	157				390	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157				390	153
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	98
cM capacity (veh/h)	1423				601	893
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	207	157	31			
Volume Left	30	0	11			
Volume Right	0	8	20			
cSH	1423	1700	762			
Volume to Capacity	0.02	0.09	0.04			
Queue Length 95th (m)	0.5	0.0	1.0			
Control Delay (s/veh)	1.3	0.0	9.9			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		39.5%		ICU Level of Service		A
Analysis Period (min)		15				



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	171	138	12	18	6
Future Volume (vph)	2	171	138	12	18	6
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.989		0.965	
Flt Protected		0.999			0.964	
Satd. Flow (prot)	0	1203	1346	0	1353	0
Flt Permitted		0.999			0.964	
Satd. Flow (perm)	0	1203	1346	0	1353	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	186	150	13	20	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	188	163	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.4%			ICU Level of Service A		
Analysis Period (min)	15					

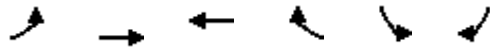
HCM Unsignalized Intersection Capacity Analysis 11: Killaly St. E & Street D

2031 FT PM
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	171	138	12	18	6
Future Volume (Veh/h)	2	171	138	12	18	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	186	150	13	20	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	163				347	157
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	163				347	157
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1416				649	889
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	188	163	27			
Volume Left	2	0	20			
Volume Right	0	13	7			
cSH	1416	1700	698			
Volume to Capacity	0.00*	0.10	0.04			
Queue Length 95th (m)	0.0	0.0	1.0			
Control Delay (s/veh)	0.1	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	0.1	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		26.4%		ICU Level of Service		A
Analysis Period (min)		15				

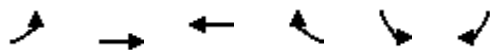
* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	200	141	12	19	7
Future Volume (vph)	2	200	141	12	19	7
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.989		0.963	
Flt Protected					0.965	
Satd. Flow (prot)	0	1204	1346	0	1351	0
Flt Permitted					0.965	
Satd. Flow (perm)	0	1204	1346	0	1351	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	217	153	13	21	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	219	166	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 28.8% ICU Level of Service A						
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 12: Killaly St. E & Street F

2031 FT PM
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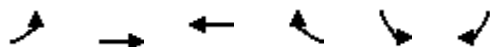


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	200	141	12	19	7
Future Volume (Veh/h)	2	200	141	12	19	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	217	153	13	21	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	166				381	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	166				381	160
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1412				621	886
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	219	166	29			
Volume Left	2	0	21			
Volume Right	0	13	8			
cSH	1412	1700	677			
Volume to Capacity	0.00*	0.10	0.04			
Queue Length 95th (m)	0.0	0.0	1.1			
Control Delay (s/veh)	0.1	0.0	10.6			
Lane LOS	A		B			
Approach Delay (s/veh)	0.1	0.0	10.6			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		28.8%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

Lanes, Volumes, Timings
13: Killaly St. E & Street G

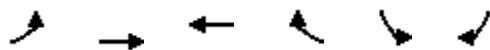
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	218	149	10	16	4
Future Volume (vph)	1	218	149	10	16	4
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.991		0.974	
Flt Protected					0.961	
Satd. Flow (prot)	0	1204	1349	0	1361	0
Flt Permitted					0.961	
Satd. Flow (perm)	0	1204	1349	0	1361	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	237	162	11	17	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	238	173	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 29.0%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 13: Killaly St. E & Street G

2031 FT PM
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	218	149	10	16	4
Future Volume (Veh/h)	1	218	149	10	16	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	237	162	11	17	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	173				407	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	173				407	168
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1404				600	877
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	238	173	21			
Volume Left	1	0	17			
Volume Right	0	11	4			
cSH	1404	1700	639			
Volume to Capacity	0.00*	0.10	0.03			
Queue Length 95th (m)	0.0	0.0	0.8			
Control Delay (s/veh)	0.0	0.0	10.8			
Lane LOS	A		B			
Approach Delay (s/veh)	0.0	0.0	10.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		29.0%		ICU Level of Service	A	
Analysis Period (min)		15				

* Value less than 0.01.

Lanes, Volumes, Timings
14: Street E & Killaly St. E

2031 FT PM
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	187	1	0	143	6	3	0	7	10	0	5
Future Volume (vph)	2	187	1	0	143	6	3	0	7	10	0	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.999			0.994			0.902			0.958	
Flt Protected								0.987			0.967	
Satd. Flow (prot)	0	1452	0	0	1445	0	0	1294	0	0	1347	0
Flt Permitted								0.987			0.967	
Satd. Flow (perm)	0	1452	0	0	1445	0	0	1294	0	0	1347	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	203	1	0	155	7	3	0	8	11	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	162	0	0	11	0	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 24.7%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

14: Street E & Killaly St. E

2031 FT PM

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	187	1	0	143	6	3	0	7	10	0	5
Future Volume (Veh/h)	2	187	1	0	143	6	3	0	7	10	0	5
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	203	1	0	155	7	3	0	8	11	0	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	162			204			371	370	204	374	367	159
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			204			371	370	204	374	367	159
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	98	100	99
cM capacity (veh/h)	1417			1368			582	559	837	577	561	887
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	206	162	11	16								
Volume Left	2	0	3	11								
Volume Right	1	7	8	5								
cSH	1417	1368	748	648								
Volume to Capacity	0.00*	0.00	0.01	0.02								
Queue Length 95th (m)	0.0	0.0	0.4	0.6								
Control Delay (s/veh)	0.1	0.0	9.9	10.7								
Lane LOS	A		A	B								
Approach Delay (s/veh)	0.1	0.0	9.9	10.7								
Approach LOS			A	B								
Intersection Summary												
Average Delay				0.8								
Intersection Capacity Utilization				24.7%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
15: Lorraine Road & Site Access

2031 FT PM
02/25/2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	13	8	103	162	6
Future Volume (vph)	7	13	8	103	162	6
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914				0.995	
Flt Protected	0.982			0.996		
Satd. Flow (prot)	1305	0	0	1199	1354	0
Flt Permitted	0.982			0.996		
Satd. Flow (perm)	1305	0	0	1199	1354	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	176.2			135.3	371.1	
Travel Time (s)	15.9			8.1	22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	14	9	112	176	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	121	183	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 15: Lorraine Road & Site Access

2031 FT PM
02/25/2026

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	13	8	103	162	6
Future Volume (Veh/h)	7	13	8	103	162	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	14	9	112	176	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	310	180	183			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	310	180	183			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	99			
cM capacity (veh/h)	678	863	1392			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	121	183			
Volume Left	8	9	0			
Volume Right	14	0	7			
cSH	785	1392	1700			
Volume to Capacity	0.03	0.00*	0.11			
Queue Length 95th (m)	0.7	0.2	0.0			
Control Delay (s/veh)	9.7	0.6	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.7	0.6	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay				0.9		
Intersection Capacity Utilization				28.6%	ICU Level of Service	A
Analysis Period (min)				15		
* Value less than 0.01.						

Lanes, Volumes, Timings
16: Lorraine Road & Street A

2031 FT PM
02/25/2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	30	18	93	139	14
Future Volume (vph)	12	30	18	93	139	14
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.903				0.988	
Flt Protected	0.986			0.992		
Satd. Flow (prot)	1295	0	0	1253	1344	0
Flt Permitted	0.986			0.992		
Satd. Flow (perm)	1295	0	0	1253	1344	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	186.1			371.1	118.9	
Travel Time (s)	16.7			22.3	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	33	20	101	151	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	121	166	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.2%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
16: Lorraine Road & Street A

2031 FT PM
02/25/2026

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	30	18	93	139	14
Future Volume (Veh/h)	12	30	18	93	139	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	33	20	101	151	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	300	159	166			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300	159	166			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	96	99			
cM capacity (veh/h)	682	887	1412			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	46	121	166			
Volume Left	13	20	0			
Volume Right	33	0	15			
cSH	817	1412	1700			
Volume to Capacity	0.06	0.01	0.10			
Queue Length 95th (m)	1.4	0.3	0.0			
Control Delay (s/veh)	9.7	1.3	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.7	1.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			33.2%	ICU Level of Service		A
Analysis Period (min)			15			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	569	81	8	506	113	0	0	10	0	0	213
Future Volume (vph)	387	569	81	8	506	113	0	0	10	0	0	213
Ideal Flow (vphpl)	1504	1388	1483	1483	1483	1483	1483	1483	1351	1483	1483	1351
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.976				0.865			0.865
Flt Protected	0.950				0.999							
Satd. Flow (prot)	1401	1335	0	0	1418	0	0	0	1146	0	0	1146
Flt Permitted	0.950				0.999							
Satd. Flow (perm)	1401	1335	0	0	1418	0	0	0	1146	0	0	1146
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	618	88	9	550	123	0	0	11	0	0	232
Shared Lane Traffic (%)												
Lane Group Flow (vph)	421	706	0	0	682	0	0	0	11	0	0	232
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.34	1.48	1.37	1.37	1.37	1.37	1.37	1.37	1.53	1.37	1.37	1.53
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	97.9%											
Analysis Period (min)	15											
ICU Level of Service F												

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT PM
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	569	81	8	506	113	0	0	10	0	0	213
Future Volume (Veh/h)	387	569	81	8	506	113	0	0	10	0	0	213
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	618	88	9	550	123	0	0	11	0	0	232
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	307											
pX, platoon unblocked	0.83							0.83	0.83	0.83	0.83	0.83
vC, conflicting volume	673				706				2366	2195	662	2101
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	507				706				2539	2334	662	2221
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1
tC, 2 stage (s)												
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	52				99				100	100	98	100
cM capacity (veh/h)	881				892				5	16	462	16
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	421	706	682	11	232							
Volume Left	421	0	9	0	0							
Volume Right	0	88	123	11	232							
cSH	881	1700	892	462	518							
Volume to Capacity	0.48	0.42	0.01	0.02	0.45							
Queue Length 95th (m)	21.0	0.0	0.2	0.6	18.3							
Control Delay (s/veh)	12.8	0.0	0.3	13.0	17.4							
Lane LOS	B		A	B	C							
Approach Delay (s/veh)	4.8		0.3	13.0	17.4							
Approach LOS				B	C							
Intersection Summary												
Average Delay				4.8								
Intersection Capacity Utilization				97.9%	ICU Level of Service				F			
Analysis Period (min)				15								

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	659	153	86	563	303	237	261	80	462	228	152
Future Volume (vph)	176	659	153	86	563	303	237	261	80	462	228	152
Ideal Flow (vphpl)	1504	1629	1351	1504	1629	1351	1504	1388	1388	1504	1629	1351
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		0.0	115.0		25.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		7.5	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					1.00						
Frt			0.850			0.850		0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1287	1429	1083	1401	1369	1073	1415	1278	0	1335	1597	957
Flt Permitted	0.242			0.146			0.592			0.439		
Satd. Flow (perm)	328	1429	1083	215	1369	1069	882	1278	0	617	1597	957
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			166			203		22				165
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			529.0			290.6			158.6	
Travel Time (s)		21.0			27.2			20.9			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	191	716	166	93	612	329	258	284	87	502	248	165
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	716	166	93	612	329	258	371	0	502	248	165
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.34	1.22	1.53	1.34	1.22	1.53	1.34	1.48	1.48	1.34	1.22	1.53
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

2031 FT SAT

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	32.9	32.9	32.9	32.9	32.9	32.9	32.4	32.4		32.4	32.4	32.4
Total Split (s)	42.9	42.9	42.9	42.9	42.9	42.9	37.4	37.4		37.4	37.4	37.4
Total Split (%)	53.4%	53.4%	53.4%	53.4%	53.4%	53.4%	46.6%	46.6%		46.6%	46.6%	46.6%
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	35.0	30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.4	5.4		5.4	5.4	5.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.4	7.4		7.4	7.4	7.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Flash Don't Walk (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	0
Act Effect Green (s)	35.0	35.0	35.0	35.0	35.0	35.0	30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.37	0.37		0.37	0.37	0.37
v/c Ratio	1.35	1.15	0.29	1.00	1.03	0.57	0.78	0.76		2.18	0.42	0.36
Control Delay (s/veh)	220.3	110.3	4.0	124.4	69.1	10.8	41.7	32.5		566.4	21.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	220.3	110.3	4.0	124.4	69.1	10.8	41.7	32.5		566.4	21.3	5.5
LOS	F	F	A	F	E	B	D	C		F	C	A
Approach Delay (s/veh)		113.4			55.5			36.3			317.5	
Approach LOS		F			E			D			F	

Intersection Summary

Area Type: Other

Cycle Length: 80.3

Actuated Cycle Length: 80.3

Natural Cycle: 130

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 2.18

Intersection Signal Delay (s/veh): 134.9

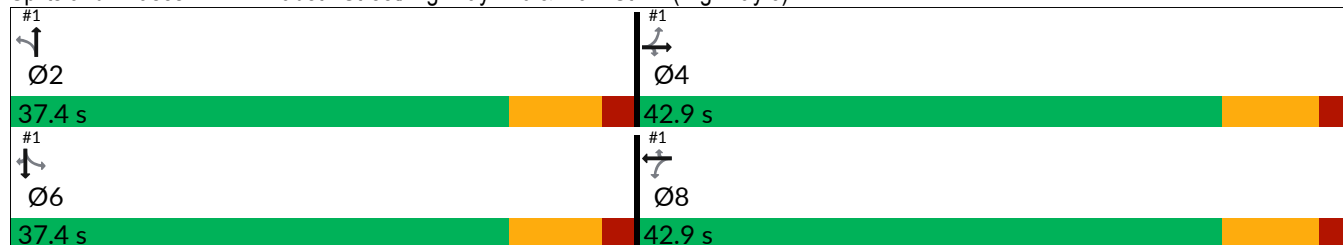
Intersection LOS: F

Intersection Capacity Utilization 136.3%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)



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Queues

2031 FT SAT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	191	716	166	93	612	329	258	371	502	248	165
v/c Ratio	1.35	1.15	0.29	1.00	1.03	0.57	0.78	0.76	2.18	0.42	0.36
Control Delay (s/veh)	220.3	110.3	4.0	124.4	69.1	10.8	41.7	32.5	566.4	21.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	220.3	110.3	4.0	124.4	69.1	10.8	41.7	32.5	566.4	21.3	5.5
Queue Length 50th (m)	~43.7	~151.0	0.0	14.5	~115.0	13.1	36.2	50.1	~137.8	29.3	0.0
Queue Length 95th (m)	#86.9	#223.4	11.3	#45.5	#191.7	40.0	#77.7	#96.6	#165.7	49.7	14.0
Internal Link Dist (m)	383.5				505.0				266.6		134.6
Turn Bay Length (m)	115.0	110.0		100.0			30.0	100.0	115.0		25.0
Base Capacity (vph)	142	622	565	93	596	580	329	491	230	596	460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.35	1.15	0.29	1.00	1.03	0.57	0.78	0.76	2.18	0.42	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	341	256	87	10	295	115	143	159	26	288	372	291
Future Volume (vph)	341	256	87	10	295	115	143	159	26	288	372	291
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1381	1226	1236	1381	1177	1236	1381	1423	0	1381	1454	1236
Flt Permitted	0.374			0.589			0.367			0.332		
Satd. Flow (perm)	544	1226	1236	856	1177	1236	534	1423	0	483	1454	1236
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95			87		6				316
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	371	278	95	11	321	125	155	173	28	313	404	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	371	278	95	11	321	125	155	201	0	313	404	316
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	11.0	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	23.6	70.6	70.6	47.0	47.0	47.0	10.0	24.9		24.4	39.4	39.4
Total Split (%)	19.7%	58.8%	58.8%	39.2%	39.2%	39.2%	8.3%	20.8%		20.3%	32.8%	32.8%
Maximum Green (s)	21.1	67.1	67.1	43.5	43.5	43.5	7.5	21.4		21.9	35.9	35.9
Yellow Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.5	3.5	3.5	3.5	3.5	3.5	2.5	3.5		2.5	3.5	3.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	68.1	67.1	67.1	43.5	43.5	43.5	30.0	21.5		46.9	35.9	35.9
Actuated g/C Ratio	0.57	0.56	0.56	0.36	0.36	0.36	0.25	0.18		0.39	0.30	0.30

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Synchro 11 Report
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Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2031 FT SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.82	0.41	0.13	0.04	0.75	0.25	0.83	0.78		0.89	0.93	0.53
Control Delay (s/veh)	32.0	17.3	2.8	25.3	46.4	10.9	66.5	66.5		57.7	70.6	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	32.0	17.3	2.8	25.3	46.4	10.9	66.5	66.5		57.7	70.6	7.1
LOS	C	B	A	C	D	B	E	E		E	E	A
Approach Delay (s/veh)		22.8			36.2			66.5			47.3	
Approach LOS		C			D			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.93

Intersection Signal Delay (s/veh): 40.9

Intersection LOS: D

Intersection Capacity Utilization 92.7%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

#2 	#2 	#2 
Ø1	Ø2 (R)	Ø4
	24.9 s	70.6 s
#2 	#2 	#2 
Ø5	Ø6 (R)	Ø7
10 s	39.4 s	23.6 s
		47 s

Queues

2: Snider Road & Main St. E. (Highway 3)

2031 FT SAT

02/25/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	371	278	95	11	321	125	155	201	313	404	316
v/c Ratio	0.82	0.41	0.13	0.04	0.75	0.25	0.83	0.78	0.89	0.93	0.53
Control Delay (s/veh)	32.0	17.3	2.8	25.3	46.4	10.9	66.5	66.5	57.7	70.6	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.0	17.3	2.8	25.3	46.4	10.9	66.5	66.5	57.7	70.6	7.1
Queue Length 50th (m)	52.5	43.1	0.0	1.8	82.0	6.2	26.4	47.3	61.3	98.5	0.0
Queue Length 95th (m)	#91.9	67.3	7.9	6.1	#131.2	20.6	#60.1	#85.9	#102.9	#161.9	23.7
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	455	685	733	310	426	503	186	259	352	434	591
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.41	0.13	0.04	0.75	0.25	0.83	0.78	0.89	0.93	0.53

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FT SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	366	111	9	333	2	61	7	25	0	3	17
Future Volume (vph)	20	366	111	9	333	2	61	7	25	0	3	17
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.964			0.884	
Flt Protected		0.997			0.999			0.968				
Satd. Flow (prot)	0	1028	1137	0	994	1126	0	1365	0	0	1296	0
Flt Permitted		0.997			0.999			0.968				
Satd. Flow (perm)	0	1028	1137	0	994	1126	0	1365	0	0	1296	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	22	398	121	10	362	2	66	8	27	0	3	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	420	121	0	372	2	0	101	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	75.2%											
Analysis Period (min)	15											
ICU Level of Service D												

HCM Unsignalized Intersection Capacity Analysis

3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2031 FT SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	366	111	9	333	2	61	7	25	0	3	17
Future Volume (Veh/h)	20	366	111	9	333	2	61	7	25	0	3	17
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	398	121	10	362	2	66	8	27	0	3	18
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	364			519			844	826	398	855	945	362
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	364			519			844	826	398	855	945	362
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			75	97	96	100	99	97
cM capacity (veh/h)	1195			1052			269	299	652	256	255	685
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	420	121	372	2	101	21						
Volume Left	22	0	10	0	66	0						
Volume Right	0	121	0	2	27	18						
cSH	1195	1700	1052	1700	322	552						
Volume to Capacity	0.02	0.07	0.00*	0.00*	0.31	0.04						
Queue Length 95th (m)	0.5	0.0	0.2	0.0	10.5	0.9						
Control Delay (s/veh)	0.6	0.0	0.3	0.0	21.2	11.8						
Lane LOS	A		A		C	B						
Approach Delay (s/veh)	0.5		0.3		21.2	11.8						
Approach LOS					C	B						
Intersection Summary												
Average Delay	2.7											
Intersection Capacity Utilization	75.2%			ICU Level of Service			D					
Analysis Period (min)	15											

* Value less than 0.01.

Lanes, Volumes, Timings
4: Killaly St. E & Lorraine Road

2031 FT SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	174	8	6	105	71	3	2	9	145	7	5
Future Volume (vph)	8	174	8	6	105	71	3	2	9	145	7	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.947			0.910			0.996	
Flt Protected		0.998			0.998			0.990			0.956	
Satd. Flow (prot)	0	1405	0	0	1322	0	0	1312	0	0	1385	0
Flt Permitted		0.998			0.998			0.990			0.956	
Satd. Flow (perm)	0	1405	0	0	1322	0	0	1312	0	0	1385	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	9	189	9	7	114	77	3	2	10	158	8	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	198	0	0	15	0	0	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.1%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

4: Killaly St. E & Lorraine Road

2031 FT SAT

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	174	8	6	105	71	3	2	9	145	7	5
Future Volume (Veh/h)	8	174	8	6	105	71	3	2	9	145	7	5
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	189	9	7	114	77	3	2	10	158	8	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	191			198			387	417	194	389	383	153
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191			198			387	417	194	389	383	153
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	100	99	72	99	99
cM capacity (veh/h)	1383			1375			557	522	848	557	546	894
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	207	198	15	171								
Volume Left	9	7	3	158								
Volume Right	9	77	10	5								
cSH	1383	1375	714	562								
Volume to Capacity	0.00*	0.00*	0.02	0.30								
Queue Length 95th (m)	0.2	0.1	0.5	10.2								
Control Delay (s/veh)	0.4	0.3	10.1	14.2								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.4	0.3	10.1	14.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay				4.6								
Intersection Capacity Utilization				41.1%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FT SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Future Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.979			0.984			0.903	
Flt Protected		0.976			0.998			0.997			0.991	
Satd. Flow (prot)	0	1358	0	0	1284	0	0	1439	0	0	1310	0
Flt Permitted		0.976			0.998			0.997			0.991	
Satd. Flow (perm)	0	1358	0	0	1284	0	0	1439	0	0	1310	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	152	147	4	7	158	30	2	27	4	52	25	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	0	0	195	0	0	33	0	0	273	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 67.6%	ICU Level of Service C											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2031 FT SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	135	4	6	145	28	2	25	4	48	23	180
Future Volume (Veh/h)	140	135	4	6	145	28	2	25	4	48	23	180
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	147	4	7	158	30	2	27	4	52	25	196
Pedestrians					1						1	
Lane Width (m)					3.6						3.6	
Walking Speed (m/s)					1.2						1.2	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	189			151			849	656	150	660	643	174
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	189			151			849	656	150	660	643	174
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			100			99	92	100	84	93	78
cM capacity (veh/h)	1372			1430			189	342	896	321	346	871
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	303	195	33	273								
Volume Left	152	7	2	52								
Volume Right	4	30	4	196								
cSH	1372	1430	351	595								
Volume to Capacity	0.11	0.00*	0.09	0.46								
Queue Length 95th (m)	3.0	0.1	2.5	19.2								
Control Delay (s/veh)	4.5	0.3	16.3	16.1								
Lane LOS	A	A	C	C								
Approach Delay (s/veh)	4.5	0.3	16.3	16.1								
Approach LOS			C	C								
Intersection Summary												
Average Delay			7.9									
Intersection Capacity Utilization			67.6%		ICU Level of Service				C			
Analysis Period (min)			15									

* Value less than 0.01.

Lanes, Volumes, Timings
7: Elizabeth Street & Street A

2031 FT SAT
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	179	399	31	149	286
Future Volume (vph)	49	179	399	31	149	286
Ideal Flow (vphpl)	1504	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.990			
Flt Protected	0.950					0.983
Satd. Flow (prot)	1401	1126	1347	0	0	1183
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1401	1126	1347	0	0	1183
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	195	434	34	162	311
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	195	468	0	0	473
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.34	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	80.8%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

7: Elizabeth Street & Street A

2031 FT SAT
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	179	399	31	149	286
Future Volume (Veh/h)	49	179	399	31	149	286
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	195	434	34	162	311
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						290
pX, platoon unblocked	0.96					
vC, conflicting volume	1086	451			468	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1069	451			468	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	74	68			85	
cM capacity (veh/h)	201	608			1094	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	53	195	468	473		
Volume Left	53	0	0	162		
Volume Right	0	195	34	0		
cSH	201	608	1700	1094		
Volume to Capacity	0.26	0.32	0.28	0.15		
Queue Length 95th (m)	8.2	11.0	0.0	4.2		
Control Delay (s/veh)	29.3	13.7	0.0	4.1		
Lane LOS	D	B		A		
Approach Delay (s/veh)	17.0		0.0	4.1		
Approach LOS	C					
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			80.8%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes, Volumes, Timings
8: Elizabeth Street & Street B

2031 FT SAT
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	77	353	4	64	271
Future Volume (vph)	8	77	353	4	64	271
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878		0.999			
Flt Protected	0.995					0.991
Satd. Flow (prot)	1270	0	1359	0	0	1251
Flt Permitted	0.995					0.991
Satd. Flow (perm)	1270	0	1359	0	0	1251
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	84	384	4	70	295
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	388	0	0	365
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 68.7%			ICU Level of Service C			
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 8: Elizabeth Street & Street B

2031 FT SAT
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	77	353	4	64	271
Future Volume (Veh/h)	8	77	353	4	64	271
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	84	384	4	70	295
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	821	386			388	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	821	386			388	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	87			94	
cM capacity (veh/h)	324	662			1170	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	93	388	365			
Volume Left	9	0	70			
Volume Right	84	4	0			
cSH	601	1700	1170			
Volume to Capacity	0.15	0.23	0.06			
Queue Length 95th (m)	4.4	0.0	1.5			
Control Delay (s/veh)	12.1	0.0	2.1			
Lane LOS	B		A			
Approach Delay (s/veh)	12.1	0.0	2.1			
Approach LOS	B					
Intersection Summary						
Average Delay		2.2				
Intersection Capacity Utilization		68.7%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings
9: Elizabeth Street & Elementary School Access

2031 FT SAT
02/25/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	356	0	0	278
Future Volume (vph)	0	0	356	0	0	278
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1454	0	1361	0	0	1204
Flt Permitted						
Satd. Flow (perm)	1454	0	1361	0	0	1204
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	387	0	0	302
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	387	0	0	302
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
9: Elizabeth Street & Elementary School Access

2031 FT SAT
02/25/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	356	0	0	278
Future Volume (Veh/h)	0	0	356	0	0	278
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	387	0	0	302
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	689	387			387	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	689	387			387	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	412	661			1171	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	387	302			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1171			
Volume to Capacity	0.00	0.23	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		29.0%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
10: Killaly St. E & Commercial Access

2031 FT SAT
02/25/2026

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	143	139	3	6	18
Future Volume (vph)	27	143	139	3	6	18
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.997		0.900	
Flt Protected		0.992			0.987	
Satd. Flow (prot)	0	1194	1357	0	1292	0
Flt Permitted		0.992			0.987	
Satd. Flow (perm)	0	1194	1357	0	1292	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	155	151	3	7	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	184	154	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.6%			ICU Level of Service A		
Analysis Period (min)	15					

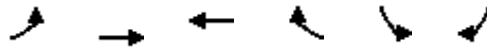
HCM Unsignalized Intersection Capacity Analysis 10: Killaly St. E & Commercial Access

2031 FT SAT
02/25/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	143	139	3	6	18
Future Volume (Veh/h)	27	143	139	3	6	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	155	151	3	7	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	154				366	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154				366	153
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	98
cM capacity (veh/h)	1426				621	894
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	184	154	27			
Volume Left	29	0	7			
Volume Right	0	3	20			
cSH	1426	1700	802			
Volume to Capacity	0.02	0.09	0.03			
Queue Length 95th (m)	0.5	0.0	0.8			
Control Delay (s/veh)	1.3	0.0	9.6			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			37.6%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
11: Killaly St. E & Street D

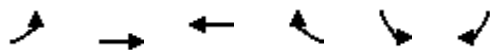
2031 FT SAT
02/25/2026



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	143	130	5	17	12
Future Volume (vph)	6	143	130	5	17	12
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.995		0.943	
Flt Protected		0.998			0.972	
Satd. Flow (prot)	0	1202	1354	0	1333	0
Flt Permitted		0.998			0.972	
Satd. Flow (perm)	0	1202	1354	0	1333	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	155	141	5	18	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	162	146	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 29.2%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 11: Killaly St. E & Street D

2031 FT SAT
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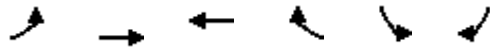


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	143	130	5	17	12
Future Volume (Veh/h)	6	143	130	5	17	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	155	141	5	18	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	146				313	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	146				313	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1436				677	904
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	162	146	31			
Volume Left	7	0	18			
Volume Right	0	5	13			
cSH	1436	1700	757			
Volume to Capacity	0.00*	0.09	0.04			
Queue Length 95th (m)	0.1	0.0	1.0			
Control Delay (s/veh)	0.4	0.0	10.0			
Lane LOS	A		A			
Approach Delay (s/veh)	0.4	0.0	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			29.2%	ICU Level of Service		A
Analysis Period (min)			15			

* Value less than 0.01.

