

TRAFFIC IMPACT STUDY

LONG SAULT INDUSTRIAL PARK - PHASE A

TOWNSHIP OF SOUTH STORMONT
UNITED COUNTIES OF STORMONT, DUNDAS AND
GLENGARY

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1.0 Executive Summary

Background

C.F. Crozier & Associates Inc. (Crozier) was retained by Avenue 31 Capital Inc. to undertake a Traffic Impact Study (TIS) to support the Site Plan Application for the proposed Phase A industrial development located in the Township