Lanes, Volumes, Timings
12: Killaly St. E & Street F

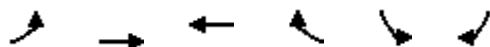
2031 FT SAT
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	161	110	5	17	14
Future Volume (vph)	7	161	110	5	17	14
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.995		0.939	
Flt Protected		0.998			0.973	
Satd. Flow (prot)	0	1202	1354	0	1328	0
Flt Permitted		0.998			0.973	
Satd. Flow (perm)	0	1202	1354	0	1328	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	175	120	5	18	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	183	125	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 30.4%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 12: Killaly St. E & Street F

2031 FT SAT
02/25/2026

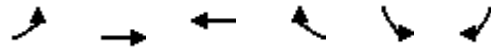


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	161	110	5	17	14
Future Volume (Veh/h)	7	161	110	5	17	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	175	120	5	18	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	125				314	123
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	125				314	123
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	98
cM capacity (veh/h)	1462				676	929
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	183	125	33			
Volume Left	8	0	18			
Volume Right	0	5	15			
cSH	1462	1700	771			
Volume to Capacity	0.00*	0.07	0.04			
Queue Length 95th (m)	0.1	0.0	1.1			
Control Delay (s/veh)	0.4	0.0	9.9			
Lane LOS	A		A			
Approach Delay (s/veh)	0.4	0.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization		30.4%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

Lanes, Volumes, Timings
13: Killaly St. E & Street G

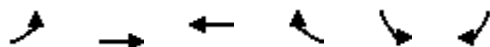
2031 FT SAT
02/25/2026



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		LT	LT		LT	
Traffic Volume (vph)	4	175	108	5	14	7
Future Volume (vph)	4	175	108	5	14	7
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.994		0.953	
Flt Protected		0.999			0.968	
Satd. Flow (prot)	0	1203	1353	0	1341	0
Flt Permitted		0.999			0.968	
Satd. Flow (perm)	0	1203	1353	0	1341	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	190	117	5	15	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	194	122	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 29.2%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 13: Killaly St. E & Street G

2031 FT SAT
02/25/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	175	108	5	14	7
Future Volume (Veh/h)	4	175	108	5	14	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	190	117	5	15	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	122				318	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122				318	120
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	1465				674	932
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	194	122	23			
Volume Left	4	0	15			
Volume Right	0	5	8			
cSH	1465	1700	746			
Volume to Capacity	0.00*	0.07	0.03			
Queue Length 95th (m)	0.1	0.0	0.8			
Control Delay (s/veh)	0.2	0.0	10.0			
Lane LOS	A		A			
Approach Delay (s/veh)	0.2	0.0	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		29.2%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

Lanes, Volumes, Timings
14: Street E & Killaly St. E

2031 FT SAT
02/25/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	154	3	0	121	3	5	0	6	9	0	10
Future Volume (vph)	5	154	3	0	121	3	5	0	6	9	0	10
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997			0.921			0.929	
Flt Protected		0.999						0.980			0.977	
Satd. Flow (prot)	0	1450	0	0	1450	0	0	1312	0	0	1320	0
Flt Permitted		0.999						0.980			0.977	
Satd. Flow (perm)	0	1450	0	0	1450	0	0	1312	0	0	1320	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	167	3	0	132	3	5	0	7	10	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	0	0	135	0	0	12	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 25.8%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

14: Street E & Killaly St. E

2031 FT SAT

02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	154	3	0	121	3	5	0	6	9	0	10
Future Volume (Veh/h)	5	154	3	0	121	3	5	0	6	9	0	10
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	167	3	0	132	3	5	0	7	10	0	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	135			170			323	314	169	319	314	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	135			170			323	314	169	319	314	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	98	100	99
cM capacity (veh/h)	1449			1407			621	600	876	627	600	916
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	175	135	12	21								
Volume Left	5	0	5	10								
Volume Right	3	3	7	11								
cSH	1449	1407	748	751								
Volume to Capacity	0.00*	0.00	0.02	0.03								
Queue Length 95th (m)	0.1	0.0	0.4	0.7								
Control Delay (s/veh)	0.2	0.0	9.9	9.9								
Lane LOS	A		A	A								
Approach Delay (s/veh)	0.2	0.0	9.9	9.9								
Approach LOS			A	A								
Intersection Summary												
Average Delay				1.1								
Intersection Capacity Utilization				25.8%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

Lanes, Volumes, Timings
15: Lorraine Road & Site Access

2031 FT SAT
02/25/2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	12	4	79	140	2
Future Volume (vph)	8	12	4	79	140	2
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.920				0.998	
Flt Protected	0.980			0.998		
Satd. Flow (prot)	1311	0	0	1202	1358	0
Flt Permitted	0.980			0.998		
Satd. Flow (perm)	1311	0	0	1202	1358	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	176.2			135.3	371.1	
Travel Time (s)	15.9			8.1	22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	13	4	86	152	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	90	154	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 15: Lorraine Road & Site Access

2031 FT SAT
02/25/2026

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	12	4	79	140	2
Future Volume (Veh/h)	8	12	4	79	140	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	13	4	86	152	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	247	153	154			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	247	153	154			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	739	893	1426			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	90	154			
Volume Left	9	4	0			
Volume Right	13	0	2			
cSH	823	1426	1700			
Volume to Capacity	0.03	0.00*	0.09			
Queue Length 95th (m)	0.7	0.1	0.0			
Control Delay (s/veh)	9.5	0.4	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.5	0.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay				0.9		
Intersection Capacity Utilization				21.5%	ICU Level of Service	A
Analysis Period (min)				15		
* Value less than 0.01.						

Lanes, Volumes, Timings
16: Lorraine Road & Street A

2031 FT SAT
02/25/2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	26	8	71	116	6
Future Volume (vph)	14	26	8	71	116	6
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912	0.993				
Flt Protected	0.983	0.995				
Satd. Flow (prot)	1303	0	0	1256	1351	0
Flt Permitted	0.983	0.995				
Satd. Flow (perm)	1303	0	0	1256	1351	0
Link Speed (k/h)	40	60				
Link Distance (m)	186.1	371.1				
Travel Time (s)	16.7	22.3				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	28	9	77	126	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	0	86	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6	0.0				
Link Offset(m)	0.0	0.0				
Crosswalk Width(m)	4.8	4.8				
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25	15		
Sign Control	Stop	Free			Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 25.4%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 16: Lorraine Road & Street A

2031 FT SAT
02/25/2026

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	26	8	71	116	6
Future Volume (Veh/h)	14	26	8	71	116	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	28	9	77	126	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	225	130	133			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225	130	133			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	97	99			
cM capacity (veh/h)	759	920	1452			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	43	86	133			
Volume Left	15	9	0			
Volume Right	28	0	7			
cSH	857	1452	1700			
Volume to Capacity	0.05	0.00*	0.08			
Queue Length 95th (m)	1.3	0.1	0.0			
Control Delay (s/veh)	9.4	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.4	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	1.8					
Intersection Capacity Utilization	25.4%			ICU Level of Service	A	
Analysis Period (min)	15					
* Value less than 0.01.						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	600	58	5	604	120	0	0	11	0	0	317
Future Volume (vph)	579	600	58	5	604	120	0	0	11	0	0	317
Ideal Flow (vphpl)	1504	1388	1483	1483	1483	1483	1483	1483	1351	1483	1483	1351
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.978				0.865			0.865
Flt Protected	0.950											
Satd. Flow (prot)	1401	1343	0	0	1422	0	0	0	1146	0	0	1146
Flt Permitted	0.950											
Satd. Flow (perm)	1401	1343	0	0	1422	0	0	0	1146	0	0	1146
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	629	652	63	5	657	130	0	0	12	0	0	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	629	715	0	0	792	0	0	0	12	0	0	345
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.34	1.48	1.37	1.37	1.37	1.37	1.37	1.37	1.53	1.37	1.37	1.53
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	105.1%											
Analysis Period (min)	15											
	ICU Level of Service G											

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2031 FT SAT
02/25/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	579	600	58	5	604	120	0	0	11	0	0	317
Future Volume (Veh/h)	579	600	58	5	604	120	0	0	11	0	0	317
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	629	652	63	5	657	130	0	0	12	0	0	345
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)	307											
pX, platoon unblocked	0.77							0.77	0.77	0.77	0.77	0.77
vC, conflicting volume	787				715				3019	2739	684	2654
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	573				715				3475	3111	684	3001
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1
tC, 2 stage (s)												
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	18				99				100	100	97	100
cM capacity (veh/h)	769				885				0	2	449	2
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	629	715	792	12	345							
Volume Left	629	0	5	0	0							
Volume Right	0	63	130	12	345							
cSH	769	1700	885	449	446							
Volume to Capacity	0.82	0.42	0.00*	0.03	0.77							
Queue Length 95th (m)	71.4	0.0	0.1	0.7	53.6							
Control Delay (s/veh)	27.0	0.0	0.2	13.2	35.7							
Lane LOS	D		A	B	E							
Approach Delay (s/veh)	12.7		0.2	13.2	35.7							
Approach LOS				B	E							
Intersection Summary												
Average Delay				11.9								
Intersection Capacity Utilization				105.1%	ICU Level of Service				G			
Analysis Period (min)				15								

* Value less than 0.01.

APPENDIX Q

All-Way Stop Control Warrant

ALL-WAY STOP CONTROL (AWSC) WARRANTS (OTM BOOK 5)

Horizon Year and Analysis Period

2031 Future Total

PROJECT INFORMATION

Analyst Aarzo D
Company C.F. Crozier & Associates
Date 12/20/2023

Jurisdiction City of Port Colborne
Project Name 806 Killaly Street East
Project No. 2183-6543

ROADWAY INFORMATION

East-West Street Killaly Street
North-South Street Elizabeth Street

Major Street East-West
Number of legs 4

Roadway Classification (Minor Street) Urban Arterial Roads

TRAFFIC VOLUMES

Peak Hour	Major Road Approaches							Minor Road Approaches							Pedestrian Crossing Major Road	Pedestrian Crossing Minor Road
	Eastbound			Westbound			Total	Northbound			Southbound			Total		
	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT			
AM	275	203	6	3	290	62	839	3	25	9	52	18	217	324		
PM	100	160	4	7	134	38	443	5	20	3	71	25	128	252		
AHV	94	91	3	3	106	25	321	2	11	3	31	11	86	144	0	0

Parameter	AM	PM	AHV	Threshold
Total vehicle volume on all intersection approaches	1163	695	466	500 veh
Combined vehicle and pedestrian volumes on minor street	324	252	144	200 veh
Combined vehicle and pedestrian volumes on minor street + minor street delay*	40	30	0	150 veh
Volume Split, Minor Road (vehicles only)	0.28	0.36	0.31	30 s
				0.30

Justification 1: Total Vehicle Volume on all Intersection Approaches

Justified? NO

Justification 2A: Combined Vehicle and Pedestrian Volumes on minor street

Justified? NO

Justification 2B: Combined Vehicle and Pedestrian Volumes + Delay on minor street

Justified? NO

Justification 3: Volume Split (vehicles only)

Justified? YES

Conclusion: The results of the calculations show that All-Way Stop Control at this intersection is not justified for the 2031 Future Total analysis period.

* Minor Approach Delay under minor stop control using the "AHV" volumes. Delay must be >30s not just for the AM/PM peak, but for the busiest 8 hours of the day to trigger the threshold for Justification 2.

The All-Way Stop Control justification was done per criteria defined within the Ontario Traffic Manual, Book 5 (December 2021), "All-Way Stop Minimum Volume Warrants"

APPENDIX R

2031 Future Total Detailed Capacity Analysis Optimized

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	219	132	87	360	245	275	311	118	208	187	181
Future Volume (vph)	149	219	132	87	360	245	275	311	118	208	187	181
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		30.0	115.0		25.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00					0.99						
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.289			0.611			0.525			0.950		
Satd. Flow (perm)	455	1535	1403	1048	1471	1380	910	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			153			140			158
Link Speed (k/h)		70			70			50				60
Link Distance (m)		407.5			529.0			290.6				158.6
Travel Time (s)		21.0			27.2			20.9				9.5
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	162	238	143	95	391	266	299	338	128	226	203	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	238	143	95	391	266	299	338	128	226	203	197
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	32.9	32.9	9.5	32.9	32.9	9.5	32.4	32.4	9.5	32.4	32.4
Total Split (s)	14.0	56.0	56.0	10.0	52.0	52.0	18.0	37.7	37.7	16.3	36.0	36.0
Total Split (%)	11.7%	46.7%	46.7%	8.3%	43.3%	43.3%	15.0%	31.4%	31.4%	13.6%	30.0%	30.0%
Maximum Green (s)	10.5	48.1	48.1	6.5	44.1	44.1	14.5	30.3	30.3	12.8	28.6	28.6
Yellow Time (s)	3.5	5.9	5.9	3.5	5.9	5.9	3.5	5.4	5.4	3.5	5.4	5.4
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0	0.0	0.0	-2.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.9	7.9	3.5	5.9	7.9	3.5	5.4	7.4	3.5	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Don't Walk (s)		15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	53.3	43.1	41.1	46.0	37.0	35.0	48.7	32.9	30.9	11.8	28.8	28.8
Actuated g/C Ratio	0.48	0.39	0.37	0.42	0.33	0.32	0.44	0.30	0.28	0.11	0.26	0.26
v/c Ratio	0.51	0.40	0.23	0.20	0.79	0.49	0.61	0.69	0.25	0.70	0.45	0.45
Control Delay (s/veh)	22.3	27.1	4.8	16.6	45.8	15.5	28.5	44.9	6.1	61.4	40.3	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.3	27.1	4.8	16.6	45.8	15.5	28.5	44.9	6.1	61.4	40.3	13.3
LOS	C	C	A	B	D	B	C	D	A	E	D	B
Approach Delay (s/veh)		19.8			31.4			32.0			39.4	
Approach LOS		B			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 110.5

Natural Cycle: 85

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 31.1

Intersection LOS: C

Intersection Capacity Utilization 74.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1  Ø1	#1  Ø2	#1  Ø3	#1  Ø4
16.3 s	37.7 s	10 s	56 s
#1  Ø5	#1  Ø6	#1  Ø7	#1  Ø8
18 s	36 s	14 s	52 s

Queues

2031 FT AM OPT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	162	238	143	95	391	266	299	338	128	226	203	197
v/c Ratio	0.51	0.40	0.23	0.20	0.79	0.49	0.61	0.69	0.25	0.70	0.45	0.45
Control Delay (s/veh)	22.3	27.1	4.8	16.6	45.8	15.5	28.5	44.9	6.1	61.4	40.3	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.3	27.1	4.8	16.6	45.8	15.5	28.5	44.9	6.1	61.4	40.3	13.3
Queue Length 50th (m)	22.4	44.0	0.0	11.7	91.3	20.2	45.6	72.8	0.0	27.4	40.3	7.9
Queue Length 95th (m)	36.9	68.0	13.5	21.3	134.5	45.9	77.6	#124.7	13.2	#44.8	69.4	34.6
Internal Link Dist (m)	383.5			505.0			266.6			134.6		
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		30.0	115.0		25.0
Base Capacity (vph)	319	701	695	470	618	646	500	491	512	351	447	439
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.34	0.21	0.20	0.63	0.41	0.60	0.69	0.25	0.64	0.45	0.45

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FT AM OPT
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Future Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.977			0.966			0.898	
Flt Protected		0.972						0.996			0.991	
Satd. Flow (prot)	0	1356	0	0	1282	0	0	1409	0	0	1304	0
Flt Permitted		0.972						0.996			0.991	
Satd. Flow (perm)	0	1356	0	0	1282	0	0	1409	0	0	1304	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	299	221	7	3	315	67	3	27	10	57	20	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	0	385	0	0	40	0	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	97.0%											
Analysis Period (min)	15											
	ICU Level of Service F											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2031 FT AM OPT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Future Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	299	221	7	3	315	67	3	27	10	57	20	236
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	527	385	40	313								
Volume Left (vph)	299	3	3	57								
Volume Right (vph)	7	67	10	236								
Hadj (s)	0.21	0.12	-0.11	-0.39								
Departure Headway (s)	6.1	6.2	7.5	6.3								
Degree Utilization, x	0.89	0.66	0.08	0.55								
Capacity (veh/h)	586	550	403	542								
Control Delay (s/veh)	38.8	20.7	11.2	16.5								
Approach Delay (s/veh)	38.8	20.7	11.2	16.5								
Approach LOS	E	C	B	C								
Intersection Summary												
Delay				26.9								
Level of Service				D								
Intersection Capacity Utilization				97.0%	ICU Level of Service	F						
Analysis Period (min)				15								

Intersection	
Intersection Delay, s/veh	25.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	275	203	6	3	290	62	3	25	9	52	18	217
Future Vol, veh/h	275	203	6	3	290	62	3	25	9	52	18	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	299	221	7	3	315	67	3	27	10	57	20	236
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	37.1	19.1	11.1	16.3
HCM LOS	E	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	57%	1%	18%
Vol Thru, %	68%	42%	82%	6%
Vol Right, %	24%	1%	17%	76%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	484	355	287
LT Vol	3	275	3	52
Through Vol	25	203	290	18
RT Vol	9	6	62	217
Lane Flow Rate	40	526	386	312
Geometry Grp	1	1	1	1
Degree of Util (X)	0.082	0.876	0.64	0.538
Departure Headway (Hd)	7.374	5.996	5.967	6.204
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	483	610	606	580
Service Time	5.461	3.996	4.018	4.257
HCM Lane V/C Ratio	0.083	0.862	0.637	0.538
HCM Control Delay, s/veh	11.1	37.1	19.1	16.3
HCM Lane LOS	B	E	C	C
HCM 95th-tile Q	0.3	10.1	4.6	3.2

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	519	99	43	419	281	93	265	43	490	361	317
Future Volume (vph)	232	519	99	43	419	281	93	265	43	490	361	317
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		30.0	115.0		25.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor						1.00						
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.212			0.300			0.530			0.950		
Satd. Flow (perm)	334	1535	1403	515	1471	1389	918	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108			159			115			159
Link Speed (k/h)		70			70			50				60
Link Distance (m)		407.5			529.0			290.6				158.6
Travel Time (s)		21.0			27.2			20.9				9.5
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	252	564	108	47	455	305	101	288	47	533	392	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	252	564	108	47	455	305	101	288	47	533	392	345
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		2			Free
Detector Phase	7	4	4	3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.5	32.9	32.9	9.5	32.9		9.5	32.4	32.4	9.5	32.4	
Total Split (s)	32.2	93.7	93.7	11.7	73.2		9.6	37.4	37.4	37.2	65.0	
Total Split (%)	17.9%	52.1%	52.1%	6.5%	40.7%		5.3%	20.8%	20.8%	20.7%	36.1%	
Maximum Green (s)	28.7	85.8	85.8	8.2	65.3		6.1	30.0	30.0	33.7	57.6	
Yellow Time (s)	3.5	5.9	5.9	3.5	5.9		3.5	5.4	5.4	3.5	5.4	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0		0.0	-2.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.9	7.9	3.5	5.9		3.5	5.4	7.4	3.5	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	
Walk Time (s)		5.0	5.0		5.0			5.0	5.0		5.0	
Flash Don't Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	85.3	74.1	72.1	66.3	56.5	164.0	42.3	34.2	32.2	32.0	58.0	164.0
Actuated g/C Ratio	0.52	0.45	0.44	0.40	0.34	1.00	0.26	0.21	0.20	0.20	0.35	1.00
v/c Ratio	0.75	0.81	0.16	0.18	0.90	0.22	0.38	0.84	0.12	0.91	0.65	0.28
Control Delay (s/veh)	37.0	49.7	4.6	21.5	72.6	0.4	43.9	84.5	0.7	85.0	52.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.0	49.7	4.6	21.5	72.6	0.4	43.9	84.5	0.7	85.0	52.8	0.6
LOS	D	D	A	C	E	A	D	F	A	F	D	A
Approach Delay (s/veh)		41.0			42.3			66.1			52.1	
Approach LOS		D			D			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 164

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.91

Intersection Signal Delay (s/veh): 48.6

Intersection LOS: D

Intersection Capacity Utilization 84.3%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1  Ø1	#1  Ø2	#1  Ø3	#1  Ø4
37.2 s	37.4 s	11.7 s	93.7 s
#1  Ø5	#1  Ø6	#1  Ø7	#1  Ø8
9.6 s	65 s	32.2 s	73.2 s

Queues

2031 FT PM OPT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	252	564	108	47	455	305	101	288	47	533	392	345
v/c Ratio	0.75	0.81	0.16	0.18	0.90	0.22	0.38	0.84	0.12	0.91	0.65	0.28
Control Delay (s/veh)	37.0	49.7	4.6	21.5	72.6	0.4	43.9	84.5	0.7	85.0	52.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.0	49.7	4.6	21.5	72.6	0.4	43.9	84.5	0.7	85.0	52.8	0.6
Queue Length 50th (m)	52.3	187.0	0.0	7.9	168.5	0.0	21.6	104.0	0.0	98.8	118.0	0.0
Queue Length 95th (m)	73.7	247.1	12.4	15.0	#237.2	0.0	40.3	#183.8	0.0	#148.5	176.9	0.0
Internal Link Dist (m)	383.5		505.0				266.6				134.6	
Turn Bay Length (m)	115.0	110.0		100.0	30.0		100.0	30.0		115.0	25.0	
Base Capacity (vph)	378	828	790	267	608	1389	264	344	381	624	607	1240
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.68	0.14	0.18	0.75	0.22	0.38	0.84	0.12	0.85	0.65	0.28

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FT PM OPT
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Future Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.972			0.986			0.923	
Flt Protected		0.981			0.998			0.992			0.984	
Satd. Flow (prot)	0	1357	0	0	1283	0	0	1435	0	0	1328	0
Flt Permitted		0.981			0.998			0.992			0.984	
Satd. Flow (perm)	0	1357	0	0	1283	0	0	1435	0	0	1328	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	109	174	4	8	146	41	5	22	3	77	27	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	287	0	0	195	0	0	30	0	0	243	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	64.2%											
Analysis Period (min)	15											
	ICU Level of Service C											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2031 FT PM OPT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Future Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	174	4	8	146	41	5	22	3	77	27	139
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	287	195	30	243								
Volume Left (vph)	109	8	5	77								
Volume Right (vph)	4	41	3	139								
Hadj (s)	0.19	0.09	-0.01	-0.26								
Departure Headway (s)	5.1	5.1	5.6	4.9								
Degree Utilization, x	0.41	0.28	0.05	0.33								
Capacity (veh/h)	671	658	559	672								
Control Delay (s/veh)	11.5	10.1	8.8	10.4								
Approach Delay (s/veh)	11.5	10.1	8.8	10.4								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay				10.7								
Level of Service				B								
Intersection Capacity Utilization				64.2%	ICU Level of Service	C						
Analysis Period (min)				15								

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	100	160	4	7	134	38	5	20	3	71	25	128
Future Vol, veh/h	100	160	4	7	134	38	5	20	3	71	25	128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	109	174	4	8	146	41	5	22	3	77	27	139
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	11.3	9.7	8.8	10.3
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	38%	4%	32%
Vol Thru, %	71%	61%	75%	11%
Vol Right, %	11%	2%	21%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	264	179	224
LT Vol	5	100	7	71
Through Vol	20	160	134	25
RT Vol	3	4	38	128
Lane Flow Rate	30	287	195	243
Geometry Grp	1	1	1	1
Degree of Util (X)	0.047	0.394	0.262	0.328
Departure Headway (Hd)	5.502	4.949	4.853	4.848
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	720	732	735
Service Time	3.502	3.025	2.936	2.923
HCM Lane V/C Ratio	0.046	0.399	0.266	0.331
HCM Control Delay, s/veh	8.8	11.3	9.7	10.3
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.1	1.9	1	1.4

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	659	153	86	563	303	237	261	80	462	228	152
Future Volume (vph)	176	659	153	86	563	303	237	261	80	462	228	152
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		30.0	115.0		25.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor						1.00						
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.182			0.172			0.605			0.950		
Satd. Flow (perm)	287	1535	1403	295	1471	1389	1048	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			136			95			136
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			529.0			290.6			158.6	
Travel Time (s)		21.0			27.2			20.9			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	191	716	166	93	612	329	258	284	87	502	248	165
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	716	166	93	612	329	258	284	87	502	248	165
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		2			Free
Detector Phase	7	4	4	3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	8.0	27.9	27.9	8.0	27.9		8.0	27.4	27.4	8.0	27.4	
Total Split (s)	21.0	109.0	109.0	10.0	98.0		21.0	40.0	40.0	36.0	55.0	
Total Split (%)	10.8%	55.9%	55.9%	5.1%	50.3%		10.8%	20.5%	20.5%	18.5%	28.2%	
Maximum Green (s)	18.0	101.1	101.1	7.0	90.1		18.0	32.6	32.6	33.0	47.6	
Yellow Time (s)	3.0	5.9	5.9	3.0	5.9		3.0	5.4	5.4	3.0	5.4	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0		0.0	-2.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	5.9	7.9	3.0	5.9		3.0	5.4	7.4	3.0	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	
Walk Time (s)		5.0	5.0		5.0			5.0	5.0		5.0	
Flash Don't Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	105.4	92.4	90.4	93.5	83.5	184.4	54.9	34.8	32.8	32.7	47.9	184.4
Actuated g/C Ratio	0.57	0.50	0.49	0.51	0.45	1.00	0.30	0.19	0.18	0.18	0.26	1.00
v/c Ratio	0.71	0.93	0.22	0.47	0.92	0.24	0.70	0.91	0.26	0.94	0.56	0.13
Control Delay (s/veh)	34.1	62.3	6.8	26.3	67.2	0.4	58.7	106.0	10.9	100.5	67.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.1	62.3	6.8	26.3	67.2	0.4	58.7	106.0	10.9	100.5	67.0	0.2
LOS	C	E	A	C	E	A	E	F	B	F	E	A
Approach Delay (s/veh)		48.7			42.3			73.4			73.3	
Approach LOS		D			D			E			E	

Intersection Summary

Area Type: Other

Cycle Length: 195

Actuated Cycle Length: 184.4

Natural Cycle: 120

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.94

Intersection Signal Delay (s/veh): 57.3

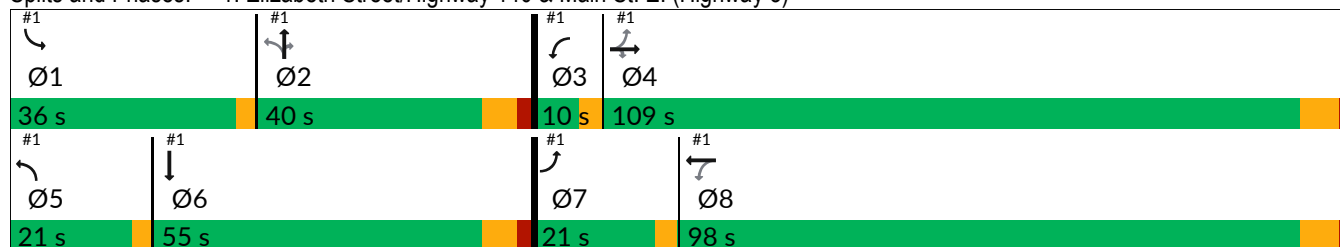
Intersection LOS: E

Intersection Capacity Utilization 88.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)



2031 FT SAT Test 2:59 pm 01/29/2026

Synchro 11 Report

Page 2

Queues

2031 FT SAT OPT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	191	716	166	93	612	329	258	284	87	502	248	165
v/c Ratio	0.71	0.93	0.22	0.47	0.92	0.24	0.70	0.91	0.26	0.94	0.56	0.13
Control Delay (s/veh)	34.1	62.3	6.8	26.3	67.2	0.4	58.7	106.0	10.9	100.5	67.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.1	62.3	6.8	26.3	67.2	0.4	58.7	106.0	10.9	100.5	67.0	0.2
Queue Length 50th (m)	38.3	281.8	7.3	16.2	253.6	0.0	79.4	122.8	0.0	112.9	92.4	0.0
Queue Length 95th (m)	55.1	#368.3	22.2	26.2	#347.7	0.0	109.2	#191.7	15.5	#155.7	126.8	0.0
Internal Link Dist (m)		383.5			505.0			266.6			134.6	
Turn Bay Length (m)	115.0		110.0	100.0		30.0	100.0		30.0	115.0		25.0
Base Capacity (vph)	283	863	832	200	740	1389	373	311	340	543	445	1240
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.83	0.20	0.47	0.83	0.24	0.69	0.91	0.26	0.92	0.56	0.13

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
6: Elizabeth Street & Killaly St. E

2031 FT SAT OPT
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Future Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.979			0.984			0.903	
Flt Protected		0.976			0.998			0.997			0.991	
Satd. Flow (prot)	0	1358	0	0	1284	0	0	1439	0	0	1310	0
Flt Permitted		0.976			0.998			0.997			0.991	
Satd. Flow (perm)	0	1358	0	0	1284	0	0	1439	0	0	1310	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	152	147	4	7	158	30	2	27	4	52	25	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	0	0	195	0	0	33	0	0	273	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	67.6%											
Analysis Period (min)	15											
ICU Level of Service C												

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2031 FT SAT OPT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Future Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	147	4	7	158	30	2	27	4	52	25	196
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	303	195	33	273								
Volume Left (vph)	152	7	2	52								
Volume Right (vph)	4	30	4	196								
Hadj (s)	0.20	0.13	-0.04	-0.37								
Departure Headway (s)	5.2	5.3	5.6	4.9								
Degree Utilization, x	0.44	0.29	0.05	0.37								
Capacity (veh/h)	656	634	544	679								
Control Delay (s/veh)	12.2	10.4	9.0	10.8								
Approach Delay (s/veh)	12.2	10.4	9.0	10.8								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay				11.1								
Level of Service				B								
Intersection Capacity Utilization				67.6%	ICU Level of Service	C						
Analysis Period (min)				15								

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	140	135	4	6	145	28	2	25	4	48	23	180
Future Vol, veh/h	140	135	4	6	145	28	2	25	4	48	23	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	152	147	4	7	158	30	2	27	4	52	25	196
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	11.9	10	8.9	10.7
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	50%	3%	19%
Vol Thru, %	81%	48%	81%	9%
Vol Right, %	13%	1%	16%	72%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	279	179	251
LT Vol	2	140	6	48
Through Vol	25	135	145	23
RT Vol	4	4	28	180
Lane Flow Rate	34	303	195	273
Geometry Grp	1	1	1	1
Degree of Util (X)	0.052	0.425	0.27	0.364
Departure Headway (Hd)	5.588	5.05	4.987	4.802
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	645	704	710	742
Service Time	3.588	3.142	3.087	2.885
HCM Lane V/C Ratio	0.053	0.43	0.275	0.368
HCM Control Delay, s/veh	8.9	11.9	10	10.7
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.2	2.1	1.1	1.7

APPENDIX S

2036 Future Total Optimized Detailed Capacity Analysis

Lanes, Volumes, Timings
1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

2036 FT AM
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	239	144	94	403	270	275	311	118	210	195	180
Future Volume (vph)	165	239	144	94	403	270	275	311	118	210	195	180
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor						0.99						
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.250			0.568			0.505			0.950		
Satd. Flow (perm)	394	1535	1403	975	1471	1380	875	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			270			140			196
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			529.0			290.6			158.6	
Travel Time (s)		21.0			27.2			20.9			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	179	260	157	102	438	293	299	338	128	228	212	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	260	157	102	438	293	299	338	128	228	212	196
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

2036 FT AM
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	32.9	32.9	9.5	32.9	32.9	9.5	32.4	32.4	9.5	32.4	32.4
Total Split (s)	14.0	56.0	56.0	10.0	52.0	52.0	18.0	37.7	37.7	16.3	36.0	36.0
Total Split (%)	11.7%	46.7%	46.7%	8.3%	43.3%	43.3%	15.0%	31.4%	31.4%	13.6%	30.0%	30.0%
Maximum Green (s)	10.5	48.1	48.1	6.5	44.1	44.1	14.5	30.3	30.3	12.8	28.6	28.6
Yellow Time (s)	3.5	5.9	5.9	3.5	5.9	5.9	3.5	5.4	5.4	3.5	5.4	5.4
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0	0.0	0.0	-2.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.9	7.9	3.5	5.9	7.9	3.5	5.4	7.4	3.5	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Don't Walk (s)		15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	56.5	44.1	42.1	49.2	40.3	38.3	48.7	32.8	30.8	12.0	28.8	28.8
Actuated g/C Ratio	0.50	0.39	0.37	0.43	0.35	0.34	0.43	0.29	0.27	0.11	0.25	0.25
v/c Ratio	0.60	0.44	0.25	0.22	0.84	0.46	0.64	0.71	0.26	0.72	0.49	0.43
Control Delay (s/veh)	25.5	28.0	4.7	16.7	49.4	6.7	30.9	47.5	6.1	63.9	42.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.5	28.0	4.7	16.7	49.4	6.7	30.9	47.5	6.1	63.9	42.5	8.3
LOS	C	C	A	B	D	A	C	D	A	E	D	A
Approach Delay (s/veh)		21.1			30.4			34.1			39.6	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 113.8

Natural Cycle: 85

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 31.5

Intersection LOS: C

Intersection Capacity Utilization 78.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1  Ø1	#1  Ø2	#1  Ø3	#1  Ø4
16.3 s	37.7 s	10 s	56 s
#1  Ø5	#1  Ø6	#1  Ø7	#1  Ø8
18 s	36 s	14 s	52 s

2036 FT AM 3:40 pm 01/29/2026

Synchro 12 Report

Page 2

Queues

2036 FT AM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	179	260	157	102	438	293	299	338	128	228	212	196
v/c Ratio	0.60	0.44	0.25	0.22	0.84	0.46	0.64	0.71	0.26	0.72	0.49	0.43
Control Delay (s/veh)	25.5	28.0	4.7	16.7	49.4	6.7	30.9	47.5	6.1	63.9	42.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.5	28.0	4.7	16.7	49.4	6.7	30.9	47.5	6.1	63.9	42.5	8.3
Queue Length 50th (m)	25.1	48.9	0.0	12.6	106.9	3.8	50.9	79.2	0.0	29.6	45.9	0.0
Queue Length 95th (m)	40.7	74.8	14.0	22.7	156.7	25.1	77.6	#124.7	13.2	#46.7	72.5	22.8
Internal Link Dist (m)	383.5			505.0			266.6			134.6		
Turn Bay Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Base Capacity (vph)	298	679	686	459	599	702	475	475	500	341	433	459
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.38	0.23	0.22	0.73	0.42	0.63	0.71	0.26	0.67	0.49	0.43

Intersection Summary

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

Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	250	40	5	406	19	192	63	17	21	35	81
Future Volume (vph)	96	250	40	5	406	19	192	63	17	21	35	81
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1381	1226	1236	1381	1177	1236	1381	1409	0	1381	1454	1236
Flt Permitted	0.360			0.592			0.700			0.701		
Satd. Flow (perm)	523	1226	1236	861	1177	1236	1018	1409	0	1019	1454	1236
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			67		14				88
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	104	272	43	5	441	21	209	68	18	23	38	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	272	43	5	441	21	209	86	0	23	38	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	8.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	8.5	56.7	56.7	48.2	48.2	48.2	10.4	23.8		9.5	22.9	22.9
Total Split (%)	9.4%	63.0%	63.0%	53.6%	53.6%	53.6%	11.6%	26.4%		10.6%	25.4%	25.4%
Maximum Green (s)	6.0	53.2	53.2	44.7	44.7	44.7	7.9	20.3		7.0	19.4	19.4
Yellow Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.5	3.5	3.5	3.5	3.5	3.5	2.5	3.5		2.5	3.5	3.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	54.2	53.2	53.2	44.7	44.7	44.7	29.2	20.3		27.4	19.4	19.4
Actuated g/C Ratio	0.60	0.59	0.59	0.50	0.50	0.50	0.32	0.23		0.30	0.22	0.22

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.28	0.38	0.06	0.01	0.76	0.03	0.58	0.26		0.07	0.12	0.26
Control Delay (s/veh)	9.8	11.6	2.8	11.6	28.5	0.1	31.1	26.6		20.6	29.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	9.8	11.6	2.8	11.6	28.5	0.1	31.1	26.6		20.6	29.7	9.0
LOS	A	B	A	B	C	A	C	C		C	C	A
Approach Delay (s/veh)		10.2			27.0			29.8			16.1	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 21.1

Intersection LOS: C

Intersection Capacity Utilization 64.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

 Ø1	 Ø2 (R)	 Ø4	
9.5 s	23.8 s	56.7 s	
 Ø5	 Ø6 (R)	 Ø7	 Ø8
10.4 s	22.9 s	8.5 s	48.2 s

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	104	272	43	5	441	21	209	86	23	38	88
v/c Ratio	0.28	0.38	0.06	0.01	0.76	0.03	0.58	0.26	0.07	0.12	0.26
Control Delay (s/veh)	9.8	11.6	2.8	11.6	28.5	0.1	31.1	26.6	20.6	29.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.8	11.6	2.8	11.6	28.5	0.1	31.1	26.6	20.6	29.7	9.0
Queue Length 50th (m)	7.6	27.5	0.0	0.5	73.0	0.0	29.6	10.9	2.8	5.7	0.0
Queue Length 95th (m)	14.7	46.8	4.2	2.3	#127.4	0.0	50.6	24.2	8.3	14.3	12.3
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	372	724	748	427	584	647	362	328	338	313	335
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.38	0.06	0.01	0.76	0.03	0.58	0.26	0.07	0.12	0.26

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2036 FT AM
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	257	18	10	387	0	31	7	17	0	2	2
Future Volume (vph)	10	257	18	10	387	0	31	7	17	0	2	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.959			0.932	
Flt Protected		0.998			0.999			0.972				
Satd. Flow (prot)	0	1027	1137	0	994	1325	0	1363	0	0	1362	0
Flt Permitted		0.998			0.999			0.972				
Satd. Flow (perm)	0	1027	1137	0	994	1325	0	1363	0	0	1362	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	11	279	20	11	421	0	34	8	18	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	20	0	432	0	0	60	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	61.3%											
Analysis Period (min)	15											
ICU Level of Service B												

HCM Unsignalized Intersection Capacity Analysis
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2036 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	257	18	10	387	0	31	7	17	0	2	2
Future Volume (Veh/h)	10	257	18	10	387	0	31	7	17	0	2	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	279	20	11	421	0	34	8	18	0	2	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	421			299			747	744	279	766	764	421
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	421			299			747	744	279	766	764	421
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			89	98	98	100	99	100
cM capacity (veh/h)	1138			1268			323	337	760	302	328	635
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	290	20	432	0	60	4						
Volume Left	11	0	11	0	34	0						
Volume Right	0	20	0	0	18	2						
cSH	1138	1700	1268	1700	393	432						
Volume to Capacity	0.00*	0.01	0.00*	0.00	0.15	0.00*						
Queue Length 95th (m)	0.2	0.0	0.2	0.0	4.3	0.2						
Control Delay (s/veh)	0.4	0.0	0.3	0.0	15.8	13.4						
Lane LOS	A		A		C	B						
Approach Delay (s/veh)	0.4		0.3		15.8	13.4						
Approach LOS					C	B						
Intersection Summary												
Average Delay				1.5								
Intersection Capacity Utilization				61.3%	ICU Level of Service			B				
Analysis Period (min)				15								

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	123	6	7	102	28	5	5	4	31	4	5
Future Volume (vph)	9	123	6	7	102	28	5	5	4	31	4	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.973			0.961			0.984	
Flt Protected		0.997			0.997			0.982			0.962	
Satd. Flow (prot)	0	1405	0	0	1342	0	0	1377	0	0	1378	0
Flt Permitted		0.997			0.997			0.982			0.962	
Satd. Flow (perm)	0	1405	0	0	1342	0	0	1377	0	0	1378	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	10	134	7	8	111	30	5	5	4	34	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	151	0	0	149	0	0	14	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 25.0%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
4: Killaly St. E & Lorraine Road

2036 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	123	6	7	102	28	5	5	4	31	4	5
Future Volume (Veh/h)	9	123	6	7	102	28	5	5	4	31	4	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	134	7	8	111	30	5	5	4	34	4	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	141			141			307	315	138	306	303	126
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	141			141			307	315	138	306	303	126
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	99	100	95	99	99
cM capacity (veh/h)	1442			1442			633	595	911	633	604	924
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	151	149	14	43								
Volume Left	10	8	5	34								
Volume Right	7	30	4	5								
cSH	1442	1442	677	654								
Volume to Capacity	0.00*	0.00*	0.02	0.07								
Queue Length 95th (m)	0.2	0.1	0.5	1.7								
Control Delay (s/veh)	0.6	0.4	10.4	10.9								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.6	0.4	10.4	10.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			25.0%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Future Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.977			0.966			0.898	
Flt Protected		0.972						0.996			0.991	
Satd. Flow (prot)	0	1356	0	0	1282	0	0	1409	0	0	1304	0
Flt Permitted		0.972						0.996			0.991	
Satd. Flow (perm)	0	1356	0	0	1282	0	0	1409	0	0	1304	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	299	221	7	3	315	67	3	27	10	57	20	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	0	385	0	0	40	0	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	97.0%											
Analysis Period (min)	15											
	ICU Level of Service F											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2036 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Future Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	299	221	7	3	315	67	3	27	10	57	20	236
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	527	385	40	313								
Volume Left (vph)	299	3	3	57								
Volume Right (vph)	7	67	10	236								
Hadj (s)	0.21	0.12	-0.11	-0.39								
Departure Headway (s)	6.1	6.2	7.5	6.3								
Degree Utilization, x	0.89	0.66	0.08	0.55								
Capacity (veh/h)	586	550	403	542								
Control Delay (s/veh)	38.8	20.7	11.2	16.5								
Approach Delay (s/veh)	38.8	20.7	11.2	16.5								
Approach LOS	E	C	B	C								
Intersection Summary												
Delay				26.9								
Level of Service				D								
Intersection Capacity Utilization				97.0%	ICU Level of Service	F						
Analysis Period (min)				15								

Intersection

Intersection Delay, s/veh 25.6
Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	275	203	6	3	290	62	3	25	9	52	18	217
Future Vol, veh/h	275	203	6	3	290	62	3	25	9	52	18	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	299	221	7	3	315	67	3	27	10	57	20	236
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	37.1			19.1			11.1			16.3		
HCM LOS	E			C			B			C		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	57%	1%	18%
Vol Thru, %	68%	42%	82%	6%
Vol Right, %	24%	1%	17%	76%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	484	355	287
LT Vol	3	275	3	52
Through Vol	25	203	290	18
RT Vol	9	6	62	217
Lane Flow Rate	40	526	386	312
Geometry Grp	1	1	1	1
Degree of Util (X)	0.082	0.876	0.64	0.538
Departure Headway (Hd)	7.374	5.996	5.967	6.204
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	483	610	606	580
Service Time	5.461	3.996	4.018	4.257
HCM Lane V/C Ratio	0.083	0.862	0.637	0.538
HCM Control Delay, s/veh	11.1	37.1	19.1	16.3
HCM Lane LOS	B	E	C	C
HCM 95th-tile Q	0.3	10.1	4.6	3.2

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	73	247	457	76	67	302
Future Volume (vph)	73	247	457	76	67	302
Ideal Flow (vphpl)	1504	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.981			
Flt Protected	0.950					0.991
Satd. Flow (prot)	1401	1126	1335	0	0	1193
Flt Permitted	0.950					0.991
Satd. Flow (perm)	1401	1126	1335	0	0	1193
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	268	497	83	73	328
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	268	580	0	0	401
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.34	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	84.7%			ICU Level of Service E		
Analysis Period (min)	15					

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	73	247	457	76	67	302
Future Volume (Veh/h)	73	247	457	76	67	302
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	268	497	83	73	328
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						290
pX, platoon unblocked	0.95					
vC, conflicting volume	1013	539			580	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	985	539			580	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	51			93	
cM capacity (veh/h)	241	543			994	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	79	268	580	401		
Volume Left	79	0	0	73		
Volume Right	0	268	83	0		
cSH	241	543	1700	994		
Volume to Capacity	0.33	0.49	0.34	0.07		
Queue Length 95th (m)	10.9	21.7	0.0	1.9		
Control Delay (s/veh)	27.0	17.9	0.0	2.3		
Lane LOS	D	C		A		
Approach Delay (s/veh)	20.0		0.0	2.3		
Approach LOS	C					
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			84.7%		ICU Level of Service	E
Analysis Period (min)			15			

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	123	410	30	45	331
Future Volume (vph)	40	123	410	30	45	331
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.898		0.991			
Flt Protected	0.988					0.994
Satd. Flow (prot)	1290	0	1349	0	0	1255
Flt Permitted	0.988					0.994
Satd. Flow (perm)	1290	0	1349	0	0	1255
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	134	446	33	49	360
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	0	479	0	0	409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	83.9%			ICU Level of Service E		
Analysis Period (min)	15					

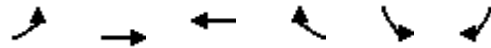
HCM Unsignalized Intersection Capacity Analysis
8: Elizabeth Street & Street B

2036 FT AM
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	123	410	30	45	331
Future Volume (Veh/h)	40	123	410	30	45	331
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	134	446	33	49	360
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	921	463			479	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	921	463			479	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	78			95	
cM capacity (veh/h)	287	599			1083	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	177	479	409			
Volume Left	43	0	49			
Volume Right	134	33	0			
cSH	474	1700	1083			
Volume to Capacity	0.37	0.28	0.05			
Queue Length 95th (m)	13.7	0.0	1.1			
Control Delay (s/veh)	17.1	0.0	1.4			
Lane LOS	C		A			
Approach Delay (s/veh)	17.1	0.0	1.4			
Approach LOS	C					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			83.9%	ICU Level of Service		E
Analysis Period (min)			15			

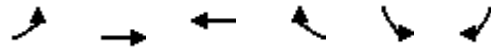
						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	25	415	23	24	346
Future Volume (vph)	15	25	415	23	24	346
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.915		0.993			
Flt Protected	0.982					0.997
Satd. Flow (prot)	1306	0	1351	0	0	1200
Flt Permitted	0.982					0.997
Satd. Flow (perm)	1306	0	1351	0	0	1200
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	27	451	25	26	376
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	476	0	0	402
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 68.7%	ICU Level of Service C					
Analysis Period (min) 15						

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	25	415	23	24	346
Future Volume (Veh/h)	15	25	415	23	24	346
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	27	451	25	26	376
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	892	464			476	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	892	464			476	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	95			98	
cM capacity (veh/h)	305	599			1086	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	43	476	402			
Volume Left	16	0	26			
Volume Right	27	25	0			
cSH	441	1700	1086			
Volume to Capacity	0.10	0.28	0.02			
Queue Length 95th (m)	2.6	0.0	0.6			
Control Delay (s/veh)	14.0	0.0	0.8			
Lane LOS	B		A			
Approach Delay (s/veh)	14.0	0.0	0.8			
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization		68.7%		ICU Level of Service		C
Analysis Period (min)		15				



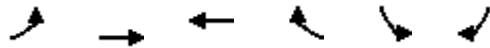
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	206	296	2	2	16
Future Volume (vph)	20	206	296	2	2	16
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.999		0.879	
Fl _t Protected		0.996			0.995	
Satd. Flow (prot)	0	1199	1359	0	1272	0
Fl _t Permitted		0.996			0.995	
Satd. Flow (perm)	0	1199	1359	0	1272	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	224	322	2	2	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	246	324	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization		52.5%		ICU Level of Service A		
Analysis Period (min) 15						

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	206	296	2	2	16
Future Volume (Veh/h)	20	206	296	2	2	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	224	322	2	2	17
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	324				591	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324				591	323
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	98
cM capacity (veh/h)	1236				461	718
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	246	324	19			
Volume Left	22	0	2			
Volume Right	0	2	17			
cSH	1236	1700	678			
Volume to Capacity	0.02	0.19	0.03			
Queue Length 95th (m)	0.4	0.0	0.7			
Control Delay (s/veh)	0.9	0.0	10.5			
Lane LOS	A		B			
Approach Delay (s/veh)	0.9	0.0	10.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization		52.5%		ICU Level of Service		A
Analysis Period (min)		15				



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	170	230	4	9	43
Future Volume (vph)	22	170	230	4	9	43
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.889	
Flt Protected		0.994			0.991	
Satd. Flow (prot)	0	1197	1358	0	1281	0
Flt Permitted		0.994			0.991	
Satd. Flow (perm)	0	1197	1358	0	1281	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	185	250	4	10	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	209	254	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 46.7%				ICU Level of Service A		
Analysis Period (min) 15						

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	170	230	4	9	43
Future Volume (Veh/h)	22	170	230	4	9	43
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	185	250	4	10	47
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	254				485	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254				485	252
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	94
cM capacity (veh/h)	1311				531	787
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	209	254	57			
Volume Left	24	0	10			
Volume Right	0	4	47			
cSH	1311	1700	725			
Volume to Capacity	0.02	0.15	0.08			
Queue Length 95th (m)	0.4	0.0	2.0			
Control Delay (s/veh)	1.0	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	1.0	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			46.7%	ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	135	131	4	9	52
Future Volume (vph)	26	135	131	4	9	52
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.996		0.885	
Flt Protected		0.992			0.993	
Satd. Flow (prot)	0	1194	1355	0	1278	0
Flt Permitted		0.992			0.993	
Satd. Flow (perm)	0	1194	1355	0	1278	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	147	142	4	10	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	175	146	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

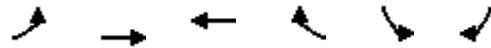
Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.7% ICU Level of Service A

Analysis Period (min) 15

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	135	131	4	9	52
Future Volume (Veh/h)	26	135	131	4	9	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	147	142	4	10	57
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	146				347	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	146				347	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	94
cM capacity (veh/h)	1436				637	903
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	175	146	67			
Volume Left	28	0	10			
Volume Right	0	4	57			
cSH	1436	1700	850			
Volume to Capacity	0.02	0.09	0.08			
Queue Length 95th (m)	0.5	0.0	2.0			
Control Delay (s/veh)	1.3	0.0	9.6			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			37.7%	ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	130	109	3	7	26
Future Volume (vph)	13	130	109	3	7	26
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.997		0.895	
Fl _t Protected		0.996			0.989	
Satd. Flow (prot)	0	1199	1357	0	1287	0
Fl _t Permitted		0.996			0.989	
Satd. Flow (perm)	0	1199	1357	0	1287	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	141	118	3	8	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	155	121	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 28.4% ICU Level of Service A

Analysis Period (min) 15

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	130	109	3	7	26
Future Volume (Veh/h)	13	130	109	3	7	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	141	118	3	8	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	121				289	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121				289	120
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	97
cM capacity (veh/h)	1467				695	932
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	155	121	36			
Volume Left	14	0	8			
Volume Right	0	3	28			
cSH	1467	1700	867			
Volume to Capacity	0.00*	0.07	0.04			
Queue Length 95th (m)	0.2	0.0	1.0			
Control Delay (s/veh)	0.7	0.0	9.3			
Lane LOS	A		A			
Approach Delay (s/veh)	0.7	0.0	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		28.4%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	153	9	0	181	2	18	0	3	5	0	35
Future Volume (vph)	17	153	9	0	181	2	18	0	3	5	0	35
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.993			0.999			0.982			0.881	
Flt Protected		0.995						0.958			0.994	
Satd. Flow (prot)	0	1437	0	0	1452	0	0	1368	0	0	1273	0
Flt Permitted		0.995						0.958			0.994	
Satd. Flow (perm)	0	1437	0	0	1452	0	0	1368	0	0	1273	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	166	10	0	197	2	20	0	3	5	0	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	194	0	0	199	0	0	23	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.5%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis
14: Street E & Killaly St. E

2036 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	153	9	0	181	2	18	0	3	5	0	35
Future Volume (Veh/h)	17	153	9	0	181	2	18	0	3	5	0	35
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	166	10	0	197	2	20	0	3	5	0	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	199			176			443	406	171	408	410	198
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	199			176			443	406	171	408	410	198
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	100	100	99	100	95
cM capacity (veh/h)	1373			1400			496	527	873	546	524	843
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	194	199	23	43								
Volume Left	18	0	20	5								
Volume Right	10	2	3	38								
cSH	1373	1400	526	793								
Volume to Capacity	0.01	0.00	0.04	0.05								
Queue Length 95th (m)	0.3	0.0	1.1	1.4								
Control Delay (s/veh)	0.8	0.0	12.2	9.8								
Lane LOS	A		B	A								
Approach Delay (s/veh)	0.8	0.0	12.2	9.8								
Approach LOS			B	A								
Intersection Summary												
Average Delay				1.9								
Intersection Capacity Utilization				41.5%	ICU Level of Service				A			
Analysis Period (min)				15								

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	6	3	45	38	2
Future Volume (vph)	6	6	3	45	38	2
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.994	
Flt Protected	0.976			0.997		
Satd. Flow (prot)	1323	0	0	1200	1353	0
Flt Permitted	0.976			0.997		
Satd. Flow (perm)	1323	0	0	1200	1353	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	176.2			135.3	371.1	
Travel Time (s)	15.9			8.1	22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	7	3	49	41	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	52	43	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	17.5%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	6	3	45	38	2
Future Volume (Veh/h)	6	6	3	45	38	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	7	3	49	41	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	97	42	43			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97	42	43			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	900	1029	1566			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	14	52	43			
Volume Left	7	3	0			
Volume Right	7	0	2			
cSH	960	1566	1700			
Volume to Capacity	0.01	0.00*	0.03			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s/veh)	8.8	0.4	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.8	0.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			17.5%	ICU Level of Service		A
Analysis Period (min)			15			

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	13	5	40	27	4
Future Volume (vph)	9	13	5	40	27	4
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921				0.984	
Flt Protected	0.980			0.995		
Satd. Flow (prot)	1312	0	0	1256	1339	0
Flt Permitted	0.980			0.995		
Satd. Flow (perm)	1312	0	0	1256	1339	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	186.1			371.1	118.9	
Travel Time (s)	16.7			22.3	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	14	5	43	29	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	0	48	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.3%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	13	5	40	27	4
Future Volume (Veh/h)	9	13	5	40	27	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	14	5	43	29	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	84	31	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	84	31	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	915	1043	1579			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	24	48	33			
Volume Left	10	5	0			
Volume Right	14	0	4			
cSH	985	1579	1700			
Volume to Capacity	0.02	0.00*	0.02			
Queue Length 95th (m)	0.6	0.1	0.0			
Control Delay (s/veh)	8.7	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.7	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	2.4					
Intersection Capacity Utilization	19.3%			ICU Level of Service	A	
Analysis Period (min)	15					
* Value less than 0.01.						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	377	27	3	665	13	0	0	8	0	0	79
Future Volume (vph)	161	377	27	3	665	13	0	0	8	0	0	79
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.997				0.865			0.865
Flt Protected	0.950											
Satd. Flow (prot)	1381	1439	0	0	1450	0	0	0	1258	0	0	1258
Flt Permitted	0.950											
Satd. Flow (perm)	1381	1439	0	0	1450	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	410	29	3	723	14	0	0	9	0	0	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	439	0	0	740	0	0	0	9	0	0	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 80.2%

ICU Level of Service D

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2036 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	377	27	3	665	13	0	0	8	0	0	79
Future Volume (Veh/h)	161	377	27	3	665	13	0	0	8	0	0	79
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	175	410	29	3	723	14	0	0	9	0	0	86
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	307											
pX, platoon unblocked	0.71							0.71	0.71	0.71	0.71	0.71
vC, conflicting volume	737				439				1597	1518	425	1505
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	419				439				1637	1525	425	1507
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1
tC, 2 stage (s)												
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	78				100				100	100	99	100
cM capacity (veh/h)	805				1121				38	65	630	57
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	175	439	740	9	86							
Volume Left	175	0	3	0	0							
Volume Right	0	29	14	9	86							
cSH	805	1700	1121	630	453							
Volume to Capacity	0.22	0.26	0.00*	0.01	0.19							
Queue Length 95th (m)	6.6	0.0	0.1	0.3	5.5							
Control Delay (s/veh)	10.7	0.0	0.1	10.8	14.8							
Lane LOS	B		A	B	B							
Approach Delay (s/veh)	3.1		0.1	10.8	14.8							
Approach LOS				B	B							
Intersection Summary												
Average Delay				2.3								
Intersection Capacity Utilization				80.2%	ICU Level of Service				D			
Analysis Period (min)				15								

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	552	105	46	455	289	93	265	43	497	371	345
Future Volume (vph)	262	552	105	46	455	289	93	265	43	497	371	345
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor						1.00						
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.186			0.297			0.525			0.950		
Satd. Flow (perm)	293	1535	1403	510	1471	1389	910	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			159			115			159
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			529.0			290.6			158.6	
Travel Time (s)		21.0			27.2			20.9			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	285	600	114	50	495	314	101	288	47	540	403	375
Shared Lane Traffic (%)												
Lane Group Flow (vph)	285	600	114	50	495	314	101	288	47	540	403	375
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		2			Free
Detector Phase	7	4	4	3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.5	32.9	32.9	9.5	32.9		9.5	32.4	32.4	9.5	32.4	
Total Split (s)	32.2	93.7	93.7	11.7	73.2		9.6	37.4	37.4	37.2	65.0	
Total Split (%)	17.9%	52.1%	52.1%	6.5%	40.7%		5.3%	20.8%	20.8%	20.7%	36.1%	
Maximum Green (s)	28.7	85.8	85.8	8.2	65.3		6.1	30.0	30.0	33.7	57.6	
Yellow Time (s)	3.5	5.9	5.9	3.5	5.9		3.5	5.4	5.4	3.5	5.4	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0		0.0	-2.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.9	7.9	3.5	5.9		3.5	5.4	7.4	3.5	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	
Walk Time (s)		5.0	5.0		5.0			5.0	5.0		5.0	
Flash Don't Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	93.6	82.4	80.4	71.7	61.8	172.0	41.3	33.3	31.3	32.7	57.8	172.0
Actuated g/C Ratio	0.54	0.48	0.47	0.42	0.36	1.00	0.24	0.19	0.18	0.19	0.34	1.00
v/c Ratio	0.84	0.82	0.16	0.19	0.94	0.23	0.41	0.90	0.13	0.94	0.70	0.30
Control Delay (s/veh)	47.5	49.3	5.4	21.3	79.5	0.4	47.9	98.7	0.7	94.3	58.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.5	49.3	5.4	21.3	79.5	0.4	47.9	98.7	0.7	94.3	58.8	0.6
LOS	D	D	A	C	E	A	D	F	A	F	E	A
Approach Delay (s/veh)		43.8			47.2			76.4			56.8	
Approach LOS		D			D			E			E	

Intersection Summary

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 172

Natural Cycle: 125

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.94

Intersection Signal Delay (s/veh): 53.3

Intersection LOS: D

Intersection Capacity Utilization 88.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1  Ø1	#1  Ø2	#1  Ø3	#1  Ø4
37.2 s	37.4 s	11.7 s	93.7 s
#1  Ø5	#1  Ø6	#1  Ø7	#1  Ø8
9.6 s	65 s	32.2 s	73.2 s

Queues

2036 FT PM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	285	600	114	50	495	314	101	288	47	540	403	375
v/c Ratio	0.84	0.82	0.16	0.19	0.94	0.23	0.41	0.90	0.13	0.94	0.70	0.30
Control Delay (s/veh)	47.5	49.3	5.4	21.3	79.5	0.4	47.9	98.7	0.7	94.3	58.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.5	49.3	5.4	21.3	79.5	0.4	47.9	98.7	0.7	94.3	58.8	0.6
Queue Length 50th (m)	60.8	206.8	1.4	8.4	197.6	0.0	24.4	113.5	0.0	109.6	136.2	0.0
Queue Length 95th (m)	#108.2	272.5	14.4	15.8	#282.5	0.0	40.3	#183.8	0.0	#151.5	183.1	0.0
Internal Link Dist (m)	383.5		505.0				266.6				134.6	
Turn Bay Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Base Capacity (vph)	361	786	755	268	577	1389	244	319	361	592	577	1240
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.76	0.15	0.19	0.86	0.23	0.41	0.90	0.13	0.91	0.70	0.30

Intersection Summary

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

Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	358	121	19	384	112	96	102	23	303	280	191
Future Volume (vph)	229	358	121	19	384	112	96	102	23	303	280	191
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1381	1226	1236	1381	1177	1236	1381	1413	0	1381	1454	1236
Flt Permitted	0.335			0.532			0.415			0.525		
Satd. Flow (perm)	487	1226	1236	773	1177	1236	603	1413	0	763	1454	1236
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132			97		12				208
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	249	389	132	21	417	122	104	111	25	329	304	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	389	132	21	417	122	104	136	0	329	304	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	8.5	22.5	22.5	22.5	22.5	22.5	9.5	20.5		9.5	22.5	22.5
Total Split (s)	11.0	53.0	53.0	42.0	42.0	42.0	9.5	23.0		14.0	27.5	27.5
Total Split (%)	12.2%	58.9%	58.9%	46.7%	46.7%	46.7%	10.6%	25.6%		15.6%	30.6%	30.6%
Maximum Green (s)	8.5	49.5	49.5	38.5	38.5	38.5	7.0	19.5		11.5	24.0	24.0
Yellow Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.5	3.5	3.5	3.5	3.5	3.5	2.5	3.5		2.5	3.5	3.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	50.5	49.5	49.5	38.5	38.5	38.5	27.5	19.5		34.5	24.0	24.0
Actuated g/C Ratio	0.56	0.55	0.55	0.43	0.43	0.43	0.31	0.22		0.38	0.27	0.27

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.70	0.58	0.18	0.06	0.83	0.21	0.43	0.43		0.89	0.79	0.43
Control Delay (s/veh)	23.4	17.7	2.5	15.9	39.2	6.1	25.2	32.7		51.6	46.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	23.4	17.7	2.5	15.9	39.2	6.1	25.2	32.7		51.6	46.9	7.0
LOS	C	B	A	B	D	A	C	C		D	D	A
Approach Delay (s/veh)	16.9			31.1			29.4			38.9		
Approach LOS	B			C			C			D		

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.89

Intersection Signal Delay (s/veh): 29.1

Intersection LOS: C

Intersection Capacity Utilization 85.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

#2  Ø1	#2  Ø2 (R)	#2  Ø4	
14 s	23 s	53 s	
#2  Ø5	#2  Ø6 (R)	#2  Ø7	#2  Ø8
9.5 s	27.5 s	11 s	42 s

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	249	389	132	21	417	122	104	136	329	304	208
v/c Ratio	0.70	0.58	0.18	0.06	0.83	0.21	0.43	0.43	0.89	0.79	0.43
Control Delay (s/veh)	23.4	17.7	2.5	15.9	39.2	6.1	25.2	32.7	51.6	46.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.4	17.7	2.5	15.9	39.2	6.1	25.2	32.7	51.6	46.9	7.0
Queue Length 50th (m)	23.0	50.2	0.0	2.2	77.4	2.6	12.6	19.8	48.3	52.0	0.0
Queue Length 95th (m)	#41.8	83.7	8.0	6.9	#142.5	13.1	24.4	37.8	#108.7	#94.3	17.1
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	357	674	739	330	503	584	244	315	371	387	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.58	0.18	0.06	0.83	0.21	0.43	0.43	0.89	0.79	0.43

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2036 FT PM
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	450	130	15	407	0	74	6	26	0	9	25
Future Volume (vph)	16	450	130	15	407	0	74	6	26	0	9	25
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.967			0.901	
Flt Protected		0.998			0.998			0.966				
Satd. Flow (prot)	0	1026	1137	0	995	1325	0	1367	0	0	1319	0
Flt Permitted		0.998			0.998			0.966				
Satd. Flow (perm)	0	1026	1137	0	995	1325	0	1367	0	0	1319	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	17	489	141	16	442	0	80	7	28	0	10	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	506	141	0	458	0	0	115	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 77.7%	ICU Level of Service D											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2036 FT PM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	450	130	15	407	0	74	6	26	0	9	25
Future Volume (Veh/h)	16	450	130	15	407	0	74	6	26	0	9	25
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	489	141	16	442	0	80	7	28	0	10	27
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	442			630			1029	997	489	1029	1138	442
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	442			630			1029	997	489	1029	1138	442
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			58	97	95	100	95	96
cM capacity (veh/h)	1118			957			191	236	579	193	195	618
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	506	141	458	0	115	37						
Volume Left	17	0	16	0	80	0						
Volume Right	0	141	0	0	28	27						
cSH	1118	1700	957	1700	231	390						
Volume to Capacity	0.02	0.08	0.02	0.00	0.50	0.09						
Queue Length 95th (m)	0.4	0.0	0.4	0.0	20.2	2.5						
Control Delay (s/veh)	0.4	0.0	0.5	0.0	35.0	15.2						
Lane LOS	A		A		D	C						
Approach Delay (s/veh)	0.4		0.5		35.0	15.2						
Approach LOS					D	C						
Intersection Summary												
Average Delay	4.0											
Intersection Capacity Utilization	77.7%			ICU Level of Service			D					
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	215	6	6	146	92	7	4	8	157	10	6
Future Volume (vph)	14	215	6	6	146	92	7	4	8	157	10	6
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.949			0.942			0.995	
Flt Protected		0.997			0.999			0.981			0.957	
Satd. Flow (prot)	0	1406	0	0	1324	0	0	1346	0	0	1385	0
Flt Permitted		0.997			0.999			0.981			0.957	
Satd. Flow (perm)	0	1406	0	0	1324	0	0	1346	0	0	1385	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	15	234	7	7	159	100	8	4	9	171	11	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	266	0	0	21	0	0	189	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
4: Killaly St. E & Lorraine Road

2036 FT PM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	215	6	6	146	92	7	4	8	157	10	6
Future Volume (Veh/h)	14	215	6	6	146	92	7	4	8	157	10	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	234	7	7	159	100	8	4	9	171	11	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	259			241			503	541	238	502	494	209
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259			241			503	541	238	502	494	209
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			98	99	99	63	98	99
cM capacity (veh/h)	1306			1326			461	442	801	465	470	831
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	256	266	21	189								
Volume Left	15	7	8	171								
Volume Right	7	100	9	7								
cSH	1306	1326	558	473								
Volume to Capacity	0.01	0.00*	0.04	0.40								
Queue Length 95th (m)	0.3	0.1	0.9	15.1								
Control Delay (s/veh)	0.6	0.3	11.7	17.6								
Lane LOS	A	A	B	C								
Approach Delay (s/veh)	0.6	0.3	11.7	17.6								
Approach LOS			B	C								
Intersection Summary												
Average Delay			5.2									
Intersection Capacity Utilization			49.3%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Future Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.972			0.986			0.923	
Flt Protected		0.981			0.998			0.992			0.984	
Satd. Flow (prot)	0	1357	0	0	1283	0	0	1435	0	0	1328	0
Flt Permitted		0.981			0.998			0.992			0.984	
Satd. Flow (perm)	0	1357	0	0	1283	0	0	1435	0	0	1328	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	109	174	4	8	146	41	5	22	3	77	27	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	287	0	0	195	0	0	30	0	0	243	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	64.2%											
Analysis Period (min)	15											
	ICU Level of Service C											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2036 FT PM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Future Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	174	4	8	146	41	5	22	3	77	27	139
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	287	195	30	243								
Volume Left (vph)	109	8	5	77								
Volume Right (vph)	4	41	3	139								
Hadj (s)	0.19	0.09	-0.01	-0.26								
Departure Headway (s)	5.1	5.1	5.6	4.9								
Degree Utilization, x	0.41	0.28	0.05	0.33								
Capacity (veh/h)	671	658	559	672								
Control Delay (s/veh)	11.5	10.1	8.8	10.4								
Approach Delay (s/veh)	11.5	10.1	8.8	10.4								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay				10.7								
Level of Service				B								
Intersection Capacity Utilization				64.2%	ICU Level of Service	C						
Analysis Period (min)				15								

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	100	160	4	7	134	38	5	20	3	71	25	128
Future Vol, veh/h	100	160	4	7	134	38	5	20	3	71	25	128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	109	174	4	8	146	41	5	22	3	77	27	139
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	11.3	9.7	8.8	10.3
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	38%	4%	32%
Vol Thru, %	71%	61%	75%	11%
Vol Right, %	11%	2%	21%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	264	179	224
LT Vol	5	100	7	71
Through Vol	20	160	134	25
RT Vol	3	4	38	128
Lane Flow Rate	30	287	195	243
Geometry Grp	1	1	1	1
Degree of Util (X)	0.047	0.394	0.262	0.328
Departure Headway (Hd)	5.502	4.949	4.853	4.848
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	720	732	735
Service Time	3.502	3.025	2.936	2.923
HCM Lane V/C Ratio	0.046	0.399	0.266	0.331
HCM Control Delay, s/veh	8.8	11.3	9.7	10.3
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.1	1.9	1	1.4

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	108	291	5	187	288
Future Volume (vph)	23	108	291	5	187	288
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.998			
Flt Protected	0.950					0.981
Satd. Flow (prot)	1381	1126	1358	0	0	1181
Flt Permitted	0.950					0.981
Satd. Flow (perm)	1381	1126	1358	0	0	1181
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	117	316	5	203	313
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	117	321	0	0	516
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	74.2%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
7: Elizabeth Street & Street A

2036 FT PM
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	108	291	5	187	288
Future Volume (Veh/h)	23	108	291	5	187	288
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	117	316	5	203	313
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						290
pX, platoon unblocked	0.81					
vC, conflicting volume	1038	319			321	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	929	319			321	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	84			84	
cM capacity (veh/h)	201	722			1239	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	25	117	321	516		
Volume Left	25	0	0	203		
Volume Right	0	117	5	0		
cSH	201	722	1700	1239		
Volume to Capacity	0.12	0.16	0.19	0.16		
Queue Length 95th (m)	3.3	4.6	0.0	4.7		
Control Delay (s/veh)	25.4	10.9	0.0	4.4		
Lane LOS	D	B		A		
Approach Delay (s/veh)	13.5		0.0	4.4		
Approach LOS	B					
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			74.2%		ICU Level of Service	D
Analysis Period (min)			15			

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	50	246	3	85	226
Future Volume (vph)	7	50	246	3	85	226
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882		0.998			
Flt Protected	0.994					0.987
Satd. Flow (prot)	1275	0	1358	0	0	1246
Flt Permitted	0.994					0.987
Satd. Flow (perm)	1275	0	1358	0	0	1246
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	54	267	3	92	246
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	270	0	0	338
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.9%			ICU Level of Service B		
Analysis Period (min)	15					

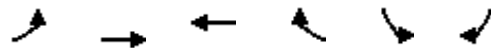
HCM Unsignalized Intersection Capacity Analysis
8: Elizabeth Street & Street B

2036 FT PM
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	50	246	3	85	226
Future Volume (Veh/h)	7	50	246	3	85	226
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	54	267	3	92	246
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	699	269			270	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	699	269			270	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	93			93	
cM capacity (veh/h)	377	770			1293	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	62	270	338			
Volume Left	8	0	92			
Volume Right	54	3	0			
cSH	679	1700	1293			
Volume to Capacity	0.09	0.16	0.07			
Queue Length 95th (m)	2.4	0.0	1.8			
Control Delay (s/veh)	10.8	0.0	2.7			
Lane LOS	B		A			
Approach Delay (s/veh)	10.8	0.0	2.7			
Approach LOS	B					
Intersection Summary						
Average Delay		2.3				
Intersection Capacity Utilization		56.9%		ICU Level of Service		B
Analysis Period (min)		15				

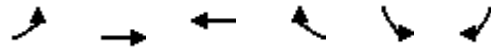
						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	6	243	2	7	226
Future Volume (vph)	5	6	243	2	7	226
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921		0.999			
Flt Protected	0.980					0.998
Satd. Flow (prot)	1312	0	1359	0	0	1202
Flt Permitted	0.980					0.998
Satd. Flow (perm)	1312	0	1359	0	0	1202
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	7	264	2	8	246
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	266	0	0	254
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.1%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	6	243	2	7	226
Future Volume (Veh/h)	5	6	243	2	7	226
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	7	264	2	8	246
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	527	265			266	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	527	265			266	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	508	774			1298	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	12	266	254			
Volume Left	5	0	8			
Volume Right	7	2	0			
cSH	635	1700	1298			
Volume to Capacity	0.02	0.16	0.00*			
Queue Length 95th (m)	0.5	0.0	0.1			
Control Delay (s/veh)	10.8	0.0	0.3			
Lane LOS	B		A			
Approach Delay (s/veh)	10.8	0.0	0.3			
Approach LOS	B					
Intersection Summary						
Average Delay		0.4				
Intersection Capacity Utilization		37.1%		ICU Level of Service	A	
Analysis Period (min)		15				
* Value less than 0.01.						

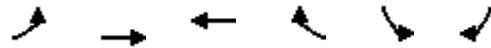


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	163	137	7	10	18
Future Volume (vph)	28	163	137	7	10	18
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.913	
Flt Protected		0.993			0.983	
Satd. Flow (prot)	0	1195	1351	0	1305	0
Flt Permitted		0.993			0.983	
Satd. Flow (perm)	0	1195	1351	0	1305	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	177	149	8	11	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	207	157	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.5%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	163	137	7	10	18
Future Volume (Veh/h)	28	163	137	7	10	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	177	149	8	11	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	157				390	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157				390	153
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	98
cM capacity (veh/h)	1423				601	893
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	207	157	31			
Volume Left	30	0	11			
Volume Right	0	8	20			
cSH	1423	1700	762			
Volume to Capacity	0.02	0.09	0.04			
Queue Length 95th (m)	0.5	0.0	1.0			
Control Delay (s/veh)	1.3	0.0	9.9			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			39.5%	ICU Level of Service		A
Analysis Period (min)			15			

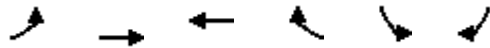


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	171	138	12	18	6
Future Volume (vph)	2	171	138	12	18	6
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.989		0.965	
Flt Protected		0.999			0.964	
Satd. Flow (prot)	0	1203	1346	0	1353	0
Flt Permitted		0.999			0.964	
Satd. Flow (perm)	0	1203	1346	0	1353	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	186	150	13	20	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	188	163	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 26.4%						
ICU Level of Service A						
Analysis Period (min) 15						



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	171	138	12	18	6
Future Volume (Veh/h)	2	171	138	12	18	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	186	150	13	20	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	163				347	157
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	163				347	157
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1416				649	889
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	188	163	27			
Volume Left	2	0	20			
Volume Right	0	13	7			
cSH	1416	1700	698			
Volume to Capacity	0.00*	0.10	0.04			
Queue Length 95th (m)	0.0	0.0	1.0			
Control Delay (s/veh)	0.1	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	0.1	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		26.4%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	200	141	12	19	7
Future Volume (vph)	2	200	141	12	19	7
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.989		0.963	
Fl _t Protected					0.965	
Satd. Flow (prot)	0	1204	1346	0	1351	0
Fl _t Permitted					0.965	
Satd. Flow (perm)	0	1204	1346	0	1351	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	217	153	13	21	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	219	166	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

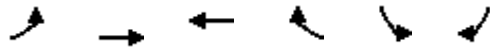
Area Type: Other

Control Type: Unsignalized

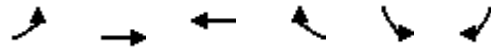
Intersection Capacity Utilization 28.8% ICU Level of Service A

Analysis Period (min) 15

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	200	141	12	19	7
Future Volume (Veh/h)	2	200	141	12	19	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	217	153	13	21	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	166				381	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	166				381	160
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1412				621	886
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	219	166	29			
Volume Left	2	0	21			
Volume Right	0	13	8			
cSH	1412	1700	677			
Volume to Capacity	0.00*	0.10	0.04			
Queue Length 95th (m)	0.0	0.0	1.1			
Control Delay (s/veh)	0.1	0.0	10.6			
Lane LOS	A		B			
Approach Delay (s/veh)	0.1	0.0	10.6			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			28.8%	ICU Level of Service		A
Analysis Period (min)			15			
* Value less than 0.01.						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	218	149	10	16	4
Future Volume (vph)	1	218	149	10	16	4
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.991		0.974	
Flt Protected					0.961	
Satd. Flow (prot)	0	1204	1349	0	1361	0
Flt Permitted					0.961	
Satd. Flow (perm)	0	1204	1349	0	1361	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	237	162	11	17	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	238	173	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 29.0% ICU Level of Service A						
Analysis Period (min) 15						



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	218	149	10	16	4
Future Volume (Veh/h)	1	218	149	10	16	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	237	162	11	17	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	173				407	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	173				407	168
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1404				600	877
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	238	173	21			
Volume Left	1	0	17			
Volume Right	0	11	4			
cSH	1404	1700	639			
Volume to Capacity	0.00*	0.10	0.03			
Queue Length 95th (m)	0.0	0.0	0.8			
Control Delay (s/veh)	0.0	0.0	10.8			
Lane LOS	A		B			
Approach Delay (s/veh)	0.0	0.0	10.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			29.0%	ICU Level of Service		A
Analysis Period (min)			15			

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	187	1	0	143	6	3	0	7	10	0	5
Future Volume (vph)	2	187	1	0	143	6	3	0	7	10	0	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr t		0.999			0.994			0.902			0.958	
Flt Protected								0.987			0.967	
Satd. Flow (prot)	0	1452	0	0	1445	0	0	1294	0	0	1347	0
Flt Permitted								0.987			0.967	
Satd. Flow (perm)	0	1452	0	0	1445	0	0	1294	0	0	1347	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	203	1	0	155	7	3	0	8	11	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	162	0	0	11	0	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 24.7%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
14: Street E & Killaly St. E

2036 FT PM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	187	1	0	143	6	3	0	7	10	0	5
Future Volume (Veh/h)	2	187	1	0	143	6	3	0	7	10	0	5
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	203	1	0	155	7	3	0	8	11	0	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	162			204			371	370	204	374	367	159
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			204			371	370	204	374	367	159
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	98	100	99
cM capacity (veh/h)	1417			1368			582	559	837	577	561	887
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	206	162	11	16								
Volume Left	2	0	3	11								
Volume Right	1	7	8	5								
cSH	1417	1368	748	648								
Volume to Capacity	0.00*	0.00	0.01	0.02								
Queue Length 95th (m)	0.0	0.0	0.4	0.6								
Control Delay (s/veh)	0.1	0.0	9.9	10.7								
Lane LOS	A		A	B								
Approach Delay (s/veh)	0.1	0.0	9.9	10.7								
Approach LOS			A	B								
Intersection Summary												
Average Delay				0.8								
Intersection Capacity Utilization				24.7%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	13	8	103	162	6
Future Volume (vph)	7	13	8	103	162	6
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914				0.995	
Flt Protected	0.982			0.996		
Satd. Flow (prot)	1305	0	0	1199	1354	0
Flt Permitted	0.982			0.996		
Satd. Flow (perm)	1305	0	0	1199	1354	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	176.2			135.3	371.1	
Travel Time (s)	15.9			8.1	22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	14	9	112	176	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	121	183	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 28.6%				ICU Level of Service A		
Analysis Period (min) 15						

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	13	8	103	162	6
Future Volume (Veh/h)	7	13	8	103	162	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	14	9	112	176	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	310	180	183			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	310	180	183			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	99			
cM capacity (veh/h)	678	863	1392			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	121	183			
Volume Left	8	9	0			
Volume Right	14	0	7			
cSH	785	1392	1700			
Volume to Capacity	0.03	0.00*	0.11			
Queue Length 95th (m)	0.7	0.2	0.0			
Control Delay (s/veh)	9.7	0.6	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.7	0.6	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.9					
Intersection Capacity Utilization	28.6%			ICU Level of Service	A	
Analysis Period (min)	15					

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	30	18	93	139	14
Future Volume (vph)	12	30	18	93	139	14
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.903				0.988	
Flt Protected	0.986			0.992		
Satd. Flow (prot)	1295	0	0	1253	1344	0
Flt Permitted	0.986			0.992		
Satd. Flow (perm)	1295	0	0	1253	1344	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	186.1			371.1	118.9	
Travel Time (s)	16.7			22.3	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	33	20	101	151	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	121	166	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.2%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	30	18	93	139	14
Future Volume (Veh/h)	12	30	18	93	139	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	33	20	101	151	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	300	159	166			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300	159	166			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	96	99			
cM capacity (veh/h)	682	887	1412			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	46	121	166			
Volume Left	13	20	0			
Volume Right	33	0	15			
cSH	817	1412	1700			
Volume to Capacity	0.06	0.01	0.10			
Queue Length 95th (m)	1.4	0.3	0.0			
Control Delay (s/veh)	9.7	1.3	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.7	1.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			33.2%	ICU Level of Service		A
Analysis Period (min)			15			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	616	81	8	550	113	0	0	10	0	0	213
Future Volume (vph)	387	616	81	8	550	113	0	0	10	0	0	213
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.977				0.865			0.865
Flt Protected	0.950				0.999							
Satd. Flow (prot)	1381	1429	0	0	1419	0	0	0	1258	0	0	1258
Flt Permitted	0.950				0.999							
Satd. Flow (perm)	1381	1429	0	0	1419	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	670	88	9	598	123	0	0	11	0	0	232
Shared Lane Traffic (%)												
Lane Group Flow (vph)	421	758	0	0	730	0	0	0	11	0	0	232
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	100.9%											
Analysis Period (min)	15											
	ICU Level of Service G											

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2036 FT PM
03/04/2026

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	387	616	81	8	550	113	0	0	10	0	0	213		
Future Volume (Veh/h)	387	616	81	8	550	113	0	0	10	0	0	213		
Sign Control	Free				Free				Stop		Stop			
Grade	0%				0%				0%		0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	421	670	88	9	598	123	0	0	11	0	0	232		
Pedestrians														
Lane Width (m)														
Walking Speed (m/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None			None										
Median storage veh														
Upstream signal (m)	307													
pX, platoon unblocked	0.78							0.78	0.78		0.78	0.78	0.78	
vC, conflicting volume	721				758				2466	2295	714	2201	2278	660
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	497				758				2743	2523	714	2402	2501	418
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)														
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	49				99				100	100	97	100	100	53
cM capacity (veh/h)	829				853				3	11	431	10	11	493
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1									
Volume Total	421	758	730	11	232									
Volume Left	421	0	9	0	0									
Volume Right	0	88	123	11	232									
cSH	829	1700	853	431	493									
Volume to Capacity	0.51	0.45	0.01	0.03	0.47									
Queue Length 95th (m)	23.4	0.0	0.3	0.6	19.8									
Control Delay (s/veh)	13.7	0.0	0.3	13.6	18.6									
Lane LOS	B		A	B	C									
Approach Delay (s/veh)	4.9		0.3	13.6	18.6									
Approach LOS				B	C									
Intersection Summary														
Average Delay				4.9										
Intersection Capacity Utilization				100.9%	ICU Level of Service				G					
Analysis Period (min)				15										

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	683	162	93	594	309	237	261	80	464	234	165
Future Volume (vph)	199	683	162	93	594	309	237	261	80	464	234	165
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor						1.00						
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.163			0.166			0.588			0.950		
Satd. Flow (perm)	257	1535	1403	285	1471	1389	1019	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134			136			95			136
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			529.0			290.6			158.6	
Travel Time (s)		21.0			27.2			20.9			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	216	742	176	101	646	336	258	284	87	504	254	179
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	742	176	101	646	336	258	284	87	504	254	179
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		2			Free
Detector Phase	7	4	4	3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	8.0	27.9	27.9	8.0	27.9		8.0	27.4	27.4	8.0	27.4	
Total Split (s)	21.0	109.0	109.0	10.0	98.0		21.0	40.0	40.0	36.0	55.0	
Total Split (%)	10.8%	55.9%	55.9%	5.1%	50.3%		10.8%	20.5%	20.5%	18.5%	28.2%	
Maximum Green (s)	18.0	101.1	101.1	7.0	90.1		18.0	32.6	32.6	33.0	47.6	
Yellow Time (s)	3.0	5.9	5.9	3.0	5.9		3.0	5.4	5.4	3.0	5.4	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0		0.0	-2.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	5.9	7.9	3.0	5.9		3.0	5.4	7.4	3.0	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	
Walk Time (s)		5.0	5.0		5.0			5.0	5.0		5.0	
Flash Don't Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	110.9	97.9	95.9	97.7	87.8	190.1	55.0	34.7	32.7	33.1	48.0	190.1
Actuated g/C Ratio	0.58	0.51	0.50	0.51	0.46	1.00	0.29	0.18	0.17	0.17	0.25	1.00
v/c Ratio	0.83	0.94	0.23	0.52	0.95	0.24	0.73	0.94	0.26	0.96	0.59	0.14
Control Delay (s/veh)	45.9	63.3	7.4	28.4	73.1	0.4	62.7	115.0	10.9	107.2	70.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.9	63.3	7.4	28.4	73.1	0.4	62.7	115.0	10.9	107.2	70.2	0.2
LOS	D	E	A	C	E	A	E	F	B	F	E	A
Approach Delay (s/veh)		51.3			46.4			79.1			76.7	
Approach LOS		D			D			E			E	

Intersection Summary

Area Type: Other

Cycle Length: 195

Actuated Cycle Length: 190.1

Natural Cycle: 130

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.96

Intersection Signal Delay (s/veh): 60.8

Intersection LOS: E

Intersection Capacity Utilization 91.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

			
Ø1	Ø2	Ø3	Ø4
36 s	40 s	10 s	109 s
			
Ø5	Ø6	Ø7	Ø8
21 s	55 s	21 s	98 s

Queues

2036 FT SAT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	216	742	176	101	646	336	258	284	87	504	254	179
v/c Ratio	0.83	0.94	0.23	0.52	0.95	0.24	0.73	0.94	0.26	0.96	0.59	0.14
Control Delay (s/veh)	45.9	63.3	7.4	28.4	73.1	0.4	62.7	115.0	10.9	107.2	70.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.9	63.3	7.4	28.4	73.1	0.4	62.7	115.0	10.9	107.2	70.2	0.2
Queue Length 50th (m)	44.2	301.7	8.8	17.7	281.6	0.0	79.4	122.8	0.0	113.5	95.1	0.0
Queue Length 95th (m)	#73.4	#407.3	24.7	28.2	#381.4	0.0	109.2	#191.7	15.5	#157.1	130.2	0.0
Internal Link Dist (m)	383.5				505.0				266.6		134.6	
Turn Bay Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Base Capacity (vph)	267	835	810	196	715	1389	355	301	332	525	432	1240
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.89	0.22	0.52	0.90	0.24	0.73	0.94	0.26	0.96	0.59	0.14

Intersection Summary

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

Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	341	293	87	10	334	115	143	159	26	288	372	291
Future Volume (vph)	341	293	87	10	334	115	143	159	26	288	372	291
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1381	1226	1236	1381	1177	1236	1381	1423	0	1381	1454	1236
Flt Permitted	0.326			0.568			0.374			0.329		
Satd. Flow (perm)	474	1226	1236	826	1177	1236	544	1423	0	478	1454	1236
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95			91		6				316
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	371	318	95	11	363	125	155	173	28	313	404	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	371	318	95	11	363	125	155	201	0	313	404	316
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	11.0	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	23.6	70.6	70.6	47.0	47.0	47.0	10.0	24.9		24.5	39.4	39.4
Total Split (%)	19.7%	58.8%	58.8%	39.2%	39.2%	39.2%	8.3%	20.8%		20.4%	32.8%	32.8%
Maximum Green (s)	20.6	66.6	66.6	43.0	43.0	43.0	7.0	20.9		21.5	35.4	35.4
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		5.0	5.0	5.0	5.0	5.0		5.0			5.0	5.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	67.6	66.6	66.6	43.0	43.0	43.0	28.9	20.9		46.4	35.4	35.4
Actuated g/C Ratio	0.56	0.56	0.56	0.36	0.36	0.36	0.24	0.17		0.39	0.30	0.30

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.88	0.47	0.13	0.04	0.86	0.25	0.87	0.80		0.90	0.94	0.54
Control Delay (s/veh)	40.3	18.9	2.9	25.7	57.1	10.4	73.6	69.5		60.8	73.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	40.3	18.9	2.9	25.7	57.1	10.4	73.6	69.5		60.8	73.6	7.3
LOS	D	B	A	C	E	B	E	E		E	E	A
Approach Delay (s/veh)	27.1			44.7			71.3			49.4		
Approach LOS	C			D			E			D		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.94

Intersection Signal Delay (s/veh): 44.9

Intersection LOS: D

Intersection Capacity Utilization 95.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

#2  Ø1				#2  Ø2 (R)		#2  Ø4	
24.5 s		24.9 s		70.6 s			
#2  Ø5		#2  Ø6 (R)		#2  Ø7		#2  Ø8	
10 s		39.4 s		23.6 s		47 s	

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	371	318	95	11	363	125	155	201	313	404	316
v/c Ratio	0.88	0.47	0.13	0.04	0.86	0.25	0.87	0.80	0.90	0.94	0.54
Control Delay (s/veh)	40.3	18.9	2.9	25.7	57.1	10.4	73.6	69.5	60.8	73.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.3	18.9	2.9	25.7	57.1	10.4	73.6	69.5	60.8	73.6	7.3
Queue Length 50th (m)	53.1	52.1	0.0	1.8	98.2	5.6	26.6	47.6	61.7	99.1	0.0
Queue Length 95th (m)	#105.2	80.6	7.9	6.2	#165.7	20.0	#62.4	#87.8	#104.8	#163.5	23.8
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	422	680	728	295	421	501	179	252	346	428	587
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.47	0.13	0.04	0.86	0.25	0.87	0.80	0.90	0.94	0.54

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2036 FT SAT
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	403	111	9	371	2	61	7	25	0	3	17
Future Volume (vph)	20	403	111	9	371	2	61	7	25	0	3	17
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.964			0.884	
Flt Protected		0.998			0.999			0.968				
Satd. Flow (prot)	0	1029	1137	0	994	1126	0	1365	0	0	1296	0
Flt Permitted		0.998			0.999			0.968				
Satd. Flow (perm)	0	1029	1137	0	994	1126	0	1365	0	0	1296	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	22	438	121	10	403	2	66	8	27	0	3	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	460	121	0	413	2	0	101	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	78.1%											
Analysis Period (min)	15											
ICU Level of Service D												

HCM Unsignalized Intersection Capacity Analysis
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2036 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	403	111	9	371	2	61	7	25	0	3	17
Future Volume (Veh/h)	20	403	111	9	371	2	61	7	25	0	3	17
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	438	121	10	403	2	66	8	27	0	3	18
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	405			559			925	907	438	936	1026	403
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	405			559			925	907	438	936	1026	403
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			72	97	96	100	99	97
cM capacity (veh/h)	1154			1017			236	268	619	224	228	650
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	460	121	413	2	101	21						
Volume Left	22	0	10	0	66	0						
Volume Right	0	121	0	2	27	18						
cSH	1154	1700	1017	1700	286	514						
Volume to Capacity	0.02	0.07	0.00*	0.00*	0.35	0.04						
Queue Length 95th (m)	0.5	0.0	0.2	0.0	12.3	1.0						
Control Delay (s/veh)	0.6	0.0	0.3	0.0	24.3	12.3						
Lane LOS	A		A		C	B						
Approach Delay (s/veh)	0.5		0.3		24.3	12.3						
Approach LOS					C	B						
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			78.1%	ICU Level of Service					D			
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	174	8	6	105	71	3	2	9	145	7	5
Future Volume (vph)	8	174	8	6	105	71	3	2	9	145	7	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.947			0.910			0.996	
Flt Protected		0.998			0.998			0.990			0.956	
Satd. Flow (prot)	0	1405	0	0	1322	0	0	1312	0	0	1385	0
Flt Permitted		0.998			0.998			0.990			0.956	
Satd. Flow (perm)	0	1405	0	0	1322	0	0	1312	0	0	1385	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	9	189	9	7	114	77	3	2	10	158	8	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	198	0	0	15	0	0	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 41.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
4: Killaly St. E & Lorraine Road

2036 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	174	8	6	105	71	3	2	9	145	7	5
Future Volume (Veh/h)	8	174	8	6	105	71	3	2	9	145	7	5
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	189	9	7	114	77	3	2	10	158	8	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	191			198			387	417	194	389	383	153
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191			198			387	417	194	389	383	153
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	100	99	72	99	99
cM capacity (veh/h)	1383			1375			557	522	848	557	546	894
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	207	198	15	171								
Volume Left	9	7	3	158								
Volume Right	9	77	10	5								
cSH	1383	1375	714	562								
Volume to Capacity	0.00*	0.00*	0.02	0.30								
Queue Length 95th (m)	0.2	0.1	0.5	10.2								
Control Delay (s/veh)	0.4	0.3	10.1	14.2								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.4	0.3	10.1	14.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay				4.6								
Intersection Capacity Utilization				41.1%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Future Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.979			0.984			0.903	
Flt Protected		0.976			0.998			0.997			0.991	
Satd. Flow (prot)	0	1358	0	0	1284	0	0	1439	0	0	1310	0
Flt Permitted		0.976			0.998			0.997			0.991	
Satd. Flow (perm)	0	1358	0	0	1284	0	0	1439	0	0	1310	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	152	147	4	7	158	30	2	27	4	52	25	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	0	0	195	0	0	33	0	0	273	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 67.6%	ICU Level of Service C											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2036 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Future Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	147	4	7	158	30	2	27	4	52	25	196
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	303	195	33	273								
Volume Left (vph)	152	7	2	52								
Volume Right (vph)	4	30	4	196								
Hadj (s)	0.20	0.13	-0.04	-0.37								
Departure Headway (s)	5.2	5.3	5.6	4.9								
Degree Utilization, x	0.44	0.29	0.05	0.37								
Capacity (veh/h)	656	634	544	679								
Control Delay (s/veh)	12.2	10.4	9.0	10.8								
Approach Delay (s/veh)	12.2	10.4	9.0	10.8								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			11.1									
Level of Service			B									
Intersection Capacity Utilization			67.6%	ICU Level of Service					C			
Analysis Period (min)			15									

Intersection

Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	140	135	4	6	145	28	2	25	4	48	23	180
Future Vol, veh/h	140	135	4	6	145	28	2	25	4	48	23	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	152	147	4	7	158	30	2	27	4	52	25	196
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	11.9	10	8.9	10.7
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	50%	3%	19%
Vol Thru, %	81%	48%	81%	9%
Vol Right, %	13%	1%	16%	72%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	279	179	251
LT Vol	2	140	6	48
Through Vol	25	135	145	23
RT Vol	4	4	28	180
Lane Flow Rate	34	303	195	273
Geometry Grp	1	1	1	1
Degree of Util (X)	0.052	0.425	0.27	0.364
Departure Headway (Hd)	5.588	5.05	4.987	4.802
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	645	704	710	742
Service Time	3.588	3.142	3.087	2.885
HCM Lane V/C Ratio	0.053	0.43	0.275	0.368
HCM Control Delay, s/veh	8.9	11.9	10	10.7
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.2	2.1	1.1	1.7

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	179	399	31	149	286
Future Volume (vph)	49	179	399	31	149	286
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.990			
Flt Protected	0.950					0.983
Satd. Flow (prot)	1381	1126	1347	0	0	1183
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1381	1126	1347	0	0	1183
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	195	434	34	162	311
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	195	468	0	0	473
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	80.8%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
7: Elizabeth Street & Street A

2036 FT SAT
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	179	399	31	149	286
Future Volume (Veh/h)	49	179	399	31	149	286
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	195	434	34	162	311
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						290
pX, platoon unblocked	0.89					
vC, conflicting volume	1086	451			468	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1034	451			468	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	73	68			85	
cM capacity (veh/h)	195	608			1094	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	53	195	468	473		
Volume Left	53	0	0	162		
Volume Right	0	195	34	0		
cSH	195	608	1700	1094		
Volume to Capacity	0.27	0.32	0.28	0.15		
Queue Length 95th (m)	8.5	11.0	0.0	4.2		
Control Delay (s/veh)	30.3	13.7	0.0	4.1		
Lane LOS	D	B		A		
Approach Delay (s/veh)	17.2		0.0	4.1		
Approach LOS	C					
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			80.8%		ICU Level of Service	D
Analysis Period (min)			15			

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	77	353	4	64	271
Future Volume (vph)	8	77	353	4	64	271
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878		0.999			
Flt Protected	0.995					0.991
Satd. Flow (prot)	1270	0	1359	0	0	1251
Flt Permitted	0.995					0.991
Satd. Flow (perm)	1270	0	1359	0	0	1251
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	84	384	4	70	295
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	388	0	0	365
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 68.7%	ICU Level of Service C					
Analysis Period (min) 15						

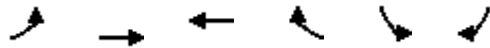
HCM Unsignalized Intersection Capacity Analysis
8: Elizabeth Street & Street B

2036 FT SAT
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	77	353	4	64	271
Future Volume (Veh/h)	8	77	353	4	64	271
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	84	384	4	70	295
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	821	386			388	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	821	386			388	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	87			94	
cM capacity (veh/h)	324	662			1170	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	93	388	365			
Volume Left	9	0	70			
Volume Right	84	4	0			
cSH	601	1700	1170			
Volume to Capacity	0.15	0.23	0.06			
Queue Length 95th (m)	4.4	0.0	1.5			
Control Delay (s/veh)	12.1	0.0	2.1			
Lane LOS	B		A			
Approach Delay (s/veh)	12.1	0.0	2.1			
Approach LOS	B					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization		68.7%		ICU Level of Service		C
Analysis Period (min)		15				

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	356	0	0	278
Future Volume (vph)	0	0	356	0	0	278
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1454	0	1361	0	0	1204
Flt Permitted						
Satd. Flow (perm)	1454	0	1361	0	0	1204
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	387	0	0	302
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	387	0	0	302
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 29.0%			ICU Level of Service A			
Analysis Period (min) 15						

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	356	0	0	278
Future Volume (Veh/h)	0	0	356	0	0	278
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	387	0	0	302
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	689	387			387	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	689	387			387	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	412	661			1171	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	387	302			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1171			
Volume to Capacity	0.00	0.23	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			29.0%	ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	143	139	3	6	18
Future Volume (vph)	27	143	139	3	6	18
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.997		0.900	
Flt Protected		0.992			0.987	
Satd. Flow (prot)	0	1194	1357	0	1292	0
Flt Permitted		0.992			0.987	
Satd. Flow (perm)	0	1194	1357	0	1292	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	155	151	3	7	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	184	154	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

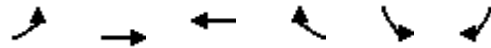
Area Type: Other

Control Type: Unsignalized

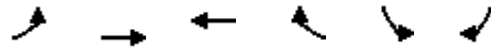
Intersection Capacity Utilization 37.6% ICU Level of Service A

Analysis Period (min) 15

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	143	139	3	6	18
Future Volume (Veh/h)	27	143	139	3	6	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	155	151	3	7	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	154				366	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154				366	153
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	98
cM capacity (veh/h)	1426				621	894
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	184	154	27			
Volume Left	29	0	7			
Volume Right	0	3	20			
cSH	1426	1700	802			
Volume to Capacity	0.02	0.09	0.03			
Queue Length 95th (m)	0.5	0.0	0.8			
Control Delay (s/veh)	1.3	0.0	9.6			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			37.6%	ICU Level of Service		A
Analysis Period (min)			15			

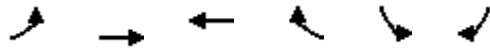


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	143	130	5	17	12
Future Volume (vph)	6	143	130	5	17	12
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.995		0.943	
Fl _t Protected		0.998			0.972	
Satd. Flow (prot)	0	1202	1354	0	1333	0
Fl _t Permitted		0.998			0.972	
Satd. Flow (perm)	0	1202	1354	0	1333	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	155	141	5	18	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	162	146	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 29.2%				ICU Level of Service A		
Analysis Period (min) 15						

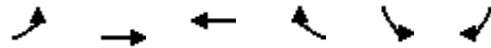


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	143	130	5	17	12
Future Volume (Veh/h)	6	143	130	5	17	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	155	141	5	18	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	146				313	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	146				313	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1436				677	904
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	162	146	31			
Volume Left	7	0	18			
Volume Right	0	5	13			
cSH	1436	1700	757			
Volume to Capacity	0.00*	0.09	0.04			
Queue Length 95th (m)	0.1	0.0	1.0			
Control Delay (s/veh)	0.4	0.0	10.0			
Lane LOS	A		A			
Approach Delay (s/veh)	0.4	0.0	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			29.2%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.

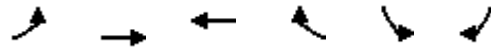


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	161	110	5	17	14
Future Volume (vph)	7	161	110	5	17	14
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.995		0.939	
Fl _t Protected		0.998			0.973	
Satd. Flow (prot)	0	1202	1354	0	1328	0
Fl _t Permitted		0.998			0.973	
Satd. Flow (perm)	0	1202	1354	0	1328	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	175	120	5	18	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	183	125	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.4%			ICU Level of Service A		
Analysis Period (min)	15					



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	161	110	5	17	14
Future Volume (Veh/h)	7	161	110	5	17	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	175	120	5	18	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	125				314	123
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	125				314	123
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	98
cM capacity (veh/h)	1462				676	929
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	183	125	33			
Volume Left	8	0	18			
Volume Right	0	5	15			
cSH	1462	1700	771			
Volume to Capacity	0.00*	0.07	0.04			
Queue Length 95th (m)	0.1	0.0	1.1			
Control Delay (s/veh)	0.4	0.0	9.9			
Lane LOS	A		A			
Approach Delay (s/veh)	0.4	0.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			30.4%	ICU Level of Service		A
Analysis Period (min)			15			

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	175	108	5	14	7
Future Volume (vph)	4	175	108	5	14	7
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.994		0.953	
Fl _t Protected		0.999			0.968	
Satd. Flow (prot)	0	1203	1353	0	1341	0
Fl _t Permitted		0.999			0.968	
Satd. Flow (perm)	0	1203	1353	0	1341	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	190	117	5	15	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	194	122	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

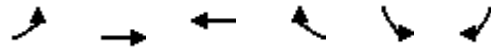
Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 29.2% ICU Level of Service A

Analysis Period (min) 15



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	175	108	5	14	7
Future Volume (Veh/h)	4	175	108	5	14	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	190	117	5	15	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	122				318	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122				318	120
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	1465				674	932
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	194	122	23			
Volume Left	4	0	15			
Volume Right	0	5	8			
cSH	1465	1700	746			
Volume to Capacity	0.00*	0.07	0.03			
Queue Length 95th (m)	0.1	0.0	0.8			
Control Delay (s/veh)	0.2	0.0	10.0			
Lane LOS	A		A			
Approach Delay (s/veh)	0.2	0.0	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			29.2%	ICU Level of Service		A
Analysis Period (min)			15			

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	154	3	0	121	3	5	0	6	9	0	10
Future Volume (vph)	5	154	3	0	121	3	5	0	6	9	0	10
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.998			0.997			0.921			0.929	
Fl _t Protected		0.999						0.980			0.977	
Satd. Flow (prot)	0	1450	0	0	1450	0	0	1312	0	0	1320	0
Fl _t Permitted		0.999						0.980			0.977	
Satd. Flow (perm)	0	1450	0	0	1450	0	0	1312	0	0	1320	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	167	3	0	132	3	5	0	7	10	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	0	0	135	0	0	12	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 25.8%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
14: Street E & Killaly St. E

2036 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	154	3	0	121	3	5	0	6	9	0	10
Future Volume (Veh/h)	5	154	3	0	121	3	5	0	6	9	0	10
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	167	3	0	132	3	5	0	7	10	0	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	135			170			323	314	169	319	314	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	135			170			323	314	169	319	314	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	98	100	99
cM capacity (veh/h)	1449			1407			621	600	876	627	600	916
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	175	135	12	21								
Volume Left	5	0	5	10								
Volume Right	3	3	7	11								
cSH	1449	1407	748	751								
Volume to Capacity	0.00*	0.00	0.02	0.03								
Queue Length 95th (m)	0.1	0.0	0.4	0.7								
Control Delay (s/veh)	0.2	0.0	9.9	9.9								
Lane LOS	A		A	A								
Approach Delay (s/veh)	0.2	0.0	9.9	9.9								
Approach LOS			A	A								
Intersection Summary												
Average Delay				1.1								
Intersection Capacity Utilization				25.8%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	12	4	79	140	2
Future Volume (vph)	8	12	4	79	140	2
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.920	0.998				
Flt Protected	0.980	0.998				
Satd. Flow (prot)	1311	0	0	1202	1358	0
Flt Permitted	0.980	0.998				
Satd. Flow (perm)	1311	0	0	1202	1358	0
Link Speed (k/h)	40	60				
Link Distance (m)	176.2	135.3				
Travel Time (s)	15.9	8.1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	13	4	86	152	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	90	154	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6	0.0				
Link Offset(m)	0.0	0.0				
Crosswalk Width(m)	4.8	4.8				
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop	Free			Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.5%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	12	4	79	140	2
Future Volume (Veh/h)	8	12	4	79	140	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	13	4	86	152	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	247	153	154			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	247	153	154			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	739	893	1426			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	90	154			
Volume Left	9	4	0			
Volume Right	13	0	2			
cSH	823	1426	1700			
Volume to Capacity	0.03	0.00*	0.09			
Queue Length 95th (m)	0.7	0.1	0.0			
Control Delay (s/veh)	9.5	0.4	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.5	0.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			21.5%	ICU Level of Service		A
Analysis Period (min)			15			

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	26	8	71	116	6
Future Volume (vph)	14	26	8	71	116	6
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912				0.993	
Flt Protected	0.983			0.995		
Satd. Flow (prot)	1303	0	0	1256	1351	0
Flt Permitted	0.983			0.995		
Satd. Flow (perm)	1303	0	0	1256	1351	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	186.1			371.1	118.9	
Travel Time (s)	16.7			22.3	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	28	9	77	126	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	0	86	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.4%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	26	8	71	116	6
Future Volume (Veh/h)	14	26	8	71	116	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	28	9	77	126	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	225	130	133			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225	130	133			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	97	99			
cM capacity (veh/h)	759	920	1452			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	43	86	133			
Volume Left	15	9	0			
Volume Right	28	0	7			
cSH	857	1452	1700			
Volume to Capacity	0.05	0.00*	0.08			
Queue Length 95th (m)	1.3	0.1	0.0			
Control Delay (s/veh)	9.4	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.4	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	1.8					
Intersection Capacity Utilization	25.4%			ICU Level of Service	A	
Analysis Period (min)	15					
* Value less than 0.01.						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	637	58	5	643	120	0	0	11	0	0	317
Future Volume (vph)	579	637	58	5	643	120	0	0	11	0	0	317
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.979				0.865			0.865
Flt Protected	0.950											
Satd. Flow (prot)	1381	1435	0	0	1423	0	0	0	1258	0	0	1258
Flt Permitted	0.950											
Satd. Flow (perm)	1381	1435	0	0	1423	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	629	692	63	5	699	130	0	0	12	0	0	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	629	755	0	0	834	0	0	0	12	0	0	345
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 107.2%

ICU Level of Service G

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2036 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	579	637	58	5	643	120	0	0	11	0	0	317
Future Volume (Veh/h)	579	637	58	5	643	120	0	0	11	0	0	317
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	629	692	63	5	699	130	0	0	12	0	0	345
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)	307											
pX, platoon unblocked	0.72							0.72	0.72	0.72	0.72	0.72
vC, conflicting volume	829				755				3101	2821	724	2736
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	568				755				3722	3333	724	3216
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1
tC, 2 stage (s)												
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	13				99				100	100	97	100
cM capacity (veh/h)	723				855				0	1	426	1
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	629	755	834	12	345							
Volume Left	629	0	5	0	0							
Volume Right	0	63	130	12	345							
cSH	723	1700	855	426	423							
Volume to Capacity	0.87	0.44	0.00*	0.03	0.82							
Queue Length 95th (m)	84.5	0.0	0.1	0.7	60.0							
Control Delay (s/veh)	33.7	0.0	0.2	13.7	41.6							
Lane LOS	D		A	B	E							
Approach Delay (s/veh)	15.3		0.2	13.7	41.6							
Approach LOS												
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

* Value less than 0.01.

APPENDIX T

2041 Future Total Detailed Capacity Analysis

Lanes, Volumes, Timings
1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

2041 FT AM
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	277	157	103	435	276	275	311	118	227	203	196
Future Volume (vph)	171	277	157	103	435	276	275	311	118	227	203	196
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor						0.99						
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.225			0.518			0.486			0.950		
Satd. Flow (perm)	355	1535	1403	889	1471	1380	842	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171			256			140			204
Link Speed (k/h)		70			70			50				60
Link Distance (m)		407.5			529.0			290.6				158.6
Travel Time (s)		21.0			27.2			20.9				9.5
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	186	301	171	112	473	300	299	338	128	247	221	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	301	171	112	473	300	299	338	128	247	221	213
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

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Synchro 12 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	32.9	32.9	9.5	32.9	32.9	9.5	32.4	32.4	9.5	32.4	32.4
Total Split (s)	14.0	56.0	56.0	10.0	52.0	52.0	18.0	37.7	37.7	16.3	36.0	36.0
Total Split (%)	11.7%	46.7%	46.7%	8.3%	43.3%	43.3%	15.0%	31.4%	31.4%	13.6%	30.0%	30.0%
Maximum Green (s)	10.5	48.1	48.1	6.5	44.1	44.1	14.5	30.3	30.3	12.8	28.6	28.6
Yellow Time (s)	3.5	5.9	5.9	3.5	5.9	5.9	3.5	5.4	5.4	3.5	5.4	5.4
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0	0.0	0.0	-2.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.9	7.9	3.5	5.9	7.9	3.5	5.4	7.4	3.5	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Don't Walk (s)		15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	58.8	46.4	44.4	51.4	42.4	40.4	48.4	32.5	30.4	12.3	28.7	28.7
Actuated g/C Ratio	0.51	0.40	0.38	0.44	0.37	0.35	0.42	0.28	0.26	0.11	0.25	0.25
v/c Ratio	0.66	0.49	0.27	0.26	0.88	0.46	0.67	0.73	0.26	0.77	0.52	0.46
Control Delay (s/veh)	28.4	29.1	4.5	17.1	53.3	7.9	32.8	49.6	6.2	68.2	44.1	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.4	29.1	4.5	17.1	53.3	7.9	32.8	49.6	6.2	68.2	44.1	9.5
LOS	C	C	A	B	D	A	C	D	A	E	D	A
Approach Delay (s/veh)		22.5			33.3			35.8			42.0	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 116

Natural Cycle: 85

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.88

Intersection Signal Delay (s/veh): 33.5

Intersection LOS: C

Intersection Capacity Utilization 81.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1  Ø1	#1  Ø2	#1  Ø3	#1  Ø4
16.3 s	37.7 s	10 s	56 s
#1  Ø5	#1  Ø6	#1  Ø7	#1  Ø8
18 s	36 s	14 s	52 s

Queues

2041 FT AM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	186	301	171	112	473	300	299	338	128	247	221	213
v/c Ratio	0.66	0.49	0.27	0.26	0.88	0.46	0.67	0.73	0.26	0.77	0.52	0.46
Control Delay (s/veh)	28.4	29.1	4.5	17.1	53.3	7.9	32.8	49.6	6.2	68.2	44.1	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.4	29.1	4.5	17.1	53.3	7.9	32.8	49.6	6.2	68.2	44.1	9.5
Queue Length 50th (m)	26.2	58.5	0.0	14.0	119.5	7.4	52.0	80.5	0.0	32.7	48.8	2.0
Queue Length 95th (m)	42.2	87.7	14.5	24.4	#187.1	30.7	77.6	#124.7	13.2	#52.8	75.7	26.5
Internal Link Dist (m)	383.5			505.0			266.6			134.6		
Turn Bay Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Base Capacity (vph)	283	664	683	435	586	684	454	462	489	333	423	459
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.45	0.25	0.26	0.81	0.44	0.66	0.73	0.26	0.74	0.52	0.46

Intersection Summary

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

Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	309	40	5	451	19	192	63	17	21	35	81
Future Volume (vph)	96	309	40	5	451	19	192	63	17	21	35	81
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1381	1226	1236	1381	1177	1236	1381	1409	0	1381	1454	1236
Flt Permitted	0.321			0.558			0.700			0.701		
Satd. Flow (perm)	467	1226	1236	811	1177	1236	1018	1409	0	1019	1454	1236
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			67		14				88
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	104	336	43	5	490	21	209	68	18	23	38	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	336	43	5	490	21	209	86	0	23	38	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	8.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	8.5	56.7	56.7	48.2	48.2	48.2	10.4	23.8		9.5	22.9	22.9
Total Split (%)	9.4%	63.0%	63.0%	53.6%	53.6%	53.6%	11.6%	26.4%		10.6%	25.4%	25.4%
Maximum Green (s)	6.0	53.2	53.2	44.7	44.7	44.7	7.9	20.3		7.0	19.4	19.4
Yellow Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.5	3.5	3.5	3.5	3.5	3.5	2.5	3.5		2.5	3.5	3.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	54.2	53.2	53.2	44.7	44.7	44.7	29.2	20.3		27.4	19.4	19.4
Actuated g/C Ratio	0.60	0.59	0.59	0.50	0.50	0.50	0.32	0.23		0.30	0.22	0.22

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.30	0.46	0.06	0.01	0.84	0.03	0.58	0.26		0.07	0.12	0.26
Control Delay (s/veh)	10.2	13.0	2.8	11.8	34.9	0.1	31.1	26.6		20.6	29.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	10.2	13.0	2.8	11.8	34.9	0.1	31.1	26.6		20.6	29.7	9.0
LOS	B	B	A	B	C	A	C	C		C	C	A
Approach Delay (s/veh)		11.5			33.3			29.8			16.1	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 23.5

Intersection LOS: C

Intersection Capacity Utilization 67.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

 Ø1	 Ø2 (R)	 Ø4	
9.5 s	23.8 s	56.7 s	
 Ø5	 Ø6 (R)	 Ø7	 Ø8
10.4 s	22.9 s	8.5 s	48.2 s

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	104	336	43	5	490	21	209	86	23	38	88
v/c Ratio	0.30	0.46	0.06	0.01	0.84	0.03	0.58	0.26	0.07	0.12	0.26
Control Delay (s/veh)	10.2	13.0	2.8	11.8	34.9	0.1	31.1	26.6	20.6	29.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.2	13.0	2.8	11.8	34.9	0.1	31.1	26.6	20.6	29.7	9.0
Queue Length 50th (m)	7.6	36.5	0.0	0.5	87.1	0.0	29.6	10.9	2.8	5.7	0.0
Queue Length 95th (m)	14.7	60.9	4.2	2.3	#161.2	0.0	50.6	24.2	8.3	14.3	12.3
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	342	724	748	402	584	647	362	328	338	313	335
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.46	0.06	0.01	0.84	0.03	0.58	0.26	0.07	0.12	0.26

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FT AM
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	316	18	10	428	0	31	7	17	0	2	2
Future Volume (vph)	10	316	18	10	428	0	31	7	17	0	2	2
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.959			0.932	
Flt Protected		0.998			0.999			0.972				
Satd. Flow (prot)	0	1026	1137	0	994	1325	0	1363	0	0	1362	0
Flt Permitted		0.998			0.999			0.972				
Satd. Flow (perm)	0	1026	1137	0	994	1325	0	1363	0	0	1362	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	11	343	20	11	465	0	34	8	18	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	354	20	0	476	0	0	60	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 64.6%	ICU Level of Service C											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	316	18	10	428	0	31	7	17	0	2	2
Future Volume (Veh/h)	10	316	18	10	428	0	31	7	17	0	2	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	343	20	11	465	0	34	8	18	0	2	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	465			363			855	852	343	874	872	465
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	465			363			855	852	343	874	872	465
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			88	97	97	100	99	100
cM capacity (veh/h)	1096			1201			273	291	700	254	283	599
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	354	20	476	0	60	4						
Volume Left	11	0	11	0	34	0						
Volume Right	0	20	0	0	18	2						
cSH	1096	1700	1201	1700	337	385						
Volume to Capacity	0.01	0.01	0.00*	0.00	0.18	0.01						
Queue Length 95th (m)	0.2	0.0	0.2	0.0	5.1	0.3						
Control Delay (s/veh)	0.4	0.0	0.3	0.0	18.0	14.5						
Lane LOS	A		A		C	B						
Approach Delay (s/veh)	0.3		0.3		18.0	14.5						
Approach LOS					C	B						
Intersection Summary												
Average Delay				1.5								
Intersection Capacity Utilization				64.6%	ICU Level of Service				C			
Analysis Period (min)				15								

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	123	6	7	102	28	5	5	4	31	4	5
Future Volume (vph)	9	123	6	7	102	28	5	5	4	31	4	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.973			0.961			0.984	
Flt Protected		0.997			0.997			0.982			0.962	
Satd. Flow (prot)	0	1405	0	0	1342	0	0	1377	0	0	1378	0
Flt Permitted		0.997			0.997			0.982			0.962	
Satd. Flow (perm)	0	1405	0	0	1342	0	0	1377	0	0	1378	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	10	134	7	8	111	30	5	5	4	34	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	151	0	0	149	0	0	14	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.0%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis
4: Killaly St. E & Lorraine Road

2041 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	123	6	7	102	28	5	5	4	31	4	5
Future Volume (Veh/h)	9	123	6	7	102	28	5	5	4	31	4	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	134	7	8	111	30	5	5	4	34	4	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	141			141			307	315	138	306	303	126
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	141			141			307	315	138	306	303	126
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	99	100	95	99	99
cM capacity (veh/h)	1442			1442			633	595	911	633	604	924
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	151	149	14	43								
Volume Left	10	8	5	34								
Volume Right	7	30	4	5								
cSH	1442	1442	677	654								
Volume to Capacity	0.00*	0.00*	0.02	0.07								
Queue Length 95th (m)	0.2	0.1	0.5	1.7								
Control Delay (s/veh)	0.6	0.4	10.4	10.9								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.6	0.4	10.4	10.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			25.0%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Future Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.977			0.966			0.898	
Flt Protected		0.972						0.996			0.991	
Satd. Flow (prot)	0	1356	0	0	1282	0	0	1409	0	0	1304	0
Flt Permitted		0.972						0.996			0.991	
Satd. Flow (perm)	0	1356	0	0	1282	0	0	1409	0	0	1304	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	299	221	7	3	315	67	3	27	10	57	20	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	0	385	0	0	40	0	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	97.0%											
Analysis Period (min)	15											
	ICU Level of Service F											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2041 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Future Volume (vph)	275	203	6	3	290	62	3	25	9	52	18	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	299	221	7	3	315	67	3	27	10	57	20	236
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	527	385	40	313								
Volume Left (vph)	299	3	3	57								
Volume Right (vph)	7	67	10	236								
Hadj (s)	0.21	0.12	-0.11	-0.39								
Departure Headway (s)	6.1	6.2	7.5	6.3								
Degree Utilization, x	0.89	0.66	0.08	0.55								
Capacity (veh/h)	586	550	403	542								
Control Delay (s/veh)	38.8	20.7	11.2	16.5								
Approach Delay (s/veh)	38.8	20.7	11.2	16.5								
Approach LOS	E	C	B	C								
Intersection Summary												
Delay				26.9								
Level of Service				D								
Intersection Capacity Utilization				97.0%	ICU Level of Service	F						
Analysis Period (min)				15								

Intersection

Intersection Delay, s/veh 25.6
Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	275	203	6	3	290	62	3	25	9	52	18	217
Future Vol, veh/h	275	203	6	3	290	62	3	25	9	52	18	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	299	221	7	3	315	67	3	27	10	57	20	236
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	37.1			19.1			11.1			16.3		
HCM LOS	E			C			B			C		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	57%	1%	18%
Vol Thru, %	68%	42%	82%	6%
Vol Right, %	24%	1%	17%	76%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	484	355	287
LT Vol	3	275	3	52
Through Vol	25	203	290	18
RT Vol	9	6	62	217
Lane Flow Rate	40	526	386	312
Geometry Grp	1	1	1	1
Degree of Util (X)	0.082	0.876	0.64	0.538
Departure Headway (Hd)	7.374	5.996	5.967	6.204
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	483	610	606	580
Service Time	5.461	3.996	4.018	4.257
HCM Lane V/C Ratio	0.083	0.862	0.637	0.538
HCM Control Delay, s/veh	11.1	37.1	19.1	16.3
HCM Lane LOS	B	E	C	C
HCM 95th-tile Q	0.3	10.1	4.6	3.2

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	73	247	457	76	67	302
Future Volume (vph)	73	247	457	76	67	302
Ideal Flow (vphpl)	1504	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.981			
Flt Protected	0.950					0.991
Satd. Flow (prot)	1401	1126	1335	0	0	1193
Flt Permitted	0.950					0.991
Satd. Flow (perm)	1401	1126	1335	0	0	1193
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	268	497	83	73	328
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	268	580	0	0	401
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.34	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	84.7%			ICU Level of Service E		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
7: Elizabeth Street & Street A

2041 FT AM
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	73	247	457	76	67	302
Future Volume (Veh/h)	73	247	457	76	67	302
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	268	497	83	73	328
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						290
pX, platoon unblocked	0.95					
vC, conflicting volume	1013	539			580	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	987	539			580	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	51			93	
cM capacity (veh/h)	242	543			994	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	79	268	580	401		
Volume Left	79	0	0	73		
Volume Right	0	268	83	0		
cSH	242	543	1700	994		
Volume to Capacity	0.33	0.49	0.34	0.07		
Queue Length 95th (m)	10.9	21.7	0.0	1.9		
Control Delay (s/veh)	27.0	17.9	0.0	2.3		
Lane LOS	D	C			A	
Approach Delay (s/veh)	20.0		0.0	2.3		
Approach LOS	C					
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			84.7%	ICU Level of Service	E	
Analysis Period (min)			15			

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	106	427	15	29	347
Future Volume (vph)	30	106	427	15	29	347
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.895		0.995			
Flt Protected	0.989					0.996
Satd. Flow (prot)	1287	0	1354	0	0	1258
Flt Permitted	0.989					0.996
Satd. Flow (perm)	1287	0	1354	0	0	1258
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	115	464	16	32	377
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	480	0	0	409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	79.5%			ICU Level of Service D		
Analysis Period (min)	15					

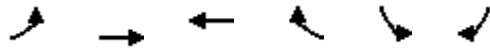
HCM Unsignalized Intersection Capacity Analysis
8: Elizabeth Street & Street B

2041 FT AM
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	106	427	15	29	347
Future Volume (Veh/h)	30	106	427	15	29	347
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	115	464	16	32	377
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	913	472			480	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	913	472			480	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	81			97	
cM capacity (veh/h)	295	592			1082	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	148	480	409			
Volume Left	33	0	32			
Volume Right	115	16	0			
cSH	483	1700	1082			
Volume to Capacity	0.31	0.28	0.03			
Queue Length 95th (m)	10.3	0.0	0.7			
Control Delay (s/veh)	15.7	0.0	1.0			
Lane LOS	C		A			
Approach Delay (s/veh)	15.7	0.0	1.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			79.5%	ICU Level of Service		D
Analysis Period (min)			15			

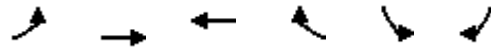
						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	41	401	37	40	337
Future Volume (vph)	25	41	401	37	40	337
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.916		0.989			
Flt Protected	0.982					0.995
Satd. Flow (prot)	1308	0	1346	0	0	1198
Flt Permitted	0.982					0.995
Satd. Flow (perm)	1308	0	1346	0	0	1198
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	45	436	40	43	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	0	476	0	0	409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.8%			ICU Level of Service D		
Analysis Period (min)	15					

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	41	401	37	40	337
Future Volume (Veh/h)	25	41	401	37	40	337
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	45	436	40	43	366
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	908	456			476	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	908	456			476	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	93			96	
cM capacity (veh/h)	294	604			1086	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	72	476	409			
Volume Left	27	0	43			
Volume Right	45	40	0			
cSH	433	1700	1086			
Volume to Capacity	0.17	0.28	0.04			
Queue Length 95th (m)	4.7	0.0	1.0			
Control Delay (s/veh)	15.0	0.0	1.3			
Lane LOS	B		A			
Approach Delay (s/veh)	15.0	0.0	1.3			
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			77.8%	ICU Level of Service		D
Analysis Period (min)			15			



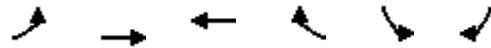
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	206	296	2	2	16
Future Volume (vph)	20	206	296	2	2	16
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.999		0.879	
Flt Protected		0.996			0.995	
Satd. Flow (prot)	0	1199	1359	0	1272	0
Flt Permitted		0.996			0.995	
Satd. Flow (perm)	0	1199	1359	0	1272	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	224	322	2	2	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	246	324	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization		52.5%		ICU Level of Service A		
Analysis Period (min) 15						

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	206	296	2	2	16
Future Volume (Veh/h)	20	206	296	2	2	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	224	322	2	2	17
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	324				591	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324				591	323
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	98
cM capacity (veh/h)	1236				461	718
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	246	324	19			
Volume Left	22	0	2			
Volume Right	0	2	17			
cSH	1236	1700	678			
Volume to Capacity	0.02	0.19	0.03			
Queue Length 95th (m)	0.4	0.0	0.7			
Control Delay (s/veh)	0.9	0.0	10.5			
Lane LOS	A		B			
Approach Delay (s/veh)	0.9	0.0	10.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization		52.5%		ICU Level of Service		A
Analysis Period (min)		15				



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	170	230	4	9	43
Future Volume (vph)	22	170	230	4	9	43
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.889	
Flt Protected		0.994			0.991	
Satd. Flow (prot)	0	1197	1358	0	1281	0
Flt Permitted		0.994			0.991	
Satd. Flow (perm)	0	1197	1358	0	1281	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	185	250	4	10	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	209	254	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 46.7%				ICU Level of Service A		
Analysis Period (min) 15						

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	170	230	4	9	43
Future Volume (Veh/h)	22	170	230	4	9	43
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	185	250	4	10	47
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	254				485	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254				485	252
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	94
cM capacity (veh/h)	1311				531	787
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	209	254	57			
Volume Left	24	0	10			
Volume Right	0	4	47			
cSH	1311	1700	725			
Volume to Capacity	0.02	0.15	0.08			
Queue Length 95th (m)	0.4	0.0	2.0			
Control Delay (s/veh)	1.0	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	1.0	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			46.7%	ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	135	131	4	9	52
Future Volume (vph)	26	135	131	4	9	52
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.996		0.885	
Fl _t Protected		0.992			0.993	
Satd. Flow (prot)	0	1194	1355	0	1278	0
Fl _t Permitted		0.992			0.993	
Satd. Flow (perm)	0	1194	1355	0	1278	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	147	142	4	10	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	175	146	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

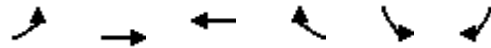
Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.7% ICU Level of Service A

Analysis Period (min) 15

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	135	131	4	9	52
Future Volume (Veh/h)	26	135	131	4	9	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	147	142	4	10	57
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	146				347	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	146				347	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	94
cM capacity (veh/h)	1436				637	903
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	175	146	67			
Volume Left	28	0	10			
Volume Right	0	4	57			
cSH	1436	1700	850			
Volume to Capacity	0.02	0.09	0.08			
Queue Length 95th (m)	0.5	0.0	2.0			
Control Delay (s/veh)	1.3	0.0	9.6			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			37.7%	ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	130	109	3	7	26
Future Volume (vph)	13	130	109	3	7	26
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.997		0.895	
Flt Protected		0.996			0.989	
Satd. Flow (prot)	0	1199	1357	0	1287	0
Flt Permitted		0.996			0.989	
Satd. Flow (perm)	0	1199	1357	0	1287	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	141	118	3	8	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	155	121	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 28.4%			ICU Level of Service A			
Analysis Period (min) 15						

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	130	109	3	7	26
Future Volume (Veh/h)	13	130	109	3	7	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	141	118	3	8	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	121				289	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121				289	120
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	97
cM capacity (veh/h)	1467				695	932
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	155	121	36			
Volume Left	14	0	8			
Volume Right	0	3	28			
cSH	1467	1700	867			
Volume to Capacity	0.00*	0.07	0.04			
Queue Length 95th (m)	0.2	0.0	1.0			
Control Delay (s/veh)	0.7	0.0	9.3			
Lane LOS	A		A			
Approach Delay (s/veh)	0.7	0.0	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		28.4%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	153	9	0	181	2	18	0	3	5	0	35
Future Volume (vph)	17	153	9	0	181	2	18	0	3	5	0	35
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.993			0.999			0.982			0.881	
Flt Protected		0.995						0.958			0.994	
Satd. Flow (prot)	0	1437	0	0	1452	0	0	1368	0	0	1273	0
Flt Permitted		0.995						0.958			0.994	
Satd. Flow (perm)	0	1437	0	0	1452	0	0	1368	0	0	1273	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	166	10	0	197	2	20	0	3	5	0	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	194	0	0	199	0	0	23	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.5%											
Analysis Period (min)	15											
	ICU Level of Service A											

HCM Unsignalized Intersection Capacity Analysis
14: Street E & Killaly St. E

2041 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	153	9	0	181	2	18	0	3	5	0	35
Future Volume (Veh/h)	17	153	9	0	181	2	18	0	3	5	0	35
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	166	10	0	197	2	20	0	3	5	0	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	199			176			443	406	171	408	410	198
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	199			176			443	406	171	408	410	198
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	100	100	99	100	95
cM capacity (veh/h)	1373			1400			496	527	873	546	524	843
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	194	199	23	43								
Volume Left	18	0	20	5								
Volume Right	10	2	3	38								
cSH	1373	1400	526	793								
Volume to Capacity	0.01	0.00	0.04	0.05								
Queue Length 95th (m)	0.3	0.0	1.1	1.4								
Control Delay (s/veh)	0.8	0.0	12.2	9.8								
Lane LOS	A		B	A								
Approach Delay (s/veh)	0.8	0.0	12.2	9.8								
Approach LOS			B	A								
Intersection Summary												
Average Delay				1.9								
Intersection Capacity Utilization				41.5%	ICU Level of Service			A				
Analysis Period (min)				15								

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	6	3	45	38	2
Future Volume (vph)	6	6	3	45	38	2
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.994	
Flt Protected	0.976			0.997		
Satd. Flow (prot)	1323	0	0	1200	1353	0
Flt Permitted	0.976			0.997		
Satd. Flow (perm)	1323	0	0	1200	1353	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	176.2			135.3	371.1	
Travel Time (s)	15.9			8.1	22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	7	3	49	41	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	52	43	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	17.5%			ICU Level of Service A		
Analysis Period (min)	15					

									
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	6	6	3	45	38	2			
Future Volume (Veh/h)	6	6	3	45	38	2			
Sign Control	Stop			Free	Free				
Grade	0%			0%	0%				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	7	7	3	49	41	2			
Pedestrians									
Lane Width (m)									
Walking Speed (m/s)									
Percent Blockage									
Right turn flare (veh)									
Median type				None	None				
Median storage veh									
Upstream signal (m)									
pX, platoon unblocked									
vC, conflicting volume	97	42	43						
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	97	42	43						
tC, single (s)	6.4	6.2	4.1						
tC, 2 stage (s)									
tF (s)	3.5	3.3	2.2						
p0 queue free %	99	99	100						
cM capacity (veh/h)	900	1029	1566						
Direction, Lane #	EB 1	NB 1	SB 1						
Volume Total	14	52	43						
Volume Left	7	3	0						
Volume Right	7	0	2						
cSH	960	1566	1700						
Volume to Capacity	0.01	0.00*	0.03						
Queue Length 95th (m)	0.4	0.0	0.0						
Control Delay (s/veh)	8.8	0.4	0.0						
Lane LOS	A	A							
Approach Delay (s/veh)	8.8	0.4	0.0						
Approach LOS	A								
Intersection Summary									
Average Delay				1.3					
Intersection Capacity Utilization				17.5%	ICU Level of Service	A			
Analysis Period (min)				15					
* Value less than 0.01.									

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	13	5	40	27	4
Future Volume (vph)	9	13	5	40	27	4
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921				0.984	
Flt Protected	0.980			0.995		
Satd. Flow (prot)	1312	0	0	1256	1339	0
Flt Permitted	0.980			0.995		
Satd. Flow (perm)	1312	0	0	1256	1339	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	186.1			371.1	118.9	
Travel Time (s)	16.7			22.3	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	14	5	43	29	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	0	48	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.3%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	13	5	40	27	4
Future Volume (Veh/h)	9	13	5	40	27	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	14	5	43	29	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	84	31	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	84	31	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	915	1043	1579			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	24	48	33			
Volume Left	10	5	0			
Volume Right	14	0	4			
cSH	985	1579	1700			
Volume to Capacity	0.02	0.00*	0.02			
Queue Length 95th (m)	0.6	0.1	0.0			
Control Delay (s/veh)	8.7	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.7	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	2.4					
Intersection Capacity Utilization	19.3%			ICU Level of Service	A	
Analysis Period (min)	15					
* Value less than 0.01.						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	437	27	3	710	13	0	0	8	0	0	79
Future Volume (vph)	161	437	27	3	710	13	0	0	8	0	0	79
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.998				0.865			0.865
Flt Protected	0.950											
Satd. Flow (prot)	1381	1441	0	0	1451	0	0	0	1258	0	0	1258
Flt Permitted	0.950											
Satd. Flow (perm)	1381	1441	0	0	1451	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	475	29	3	772	14	0	0	9	0	0	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	504	0	0	789	0	0	0	9	0	0	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 87.3% ICU Level of Service E

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2041 FT AM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	437	27	3	710	13	0	0	8	0	0	79
Future Volume (Veh/h)	161	437	27	3	710	13	0	0	8	0	0	79
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	175	475	29	3	772	14	0	0	9	0	0	86
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	307											
pX, platoon unblocked	0.65							0.65	0.65	0.65	0.65	0.65
vC, conflicting volume	786	504			1711			1632	490	1619	1639	779
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	397	504			1825			1703	490	1684	1715	386
tC, single (s)	4.1	4.1			7.1			6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2	2.2			3.5			4.0	3.3	3.5	4.0	3.3
p0 queue free %	77	100			100			100	98	100	100	80
cM capacity (veh/h)	752	1061			25			45	579	39	45	428
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	175	504	789	9	86							
Volume Left	175	0	3	0	0							
Volume Right	0	29	14	9	86							
cSH	752	1700	1061	579	428							
Volume to Capacity	0.23	0.30	0.00*	0.02	0.20							
Queue Length 95th (m)	7.2	0.0	0.1	0.4	5.9							
Control Delay (s/veh)	11.2	0.0	0.1	11.3	15.5							
Lane LOS	B		A	B	C							
Approach Delay (s/veh)	2.9		0.1	11.3	15.5							
Approach LOS			B	C								
Intersection Summary												
Average Delay 2.2												
Intersection Capacity Utilization 87.3% ICU Level of Service E												
Analysis Period (min) 15												

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	591	111	50	497	297	93	265	43	503	381	376
Future Volume (vph)	297	591	111	50	497	297	93	265	43	503	381	376
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		60.0	110.0		30.0	155.0		35.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor						1.00						
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.157			0.281			0.487			0.950		
Satd. Flow (perm)	248	1535	1403	482	1471	1389	844	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			159			115			159
Link Speed (k/h)		70			70			50				60
Link Distance (m)		407.5			529.0			290.6				158.6
Travel Time (s)		21.0			27.2			20.9				9.5
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	323	642	121	54	540	323	101	288	47	547	414	409
Shared Lane Traffic (%)												
Lane Group Flow (vph)	323	642	121	54	540	323	101	288	47	547	414	409
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		2			Free
Detector Phase	7	4	4	3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.5	32.9	32.9	9.5	32.9		9.5	32.4	32.4	9.5	32.4	
Total Split (s)	32.2	93.7	93.7	11.7	73.2		9.6	37.4	37.4	37.2	65.0	
Total Split (%)	17.9%	52.1%	52.1%	6.5%	40.7%		5.3%	20.8%	20.8%	20.7%	36.1%	
Maximum Green (s)	28.7	85.8	85.8	8.2	65.3		6.1	30.0	30.0	33.7	57.6	
Yellow Time (s)	3.5	5.9	5.9	3.5	5.9		3.5	5.4	5.4	3.5	5.4	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0		0.0	-2.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.9	7.9	3.5	5.9		3.5	5.4	7.4	3.5	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	
Walk Time (s)		5.0	5.0		5.0			5.0	5.0		5.0	
Flash Don't Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	101.9	90.3	88.3	77.3	67.3	180.0	40.1	32.1	30.1	33.6	57.6	180.0
Actuated g/C Ratio	0.57	0.50	0.49	0.43	0.37	1.00	0.22	0.18	0.17	0.19	0.32	1.00
v/c Ratio	0.95	0.83	0.16	0.21	0.98	0.23	0.47	0.98	0.14	0.97	0.75	0.33
Control Delay (s/veh)	72.5	50.3	6.2	21.5	89.2	0.4	52.0	119.4	0.8	102.8	65.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.5	50.3	6.2	21.5	89.2	0.4	52.0	119.4	0.8	102.8	65.0	0.7
LOS	E	D	A	C	F	A	D	F	A	F	E	A
Approach Delay (s/veh)		52.0			53.9			91.0			60.9	
Approach LOS		D			D			F			E	

Intersection Summary

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 180

Natural Cycle: 145

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.98

Intersection Signal Delay (s/veh): 60.1

Intersection LOS: E

Intersection Capacity Utilization 93.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

#1  Ø1	#1  Ø2	#1  Ø3	#1  Ø4
37.2 s	37.4 s	11.7 s	93.7 s
#1  Ø5	#1  Ø6	#1  Ø7	#1  Ø8
9.6 s	65 s	32.2 s	73.2 s

Queues

2041 FT PM

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Group Flow (vph)	323	642	121	54	540	323	101	288	47	547	414	409		
v/c Ratio	0.95	0.83	0.16	0.21	0.98	0.23	0.47	0.98	0.14	0.97	0.75	0.33		
Control Delay (s/veh)	72.5	50.3	6.2	21.5	89.2	0.4	52.0	119.4	0.8	102.8	65.0	0.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	72.5	50.3	6.2	21.5	89.2	0.4	52.0	119.4	0.8	102.8	65.0	0.7		
Queue Length 50th (m)	88.0	232.3	3.1	9.1	229.8	0.0	24.8	114.8	0.0	112.7	143.2	0.0		
Queue Length 95th (m)	#159.8	305.1	16.4	16.8	#324.3	0.0	40.3	#183.8	0.0	#154.4	189.3	0.0		
Internal Link Dist (m)	383.5				505.0		266.6				134.6			
Turn Bay Length (m)	115.0			110.0	100.0			60.0	110.0			30.0	155.0	35.0
Base Capacity (vph)	339	770	742	260	549	1389	214	294	341	564	549	1240		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.95	0.83	0.16	0.21	0.98	0.23	0.47	0.98	0.14	0.97	0.75	0.33		

Intersection Summary

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

Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	410	121	19	434	112	96	102	23	303	280	191
Future Volume (vph)	229	410	121	19	434	112	96	102	23	303	280	191
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1381	1226	1236	1381	1177	1236	1381	1413	0	1381	1454	1236
Flt Permitted	0.285			0.505			0.415			0.525		
Satd. Flow (perm)	414	1226	1236	734	1177	1236	603	1413	0	763	1454	1236
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132			97		12				208
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	249	446	132	21	472	122	104	111	25	329	304	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	446	132	21	472	122	104	136	0	329	304	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	8.5	22.5	22.5	22.5	22.5	22.5	9.5	20.5		9.5	22.5	22.5
Total Split (s)	11.0	53.0	53.0	42.0	42.0	42.0	9.5	23.0		14.0	27.5	27.5
Total Split (%)	12.2%	58.9%	58.9%	46.7%	46.7%	46.7%	10.6%	25.6%		15.6%	30.6%	30.6%
Maximum Green (s)	8.5	49.5	49.5	38.5	38.5	38.5	7.0	19.5		11.5	24.0	24.0
Yellow Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.5	3.5	3.5	3.5	3.5	3.5	2.5	3.5		2.5	3.5	3.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	50.5	49.5	49.5	38.5	38.5	38.5	27.5	19.5		34.5	24.0	24.0
Actuated g/C Ratio	0.56	0.55	0.55	0.43	0.43	0.43	0.31	0.22		0.38	0.27	0.27

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.77	0.66	0.18	0.07	0.94	0.21	0.43	0.43		0.89	0.79	0.43
Control Delay (s/veh)	29.9	20.3	2.5	16.1	54.3	6.1	25.2	32.7		51.6	46.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	29.9	20.3	2.5	16.1	54.3	6.1	25.2	32.7		51.6	46.9	7.0
LOS	C	C	A	B	D	A	C	C		D	D	A
Approach Delay (s/veh)		20.4			43.4			29.4			38.9	
Approach LOS		C			D			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.94

Intersection Signal Delay (s/veh): 33.0

Intersection LOS: C

Intersection Capacity Utilization 89.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

Ø1				Ø2 (R)				Ø4			
14 s				23 s				53 s			
Ø5		Ø6 (R)		Ø7		Ø8					
9.5 s		27.5 s		11 s		42 s					

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	249	446	132	21	472	122	104	136	329	304	208
v/c Ratio	0.77	0.66	0.18	0.07	0.94	0.21	0.43	0.43	0.89	0.79	0.43
Control Delay (s/veh)	29.9	20.3	2.5	16.1	54.3	6.1	25.2	32.7	51.6	46.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.9	20.3	2.5	16.1	54.3	6.1	25.2	32.7	51.6	46.9	7.0
Queue Length 50th (m)	23.0	61.8	0.0	2.2	94.6	2.6	12.6	19.8	48.3	52.0	0.0
Queue Length 95th (m)	#49.9	103.2	8.0	7.0	#170.6	13.1	24.4	37.8	#108.7	#94.3	17.1
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	323	674	739	313	503	584	244	315	371	387	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.66	0.18	0.07	0.94	0.21	0.43	0.43	0.89	0.79	0.43

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FT PM
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	499	130	15	454	0	74	6	26	0	9	25
Future Volume (vph)	16	499	130	15	454	0	74	6	26	0	9	25
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.967			0.901	
Flt Protected		0.998			0.998			0.966				
Satd. Flow (prot)	0	1026	1137	0	994	1325	0	1367	0	0	1319	0
Flt Permitted		0.998			0.998			0.966				
Satd. Flow (perm)	0	1026	1137	0	994	1325	0	1367	0	0	1319	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	17	542	141	16	493	0	80	7	28	0	10	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	559	141	0	509	0	0	115	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	81.6%											
Analysis Period (min)	15											
ICU Level of Service D												

HCM Unsignalized Intersection Capacity Analysis
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FT PM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	499	130	15	454	0	74	6	26	0	9	25
Future Volume (Veh/h)	16	499	130	15	454	0	74	6	26	0	9	25
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	542	141	16	493	0	80	7	28	0	10	27
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	493			683			1133	1101	542	1133	1242	493
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			683			1133	1101	542	1133	1242	493
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			50	97	95	100	94	95
cM capacity (veh/h)	1071			915			160	205	540	162	169	578
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	559	141	509	0	115	37						
Volume Left	17	0	16	0	80	0						
Volume Right	0	141	0	0	28	27						
cSH	1071	1700	915	1700	197	349						
Volume to Capacity	0.02	0.08	0.02	0.00	0.58	0.11						
Queue Length 95th (m)	0.4	0.0	0.4	0.0	25.7	2.8						
Control Delay (s/veh)	0.4	0.0	0.5	0.0	46.2	16.5						
Lane LOS	A		A		E	C						
Approach Delay (s/veh)	0.4		0.5		46.2	16.5						
Approach LOS					E	C						
Intersection Summary												
Average Delay	4.7											
Intersection Capacity Utilization	81.6%			ICU Level of Service			D					
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	215	6	6	146	92	7	4	8	157	10	6
Future Volume (vph)	14	215	6	6	146	92	7	4	8	157	10	6
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.949			0.942			0.995	
Flt Protected		0.997			0.999			0.981			0.957	
Satd. Flow (prot)	0	1406	0	0	1324	0	0	1346	0	0	1385	0
Flt Permitted		0.997			0.999			0.981			0.957	
Satd. Flow (perm)	0	1406	0	0	1324	0	0	1346	0	0	1385	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	15	234	7	7	159	100	8	4	9	171	11	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	266	0	0	21	0	0	189	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.3%											
Analysis Period (min)	15											
	ICU Level of Service A											

HCM Unsignalized Intersection Capacity Analysis
4: Killaly St. E & Lorraine Road

2041 FT PM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	215	6	6	146	92	7	4	8	157	10	6
Future Volume (Veh/h)	14	215	6	6	146	92	7	4	8	157	10	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	234	7	7	159	100	8	4	9	171	11	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	259			241			503	541	238	502	494	209
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259			241			503	541	238	502	494	209
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			98	99	99	63	98	99
cM capacity (veh/h)	1306			1326			461	442	801	465	470	831
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	256	266	21	189								
Volume Left	15	7	8	171								
Volume Right	7	100	9	7								
cSH	1306	1326	558	473								
Volume to Capacity	0.01	0.00*	0.04	0.40								
Queue Length 95th (m)	0.3	0.1	0.9	15.1								
Control Delay (s/veh)	0.6	0.3	11.7	17.6								
Lane LOS	A	A	B	C								
Approach Delay (s/veh)	0.6	0.3	11.7	17.6								
Approach LOS			B	C								
Intersection Summary												
Average Delay			5.2									
Intersection Capacity Utilization			49.3%	ICU Level of Service					A			
Analysis Period (min)			15									

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Future Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.972			0.986			0.923	
Flt Protected		0.981			0.998			0.992			0.984	
Satd. Flow (prot)	0	1357	0	0	1283	0	0	1435	0	0	1328	0
Flt Permitted		0.981			0.998			0.992			0.984	
Satd. Flow (perm)	0	1357	0	0	1283	0	0	1435	0	0	1328	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	109	174	4	8	146	41	5	22	3	77	27	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	287	0	0	195	0	0	30	0	0	243	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	64.2%											
Analysis Period (min)	15											
	ICU Level of Service C											

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2041 FT PM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Future Volume (vph)	100	160	4	7	134	38	5	20	3	71	25	128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	174	4	8	146	41	5	22	3	77	27	139
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	287	195	30	243								
Volume Left (vph)	109	8	5	77								
Volume Right (vph)	4	41	3	139								
Hadj (s)	0.19	0.09	-0.01	-0.26								
Departure Headway (s)	5.1	5.1	5.6	4.9								
Degree Utilization, x	0.41	0.28	0.05	0.33								
Capacity (veh/h)	671	658	559	672								
Control Delay (s/veh)	11.5	10.1	8.8	10.4								
Approach Delay (s/veh)	11.5	10.1	8.8	10.4								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay				10.7								
Level of Service				B								
Intersection Capacity Utilization				64.2%	ICU Level of Service	C						
Analysis Period (min)				15								

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	100	160	4	7	134	38	5	20	3	71	25	128
Future Vol, veh/h	100	160	4	7	134	38	5	20	3	71	25	128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	109	174	4	8	146	41	5	22	3	77	27	139
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	11.3	9.7	8.8	10.3
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	38%	4%	32%
Vol Thru, %	71%	61%	75%	11%
Vol Right, %	11%	2%	21%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	264	179	224
LT Vol	5	100	7	71
Through Vol	20	160	134	25
RT Vol	3	4	38	128
Lane Flow Rate	30	287	195	243
Geometry Grp	1	1	1	1
Degree of Util (X)	0.047	0.394	0.262	0.328
Departure Headway (Hd)	5.502	4.949	4.853	4.848
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	720	732	735
Service Time	3.502	3.025	2.936	2.923
HCM Lane V/C Ratio	0.046	0.399	0.266	0.331
HCM Control Delay, s/veh	8.8	11.3	9.7	10.3
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.1	1.9	1	1.4

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	108	291	5	187	288
Future Volume (vph)	23	108	291	5	187	288
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.998			
Flt Protected	0.950					0.981
Satd. Flow (prot)	1381	1126	1358	0	0	1181
Flt Permitted	0.950					0.981
Satd. Flow (perm)	1381	1126	1358	0	0	1181
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	117	316	5	203	313
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	117	321	0	0	516
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	74.2%			ICU Level of Service D		
Analysis Period (min)	15					

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	108	291	5	187	288
Future Volume (Veh/h)	23	108	291	5	187	288
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	117	316	5	203	313
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						290
pX, platoon unblocked	0.80					
vC, conflicting volume	1038	319			321	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	923	319			321	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	84			84	
cM capacity (veh/h)	201	722			1239	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	25	117	321	516		
Volume Left	25	0	0	203		
Volume Right	0	117	5	0		
cSH	201	722	1700	1239		
Volume to Capacity	0.12	0.16	0.19	0.16		
Queue Length 95th (m)	3.4	4.6	0.0	4.7		
Control Delay (s/veh)	25.5	10.9	0.0	4.4		
Lane LOS	D	B		A		
Approach Delay (s/veh)	13.5		0.0	4.4		
Approach LOS	B					
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			74.2%		ICU Level of Service	D
Analysis Period (min)			15			

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	47	250	2	81	230
Future Volume (vph)	4	47	250	2	81	230
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875		0.999			
Flt Protected	0.996					0.987
Satd. Flow (prot)	1267	0	1359	0	0	1246
Flt Permitted	0.996					0.987
Satd. Flow (perm)	1267	0	1359	0	0	1246
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	51	272	2	88	250
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	274	0	0	338
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.6%			ICU Level of Service B		
Analysis Period (min)	15					

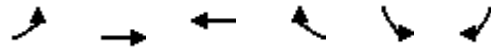
HCM Unsignalized Intersection Capacity Analysis
8: Elizabeth Street & Street B

2041 FT PM
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	47	250	2	81	230
Future Volume (Veh/h)	4	47	250	2	81	230
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	51	272	2	88	250
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	699	273			274	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	699	273			274	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	93			93	
cM capacity (veh/h)	378	766			1289	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	55	274	338			
Volume Left	4	0	88			
Volume Right	51	2	0			
cSH	713	1700	1289			
Volume to Capacity	0.08	0.16	0.07			
Queue Length 95th (m)	2.0	0.0	1.8			
Control Delay (s/veh)	10.5	0.0	2.6			
Lane LOS	B		A			
Approach Delay (s/veh)	10.5	0.0	2.6			
Approach LOS	B					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			56.6%	ICU Level of Service	B	
Analysis Period (min)			15			

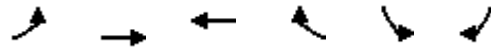
						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	10	241	3	12	223
Future Volume (vph)	7	10	241	3	12	223
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922		0.998			
Flt Protected	0.979					0.997
Satd. Flow (prot)	1312	0	1358	0	0	1200
Flt Permitted	0.979					0.997
Satd. Flow (perm)	1312	0	1358	0	0	1200
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	11	262	3	13	242
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	265	0	0	255
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.3%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	10	241	3	12	223
Future Volume (Veh/h)	7	10	241	3	12	223
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	11	262	3	13	242
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	532	264			265	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	532	264			265	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			99	
cM capacity (veh/h)	503	775			1299	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	19	265	255			
Volume Left	8	0	13			
Volume Right	11	3	0			
cSH	632	1700	1299			
Volume to Capacity	0.03	0.16	0.01			
Queue Length 95th (m)	0.7	0.0	0.2			
Control Delay (s/veh)	10.9	0.0	0.5			
Lane LOS	B		A			
Approach Delay (s/veh)	10.9	0.0	0.5			
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			43.3%	ICU Level of Service		A
Analysis Period (min)			15			

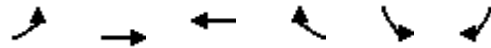


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	163	137	7	10	18
Future Volume (vph)	28	163	137	7	10	18
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.913	
Flt Protected		0.993			0.983	
Satd. Flow (prot)	0	1195	1351	0	1305	0
Flt Permitted		0.993			0.983	
Satd. Flow (perm)	0	1195	1351	0	1305	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	177	149	8	11	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	207	157	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 39.5% ICU Level of Service A						
Analysis Period (min) 15						

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	163	137	7	10	18
Future Volume (Veh/h)	28	163	137	7	10	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	177	149	8	11	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	157				390	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157				390	153
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	98
cM capacity (veh/h)	1423				601	893
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	207	157	31			
Volume Left	30	0	11			
Volume Right	0	8	20			
cSH	1423	1700	762			
Volume to Capacity	0.02	0.09	0.04			
Queue Length 95th (m)	0.5	0.0	1.0			
Control Delay (s/veh)	1.3	0.0	9.9			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			39.5%	ICU Level of Service		A
Analysis Period (min)			15			

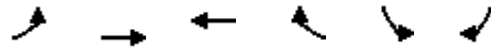


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	171	138	12	18	6
Future Volume (vph)	2	171	138	12	18	6
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.989		0.965	
Flt Protected		0.999			0.964	
Satd. Flow (prot)	0	1203	1346	0	1353	0
Flt Permitted		0.999			0.964	
Satd. Flow (perm)	0	1203	1346	0	1353	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	186	150	13	20	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	188	163	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 26.4%			ICU Level of Service A			
Analysis Period (min) 15						



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	171	138	12	18	6
Future Volume (Veh/h)	2	171	138	12	18	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	186	150	13	20	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	163				347	157
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	163				347	157
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1416				649	889
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	188	163	27			
Volume Left	2	0	20			
Volume Right	0	13	7			
cSH	1416	1700	698			
Volume to Capacity	0.00*	0.10	0.04			
Queue Length 95th (m)	0.0	0.0	1.0			
Control Delay (s/veh)	0.1	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s/veh)	0.1	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			26.4%	ICU Level of Service		A
Analysis Period (min)			15			

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	200	141	12	19	7
Future Volume (vph)	2	200	141	12	19	7
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.989		0.963	
Fl _t Protected					0.965	
Satd. Flow (prot)	0	1204	1346	0	1351	0
Fl _t Permitted					0.965	
Satd. Flow (perm)	0	1204	1346	0	1351	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	217	153	13	21	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	219	166	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

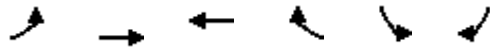
Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 28.8% ICU Level of Service A

Analysis Period (min) 15

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	200	141	12	19	7
Future Volume (Veh/h)	2	200	141	12	19	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	217	153	13	21	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	166				381	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	166				381	160
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1412				621	886
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	219	166	29			
Volume Left	2	0	21			
Volume Right	0	13	8			
cSH	1412	1700	677			
Volume to Capacity	0.00*	0.10	0.04			
Queue Length 95th (m)	0.0	0.0	1.1			
Control Delay (s/veh)	0.1	0.0	10.6			
Lane LOS	A		B			
Approach Delay (s/veh)	0.1	0.0	10.6			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			28.8%	ICU Level of Service	A	
Analysis Period (min)			15			
* Value less than 0.01.						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	218	149	10	16	4
Future Volume (vph)	1	218	149	10	16	4
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.991		0.974	
Fl _t Protected					0.961	
Satd. Flow (prot)	0	1204	1349	0	1361	0
Fl _t Permitted					0.961	
Satd. Flow (perm)	0	1204	1349	0	1361	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	237	162	11	17	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	238	173	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 29.0% ICU Level of Service A

Analysis Period (min) 15

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	218	149	10	16	4
Future Volume (Veh/h)	1	218	149	10	16	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	237	162	11	17	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	173				407	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	173				407	168
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1404				600	877
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	238	173	21			
Volume Left	1	0	17			
Volume Right	0	11	4			
cSH	1404	1700	639			
Volume to Capacity	0.00*	0.10	0.03			
Queue Length 95th (m)	0.0	0.0	0.8			
Control Delay (s/veh)	0.0	0.0	10.8			
Lane LOS	A		B			
Approach Delay (s/veh)	0.0	0.0	10.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		29.0%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	187	1	0	143	6	3	0	7	10	0	5
Future Volume (vph)	2	187	1	0	143	6	3	0	7	10	0	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.999			0.994			0.902			0.958	
Flt Protected								0.987			0.967	
Satd. Flow (prot)	0	1452	0	0	1445	0	0	1294	0	0	1347	0
Flt Permitted								0.987			0.967	
Satd. Flow (perm)	0	1452	0	0	1445	0	0	1294	0	0	1347	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	203	1	0	155	7	3	0	8	11	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	162	0	0	11	0	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 24.7%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
14: Street E & Killaly St. E

2041 FT PM
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	187	1	0	143	6	3	0	7	10	0	5
Future Volume (Veh/h)	2	187	1	0	143	6	3	0	7	10	0	5
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	203	1	0	155	7	3	0	8	11	0	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	162			204			371	370	204	374	367	159
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			204			371	370	204	374	367	159
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	98	100	99
cM capacity (veh/h)	1417			1368			582	559	837	577	561	887
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	206	162	11	16								
Volume Left	2	0	3	11								
Volume Right	1	7	8	5								
cSH	1417	1368	748	648								
Volume to Capacity	0.00*	0.00	0.01	0.02								
Queue Length 95th (m)	0.0	0.0	0.4	0.6								
Control Delay (s/veh)	0.1	0.0	9.9	10.7								
Lane LOS	A		A	B								
Approach Delay (s/veh)	0.1	0.0	9.9	10.7								
Approach LOS			A	B								
Intersection Summary												
Average Delay				0.8								
Intersection Capacity Utilization				24.7%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	13	8	103	162	6
Future Volume (vph)	7	13	8	103	162	6
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914				0.995	
Flt Protected	0.982			0.996		
Satd. Flow (prot)	1305	0	0	1199	1354	0
Flt Permitted	0.982			0.996		
Satd. Flow (perm)	1305	0	0	1199	1354	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	176.2			135.3	371.1	
Travel Time (s)	15.9			8.1	22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	14	9	112	176	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	121	183	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.6%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	13	8	103	162	6
Future Volume (Veh/h)	7	13	8	103	162	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	14	9	112	176	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	310	180	183			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	310	180	183			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	99			
cM capacity (veh/h)	678	863	1392			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	121	183			
Volume Left	8	9	0			
Volume Right	14	0	7			
cSH	785	1392	1700			
Volume to Capacity	0.03	0.00*	0.11			
Queue Length 95th (m)	0.7	0.2	0.0			
Control Delay (s/veh)	9.7	0.6	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.7	0.6	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			28.6%	ICU Level of Service		A
Analysis Period (min)			15			

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	30	18	93	139	14
Future Volume (vph)	12	30	18	93	139	14
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.903				0.988	
Flt Protected	0.986			0.992		
Satd. Flow (prot)	1295	0	0	1253	1344	0
Flt Permitted	0.986			0.992		
Satd. Flow (perm)	1295	0	0	1253	1344	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	186.1			371.1	118.9	
Travel Time (s)	16.7			22.3	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	33	20	101	151	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	121	166	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.2%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	30	18	93	139	14
Future Volume (Veh/h)	12	30	18	93	139	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	33	20	101	151	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	300	159	166			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300	159	166			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	96	99			
cM capacity (veh/h)	682	887	1412			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	46	121	166			
Volume Left	13	20	0			
Volume Right	33	0	15			
cSH	817	1412	1700			
Volume to Capacity	0.06	0.01	0.10			
Queue Length 95th (m)	1.4	0.3	0.0			
Control Delay (s/veh)	9.7	1.3	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.7	1.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay				1.8		
Intersection Capacity Utilization				33.2%	ICU Level of Service	A
Analysis Period (min)				15		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	668	81	8	600	113	0	0	10	0	0	213
Future Volume (vph)	387	668	81	8	600	113	0	0	10	0	0	213
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.979				0.865			0.865
Flt Protected	0.950				0.999							
Satd. Flow (prot)	1381	1431	0	0	1422	0	0	0	1258	0	0	1258
Flt Permitted	0.950				0.999							
Satd. Flow (perm)	1381	1431	0	0	1422	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	726	88	9	652	123	0	0	11	0	0	232
Shared Lane Traffic (%)												
Lane Group Flow (vph)	421	814	0	0	784	0	0	0	11	0	0	232
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 107.8% ICU Level of Service G

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
 17: Street C/Commercial Access & Main St. E. (Highway 3)

2041 FT PM
 03/04/2026

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	387	668	81	8	600	113	0	0	10	0	0	213	
Future Volume (Veh/h)	387	668	81	8	600	113	0	0	10	0	0	213	
Sign Control	Free				Free				Stop		Stop		
Grade	0%				0%				0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	421	726	88	9	652	123	0	0	11	0	0	232	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None				None								
Median storage veh													
Upstream signal (m)	307												
pX, platoon unblocked	0.71						0.71	0.71			0.71	0.71	0.71
vC, conflicting volume	775			814			2576	2405	770	2311	2388	714	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	473			814			3023	2782	770	2648	2757	386	
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	45			99			100	100	97	100	100	50	
cM capacity (veh/h)	769			813			2	6	401	6	6	467	
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1								
Volume Total	421	814	784	11	232								
Volume Left	421	0	9	0	0								
Volume Right	0	88	123	11	232								
cSH	769	1700	813	401	467								
Volume to Capacity	0.55	0.48	0.01	0.03	0.50								
Queue Length 95th (m)	27.0	0.0	0.3	0.7	21.7								
Control Delay (s/veh)	15.2	0.0	0.3	14.2	20.1								
Lane LOS	C			A	B	C							
Approach Delay (s/veh)	5.2			0.3	14.2	20.1							
Approach LOS				B	C								
Intersection Summary													
Average Delay				5.1									
Intersection Capacity Utilization				107.8%	ICU Level of Service				G				
Analysis Period (min)				15									

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	711	172	100	629	316	237	261	80	466	241	179
Future Volume (vph)	225	711	172	100	629	316	237	261	80	466	241	179
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (m)	115.0		110.0	100.0		30.0	100.0		30.0	115.0		25.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	100.0		75.0	100.0		100.0	100.0		10.0	100.0		100.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor						1.00						
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1498	1535	1403	1630	1471	1390	1646	1651	1473	3014	1716	1240
Flt Permitted	0.143			0.156			0.548			0.950		
Satd. Flow (perm)	225	1535	1403	268	1471	1389	950	1651	1473	3014	1716	1240
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			136			95			136
Link Speed (k/h)		70			70			50			60	
Link Distance (m)		407.5			529.0			290.6			158.6	
Travel Time (s)		21.0			27.2			20.9			9.5	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	14%	6%	2%	19%	7%	1%	6%	1%	7%	2%	20%
Adj. Flow (vph)	245	773	187	109	684	343	258	284	87	507	262	195
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	773	187	109	684	343	258	284	87	507	262	195
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (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
Detector 1 Position(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
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		2			Free
Detector Phase	7	4	4	3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	8.0	27.9	27.9	8.0	27.9		8.0	27.4	27.4	8.0	27.4	
Total Split (s)	21.0	109.0	109.0	10.0	98.0		21.0	40.0	40.0	36.0	55.0	
Total Split (%)	10.8%	55.9%	55.9%	5.1%	50.3%		10.8%	20.5%	20.5%	18.5%	28.2%	
Maximum Green (s)	18.0	101.1	101.1	7.0	90.1		18.0	32.6	32.6	33.0	47.6	
Yellow Time (s)	3.0	5.9	5.9	3.0	5.9		3.0	5.4	5.4	3.0	5.4	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	-2.0		0.0	-2.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	5.9	7.9	3.0	5.9		3.0	5.4	7.4	3.0	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.5	4.5	3.0	4.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	
Walk Time (s)		5.0	5.0		5.0			5.0	5.0		5.0	
Flash Don't Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	116.0	103.1	101.1	102.0	92.1	195.0	55.0	34.6	32.6	33.0	47.6	195.0
Actuated g/C Ratio	0.59	0.53	0.52	0.52	0.47	1.00	0.28	0.18	0.17	0.17	0.24	1.00
v/c Ratio	0.98	0.95	0.24	0.58	0.99	0.25	0.78	0.97	0.27	0.99	0.63	0.16
Control Delay (s/veh)	78.0	65.5	7.9	31.9	80.4	0.4	67.8	123.2	11.0	117.1	73.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	78.0	65.5	7.9	31.9	80.4	0.4	67.8	123.2	11.0	117.1	73.4	0.3
LOS	E	E	A	C	F	A	E	F	B	F	E	A
Approach Delay (s/veh)		59.1			51.6			84.9			81.6	
Approach LOS		E			D			F			F	

Intersection Summary

Area Type: Other

Cycle Length: 195

Actuated Cycle Length: 195

Natural Cycle: 130

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.99

Intersection Signal Delay (s/veh): 66.6

Intersection LOS: E

Intersection Capacity Utilization 95.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

			
Ø1	Ø2	Ø3	Ø4
36 s	40 s	10 s	109 s
			
Ø5	Ø6	Ø7	Ø8
21 s	55 s	21 s	98 s

Queues

2041 FT SAT

1: Elizabeth Street/Highway 140 & Main St. E. (Highway 3)

03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	245	773	187	109	684	343	258	284	87	507	262	195
v/c Ratio	0.98	0.95	0.24	0.58	0.99	0.25	0.78	0.97	0.27	0.99	0.63	0.16
Control Delay (s/veh)	78.0	65.5	7.9	31.9	80.4	0.4	67.8	123.2	11.0	117.1	73.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	78.0	65.5	7.9	31.9	80.4	0.4	67.8	123.2	11.0	117.1	73.4	0.3
Queue Length 50th (m)	56.9	327.1	10.6	19.2	312.6	0.0	79.4	122.8	0.0	114.3	98.5	0.0
Queue Length 95th (m)	#125.8	#436.3	27.4	30.2	#419.0	0.0	#110.7	#191.7	15.5	#158.0	134.1	0.0
Internal Link Dist (m)	383.5		505.0				266.6				134.6	
Turn Bay Length (m)	115.0	110.0		100.0	30.0		100.0	30.0		115.0	25.0	
Base Capacity (vph)	251	811	793	189	694	1389	332	292	325	510	418	1240
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.95	0.24	0.58	0.99	0.25	0.78	0.97	0.27	0.99	0.63	0.16

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Snider Road & Main St. E. (Highway 3)

2041 FT SAT
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	341	336	87	10	379	115	143	159	26	288	372	291
Future Volume (vph)	341	336	87	10	379	115	143	159	26	288	372	291
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	120.0		60.0	20.0		30.0	60.0		50.0	110.0		80.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	50.0		55.0	50.0		20.0	30.0		7.5	30.0		30.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1381	1226	1236	1381	1177	1236	1381	1423	0	1381	1454	1236
Flt Permitted	0.273			0.544			0.374			0.329		
Satd. Flow (perm)	397	1226	1236	791	1177	1236	544	1423	0	478	1454	1236
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95			91		6				316
Link Speed (k/h)		70			80			40			40	
Link Distance (m)		306.6			852.0			363.5			140.5	
Travel Time (s)		15.8			38.3			32.7			12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	2%	2%	26%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	371	365	95	11	412	125	155	173	28	313	404	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	371	365	95	11	412	125	155	201	0	313	404	316
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Minimum Split (s)	11.0	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	23.6	70.6	70.6	47.0	47.0	47.0	10.0	24.9		24.5	39.4	39.4
Total Split (%)	19.7%	58.8%	58.8%	39.2%	39.2%	39.2%	8.3%	20.8%		20.4%	32.8%	32.8%
Maximum Green (s)	20.6	66.6	66.6	43.0	43.0	43.0	7.0	20.9		21.5	35.4	35.4
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Don't Walk (s)		5.0	5.0	5.0	5.0	5.0		5.0			5.0	5.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	67.6	66.6	66.6	43.0	43.0	43.0	28.9	20.9		46.4	35.4	35.4
Actuated g/C Ratio	0.56	0.56	0.56	0.36	0.36	0.36	0.24	0.17		0.39	0.30	0.30

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.95	0.54	0.13	0.04	0.98	0.25	0.87	0.80		0.90	0.94	0.54
Control Delay (s/veh)	52.8	20.6	2.9	25.8	77.7	10.4	73.6	69.5		60.8	73.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	52.8	20.6	2.9	25.8	77.7	10.4	73.6	69.5		60.8	73.6	7.3
LOS	D	C	A	C	E	B	E	E		E	E	A
Approach Delay (s/veh)		32.9			61.3			71.3			49.4	
Approach LOS		C			E			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.98

Intersection Signal Delay (s/veh): 49.6

Intersection LOS: D

Intersection Capacity Utilization 98.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Snider Road & Main St. E. (Highway 3)

#2  Ø1	#2  Ø2 (R)	#2  Ø4	
24.5 s	24.9 s	70.6 s	
#2  Ø5	#2  Ø6 (R)	#2  Ø7	#2  Ø8
10 s	39.4 s	23.6 s	47 s

Queues

2041 FT SAT

2: Snider Road & Main St. E. (Highway 3)

03/04/2026

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	371	365	95	11	412	125	155	201	313	404	316
v/c Ratio	0.95	0.54	0.13	0.04	0.98	0.25	0.87	0.80	0.90	0.94	0.54
Control Delay (s/veh)	52.8	20.6	2.9	25.8	77.7	10.4	73.6	69.5	60.8	73.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.8	20.6	2.9	25.8	77.7	10.4	73.6	69.5	60.8	73.6	7.3
Queue Length 50th (m)	53.1	63.0	0.0	1.8	118.6	5.6	26.6	47.6	61.7	99.1	0.0
Queue Length 95th (m)	#113.0	96.6	7.9	6.2	#198.8	20.0	#62.4	#87.8	#104.8	#163.5	23.8
Internal Link Dist (m)	282.6			828.0			339.5			116.5	
Turn Bay Length (m)	120.0		60.0	20.0		30.0	60.0		110.0		80.0
Base Capacity (vph)	392	680	728	283	421	501	179	252	346	428	587
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.54	0.13	0.04	0.98	0.25	0.87	0.80	0.90	0.94	0.54

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FT SAT
03/04/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	444	111	9	414	2	61	7	25	0	3	17
Future Volume (vph)	20	444	111	9	414	2	61	7	25	0	3	17
Ideal Flow (vphpl)	1228	1228	1351	1228	1228	1351	1483	1483	1483	1483	1483	1483
Storage Length (m)	0.0		1.0	0.0		1.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.5		52.0	7.5		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.964			0.884	
Flt Protected		0.998			0.999			0.968				
Satd. Flow (prot)	0	1028	1137	0	993	1126	0	1365	0	0	1296	0
Flt Permitted		0.998			0.999			0.968				
Satd. Flow (perm)	0	1028	1137	0	993	1126	0	1365	0	0	1296	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		852.0			356.6			266.7			219.0	
Travel Time (s)		38.3			16.0			16.0			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	20%	1%	1%	24%	2%	1%	2%	2%	2%	2%	1%
Adj. Flow (vph)	22	483	121	10	450	2	66	8	27	0	3	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	505	121	0	460	2	0	101	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.71	1.71	1.53	1.71	1.71	1.53	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	81.4%											
Analysis Period (min)	15											
ICU Level of Service D												

HCM Unsignalized Intersection Capacity Analysis
3: Lorraine Road/Babion Road & Main St. E. (Highway 3)

2041 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	444	111	9	414	2	61	7	25	0	3	17
Future Volume (Veh/h)	20	444	111	9	414	2	61	7	25	0	3	17
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	483	121	10	450	2	66	8	27	0	3	18
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	452			604			1017	999	483	1028	1118	450
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	452			604			1017	999	483	1028	1118	450
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			68	97	95	100	99	97
cM capacity (veh/h)	1109			979			204	236	584	193	201	611
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	505	121	460	2	101	21						
Volume Left	22	0	10	0	66	0						
Volume Right	0	121	0	2	27	18						
cSH	1109	1700	979	1700	250	473						
Volume to Capacity	0.02	0.07	0.01	0.00*	0.40	0.04						
Queue Length 95th (m)	0.5	0.0	0.2	0.0	14.8	1.1						
Control Delay (s/veh)	0.6	0.0	0.3	0.0	28.9	13.0						
Lane LOS	A		A		D	B						
Approach Delay (s/veh)	0.5		0.3		28.9	13.0						
Approach LOS					D	B						
Intersection Summary												
Average Delay				3.0								
Intersection Capacity Utilization				81.4%	ICU Level of Service			D				
Analysis Period (min)				15								

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	174	8	6	105	71	3	2	9	145	7	5
Future Volume (vph)	8	174	8	6	105	71	3	2	9	145	7	5
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.994			0.947			0.910			0.996	
Fl _t Protected		0.998			0.998			0.990			0.956	
Satd. Flow (prot)	0	1405	0	0	1322	0	0	1312	0	0	1385	0
Fl _t Permitted		0.998			0.998			0.990			0.956	
Satd. Flow (perm)	0	1405	0	0	1322	0	0	1312	0	0	1385	0
Link Speed (k/h)		60			60			50			60	
Link Distance (m)		177.1			560.6			68.7			135.3	
Travel Time (s)		10.6			33.6			4.9			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	2%	9%	2%	2%	1%	2%	2%	1%	2%
Adj. Flow (vph)	9	189	9	7	114	77	3	2	10	158	8	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	198	0	0	15	0	0	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			-20.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 41.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
4: Killaly St. E & Lorraine Road

2041 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	174	8	6	105	71	3	2	9	145	7	5
Future Volume (Veh/h)	8	174	8	6	105	71	3	2	9	145	7	5
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	189	9	7	114	77	3	2	10	158	8	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	191			198			387	417	194	389	383	153
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191			198			387	417	194	389	383	153
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	100	99	72	99	99
cM capacity (veh/h)	1383			1375			557	522	848	557	546	894
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	207	198	15	171								
Volume Left	9	7	3	158								
Volume Right	9	77	10	5								
cSH	1383	1375	714	562								
Volume to Capacity	0.00*	0.00*	0.02	0.30								
Queue Length 95th (m)	0.2	0.1	0.5	10.2								
Control Delay (s/veh)	0.4	0.3	10.1	14.2								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.4	0.3	10.1	14.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay				4.6								
Intersection Capacity Utilization				41.1%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Future Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.979			0.984			0.903	
Flt Protected		0.976			0.998			0.997			0.991	
Satd. Flow (prot)	0	1358	0	0	1284	0	0	1439	0	0	1310	0
Flt Permitted		0.976			0.998			0.997			0.991	
Satd. Flow (perm)	0	1358	0	0	1284	0	0	1439	0	0	1310	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		201.0			260.8			155.4			170.4	
Travel Time (s)		14.5			18.8			11.2			15.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	9%	2%	2%	15%	4%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	152	147	4	7	158	30	2	27	4	52	25	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	0	0	195	0	0	33	0	0	273	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 67.6%	ICU Level of Service C											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
6: Elizabeth Street & Killaly St. E

2041 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Future Volume (vph)	140	135	4	6	145	28	2	25	4	48	23	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	147	4	7	158	30	2	27	4	52	25	196
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	303	195	33	273								
Volume Left (vph)	152	7	2	52								
Volume Right (vph)	4	30	4	196								
Hadj (s)	0.20	0.13	-0.04	-0.37								
Departure Headway (s)	5.2	5.3	5.6	4.9								
Degree Utilization, x	0.44	0.29	0.05	0.37								
Capacity (veh/h)	656	634	544	679								
Control Delay (s/veh)	12.2	10.4	9.0	10.8								
Approach Delay (s/veh)	12.2	10.4	9.0	10.8								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			11.1									
Level of Service			B									
Intersection Capacity Utilization			67.6%	ICU Level of Service					C			
Analysis Period (min)			15									

Intersection

Intersection Delay, s/veh 10.9
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	140	135	4	6	145	28	2	25	4	48	23	180
Future Vol, veh/h	140	135	4	6	145	28	2	25	4	48	23	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	9	2	2	15	4	1	1	2	2	2	1
Mvmt Flow	152	147	4	7	158	30	2	27	4	52	25	196
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	11.9	10	8.9	10.7
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	50%	3%	19%
Vol Thru, %	81%	48%	81%	9%
Vol Right, %	13%	1%	16%	72%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	279	179	251
LT Vol	2	140	6	48
Through Vol	25	135	145	23
RT Vol	4	4	28	180
Lane Flow Rate	34	303	195	273
Geometry Grp	1	1	1	1
Degree of Util (X)	0.052	0.425	0.27	0.364
Departure Headway (Hd)	5.588	5.05	4.987	4.802
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	645	704	710	742
Service Time	3.588	3.142	3.087	2.885
HCM Lane V/C Ratio	0.053	0.43	0.275	0.368
HCM Control Delay, s/veh	8.9	11.9	10	10.7
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.2	2.1	1.1	1.7

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	179	399	31	149	286
Future Volume (vph)	49	179	399	31	149	286
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Storage Length (m)	30.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	10.0	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.990			
Flt Protected	0.950					0.983
Satd. Flow (prot)	1381	1126	1347	0	0	1183
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1381	1126	1347	0	0	1183
Link Speed (k/h)	40		50			50
Link Distance (m)	402.0		334.0			290.6
Travel Time (s)	36.2		24.0			20.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	195	434	34	162	311
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	195	468	0	0	473
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	80.8%			ICU Level of Service D		
Analysis Period (min)	15					

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	179	399	31	149	286
Future Volume (Veh/h)	49	179	399	31	149	286
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	195	434	34	162	311
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						290
pX, platoon unblocked	0.89					
vC, conflicting volume	1086	451			468	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1034	451			468	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	73	68			85	
cM capacity (veh/h)	195	608			1094	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	53	195	468	473		
Volume Left	53	0	0	162		
Volume Right	0	195	34	0		
cSH	195	608	1700	1094		
Volume to Capacity	0.27	0.32	0.28	0.15		
Queue Length 95th (m)	8.5	11.0	0.0	4.2		
Control Delay (s/veh)	30.3	13.7	0.0	4.1		
Lane LOS	D	B		A		
Approach Delay (s/veh)	17.2		0.0	4.1		
Approach LOS	C					
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			80.8%		ICU Level of Service	D
Analysis Period (min)			15			

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	77	353	4	64	271
Future Volume (vph)	8	77	353	4	64	271
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1288
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878		0.999			
Flt Protected	0.995					0.991
Satd. Flow (prot)	1270	0	1359	0	0	1251
Flt Permitted	0.995					0.991
Satd. Flow (perm)	1270	0	1359	0	0	1251
Link Speed (k/h)	40		40			40
Link Distance (m)	414.9		253.0			334.0
Travel Time (s)	37.3		22.8			30.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	84	384	4	70	295
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	388	0	0	365
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.62
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 68.7%	ICU Level of Service C					
Analysis Period (min) 15						

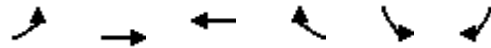
HCM Unsignalized Intersection Capacity Analysis
8: Elizabeth Street & Street B

2041 FT SAT
03/04/2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	77	353	4	64	271
Future Volume (Veh/h)	8	77	353	4	64	271
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	84	384	4	70	295
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	821	386			388	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	821	386			388	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	87			94	
cM capacity (veh/h)	324	662			1170	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	93	388	365			
Volume Left	9	0	70			
Volume Right	84	4	0			
cSH	601	1700	1170			
Volume to Capacity	0.15	0.23	0.06			
Queue Length 95th (m)	4.4	0.0	1.5			
Control Delay (s/veh)	12.1	0.0	2.1			
Lane LOS	B		A			
Approach Delay (s/veh)	12.1	0.0	2.1			
Approach LOS	B					
Intersection Summary						
Average Delay		2.2				
Intersection Capacity Utilization		68.7%		ICU Level of Service		C
Analysis Period (min)		15				

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	356	0	0	278
Future Volume (vph)	0	0	356	0	0	278
Ideal Flow (vphpl)	1483	1351	1388	1351	1504	1228
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1454	0	1361	0	0	1204
Flt Permitted						
Satd. Flow (perm)	1454	0	1361	0	0	1204
Link Speed (k/h)	30		40			40
Link Distance (m)	163.0		170.4			253.0
Travel Time (s)	19.6		15.3			22.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	387	0	0	302
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	387	0	0	302
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.48	1.53	1.34	1.71
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.0%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	356	0	0	278
Future Volume (Veh/h)	0	0	356	0	0	278
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	387	0	0	302
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	689	387			387	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	689	387			387	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	412	661			1171	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	387	302			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1171			
Volume to Capacity	0.00	0.23	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			29.0%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	143	139	3	6	18
Future Volume (vph)	27	143	139	3	6	18
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.997		0.900	
Flt Protected		0.992			0.987	
Satd. Flow (prot)	0	1194	1357	0	1292	0
Flt Permitted		0.992			0.987	
Satd. Flow (perm)	0	1194	1357	0	1292	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		260.8	170.0		154.3	
Travel Time (s)		18.8	12.2		13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	155	151	3	7	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	184	154	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.37
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

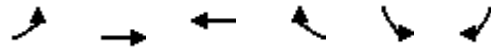
Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.6% ICU Level of Service A

Analysis Period (min) 15

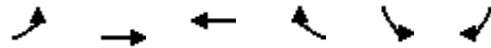
						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	143	139	3	6	18
Future Volume (Veh/h)	27	143	139	3	6	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	155	151	3	7	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	154				366	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154				366	153
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	98
cM capacity (veh/h)	1426				621	894
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	184	154	27			
Volume Left	29	0	7			
Volume Right	0	3	20			
cSH	1426	1700	802			
Volume to Capacity	0.02	0.09	0.03			
Queue Length 95th (m)	0.5	0.0	0.8			
Control Delay (s/veh)	1.3	0.0	9.6			
Lane LOS	A		A			
Approach Delay (s/veh)	1.3	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			37.6%	ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	143	130	5	17	12
Future Volume (vph)	6	143	130	5	17	12
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.995		0.943	
Fl _t Protected		0.998			0.972	
Satd. Flow (prot)	0	1202	1354	0	1333	0
Fl _t Permitted		0.998			0.972	
Satd. Flow (perm)	0	1202	1354	0	1333	0
Link Speed (k/h)		50	50		40	
Link Distance (m)		170.0	581.0		415.2	
Travel Time (s)		12.2	41.8		37.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	155	141	5	18	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	162	146	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 29.2%				ICU Level of Service A		
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis
11: Killaly St. E & Street D

2041 FT SAT
03/04/2026

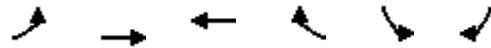


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	4		4	
Traffic Volume (veh/h)	6	143	130	5	17	12
Future Volume (Veh/h)	6	143	130	5	17	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	155	141	5	18	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	146				313	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	146				313	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1436				677	904
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	162	146	31			
Volume Left	7	0	18			
Volume Right	0	5	13			
cSH	1436	1700	757			
Volume to Capacity	0.00*	0.09	0.04			
Queue Length 95th (m)	0.1	0.0	1.0			
Control Delay (s/veh)	0.4	0.0	10.0			
Lane LOS	A		A			
Approach Delay (s/veh)	0.4	0.0	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay		1.1				
Intersection Capacity Utilization		29.2%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	161	110	5	17	14
Future Volume (vph)	7	161	110	5	17	14
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.939	
Flt Protected		0.998			0.973	
Satd. Flow (prot)	0	1202	1354	0	1328	0
Flt Permitted		0.998			0.973	
Satd. Flow (perm)	0	1202	1354	0	1328	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		222.9	251.1		514.5	
Travel Time (s)		13.4	15.1		46.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	175	120	5	18	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	183	125	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.4%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	161	110	5	17	14
Future Volume (Veh/h)	7	161	110	5	17	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	175	120	5	18	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	125				314	123
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	125				314	123
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	98
cM capacity (veh/h)	1462				676	929
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	183	125	33			
Volume Left	8	0	18			
Volume Right	0	5	15			
cSH	1462	1700	771			
Volume to Capacity	0.00*	0.07	0.04			
Queue Length 95th (m)	0.1	0.0	1.1			
Control Delay (s/veh)	0.4	0.0	9.9			
Lane LOS	A		A			
Approach Delay (s/veh)	0.4	0.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			30.4%	ICU Level of Service		A
Analysis Period (min)			15			
* Value less than 0.01.						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	175	108	5	14	7
Future Volume (vph)	4	175	108	5	14	7
Ideal Flow (vphpl)	1504	1228	1388	1351	1483	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t			0.994		0.953	
Flt Protected		0.999			0.968	
Satd. Flow (prot)	0	1203	1353	0	1341	0
Flt Permitted		0.999			0.968	
Satd. Flow (perm)	0	1203	1353	0	1341	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		251.1	177.1		138.7	
Travel Time (s)		15.1	10.6		12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	190	117	5	15	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	194	122	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.34	1.71	1.48	1.53	1.37	1.53
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 29.2%				ICU Level of Service A		
Analysis Period (min) 15						

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	175	108	5	14	7
Future Volume (Veh/h)	4	175	108	5	14	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	190	117	5	15	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	122				318	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122				318	120
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	1465				674	932
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	194	122	23			
Volume Left	4	0	15			
Volume Right	0	5	8			
cSH	1465	1700	746			
Volume to Capacity	0.00*	0.07	0.03			
Queue Length 95th (m)	0.1	0.0	0.8			
Control Delay (s/veh)	0.2	0.0	10.0			
Lane LOS	A		A			
Approach Delay (s/veh)	0.2	0.0	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			29.2%	ICU Level of Service		A
Analysis Period (min)			15			
* Value less than 0.01.						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	154	3	0	121	3	5	0	6	9	0	10
Future Volume (vph)	5	154	3	0	121	3	5	0	6	9	0	10
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.998			0.997			0.921			0.929	
Fl _t Protected		0.999						0.980			0.977	
Satd. Flow (prot)	0	1450	0	0	1450	0	0	1312	0	0	1320	0
Fl _t Permitted		0.999						0.980			0.977	
Satd. Flow (perm)	0	1450	0	0	1450	0	0	1312	0	0	1320	0
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		581.0			222.9			220.1			518.5	
Travel Time (s)		41.8			16.0			15.8			46.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	167	3	0	132	3	5	0	7	10	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	0	0	135	0	0	12	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 25.8%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
14: Street E & Killaly St. E

2041 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	154	3	0	121	3	5	0	6	9	0	10
Future Volume (Veh/h)	5	154	3	0	121	3	5	0	6	9	0	10
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	167	3	0	132	3	5	0	7	10	0	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	135			170			323	314	169	319	314	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	135			170			323	314	169	319	314	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	98	100	99
cM capacity (veh/h)	1449			1407			621	600	876	627	600	916
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	175	135	12	21								
Volume Left	5	0	5	10								
Volume Right	3	3	7	11								
cSH	1449	1407	748	751								
Volume to Capacity	0.00*	0.00	0.02	0.03								
Queue Length 95th (m)	0.1	0.0	0.4	0.7								
Control Delay (s/veh)	0.2	0.0	9.9	9.9								
Lane LOS	A		A	A								
Approach Delay (s/veh)	0.2	0.0	9.9	9.9								
Approach LOS			A	A								
Intersection Summary												
Average Delay				1.1								
Intersection Capacity Utilization				25.8%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	12	4	79	140	2
Future Volume (vph)	8	12	4	79	140	2
Ideal Flow (vphpl)	1483	1351	1504	1228	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.920				0.998	
Flt Protected	0.980			0.998		
Satd. Flow (prot)	1311	0	0	1202	1358	0
Flt Permitted	0.980			0.998		
Satd. Flow (perm)	1311	0	0	1202	1358	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	176.2			135.3	371.1	
Travel Time (s)	15.9			8.1	22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	13	4	86	152	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	90	154	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.71	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.5%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	12	4	79	140	2
Future Volume (Veh/h)	8	12	4	79	140	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	13	4	86	152	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	247	153	154			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	247	153	154			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	739	893	1426			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	90	154			
Volume Left	9	4	0			
Volume Right	13	0	2			
cSH	823	1426	1700			
Volume to Capacity	0.03	0.00*	0.09			
Queue Length 95th (m)	0.7	0.1	0.0			
Control Delay (s/veh)	9.5	0.4	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.5	0.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization		21.5%		ICU Level of Service		A
Analysis Period (min)		15				

* Value less than 0.01.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	26	8	71	116	6
Future Volume (vph)	14	26	8	71	116	6
Ideal Flow (vphpl)	1483	1351	1504	1288	1388	1351
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912				0.993	
Flt Protected	0.983			0.995		
Satd. Flow (prot)	1303	0	0	1256	1351	0
Flt Permitted	0.983			0.995		
Satd. Flow (perm)	1303	0	0	1256	1351	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	186.1			371.1	118.9	
Travel Time (s)	16.7			22.3	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	28	9	77	126	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	0	86	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.37	1.53	1.34	1.62	1.48	1.53
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.4%			ICU Level of Service A		
Analysis Period (min)	15					

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	26	8	71	116	6
Future Volume (Veh/h)	14	26	8	71	116	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	28	9	77	126	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	225	130	133			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225	130	133			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	97	99			
cM capacity (veh/h)	759	920	1452			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	43	86	133			
Volume Left	15	9	0			
Volume Right	28	0	7			
cSH	857	1452	1700			
Volume to Capacity	0.05	0.00*	0.08			
Queue Length 95th (m)	1.3	0.1	0.0			
Control Delay (s/veh)	9.4	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.4	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay				1.8		
Intersection Capacity Utilization				25.4%	ICU Level of Service	A
Analysis Period (min)				15		
* Value less than 0.01.						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	680	58	5	688	120	0	0	11	0	0	317
Future Volume (vph)	579	680	58	5	688	120	0	0	11	0	0	317
Ideal Flow (vphpl)	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
Storage Length (m)	105.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		1
Taper Length (m)	50.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.980				0.865			0.865
Flt Protected	0.950											
Satd. Flow (prot)	1381	1436	0	0	1425	0	0	0	1258	0	0	1258
Flt Permitted	0.950											
Satd. Flow (perm)	1381	1436	0	0	1425	0	0	0	1258	0	0	1258
Link Speed (k/h)		70			70			40			40	
Link Distance (m)		529.0			306.6			279.4			186.5	
Travel Time (s)		27.2			15.8			25.1			16.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	629	739	63	5	748	130	0	0	12	0	0	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	629	802	0	0	883	0	0	0	12	0	0	345
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 113.1% ICU Level of Service H

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
17: Street C/Commercial Access & Main St. E. (Highway 3)

2041 FT SAT
03/04/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	579	680	58	5	688	120	0	0	11	0	0	317
Future Volume (Veh/h)	579	680	58	5	688	120	0	0	11	0	0	317
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	629	739	63	5	748	130	0	0	12	0	0	345
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)	307											
pX, platoon unblocked	0.66						0.66	0.66		0.66	0.66	0.66
vC, conflicting volume	878			802			3197	2917	771	2832	2883	813
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	558			802			4070	3646	771	3518	3595	459
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	6			99			100	100	97	100	100	13
cM capacity (veh/h)	669			822			0	0	400	0	0	397
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	629	802	883	12	345							
Volume Left	629	0	5	0	0							
Volume Right	0	63	130	12	345							
cSH	669	1700	822	400	397							
Volume to Capacity	0.94	0.47	0.00*	0.03	0.87							
Queue Length 95th (m)	104.6	0.0	0.1	0.7	68.5							
Control Delay (s/veh)	46.6	0.0	0.2	14.3	50.9							
Lane LOS	E		A	B	F							
Approach Delay (s/veh)	20.5		0.2	14.3	50.9							
Approach LOS				B	F							
Intersection Summary												
Average Delay	17.7											
Intersection Capacity Utilization	113.1%			ICU Level of Service					H			
Analysis Period (min)	15											

* Value less than 0.01.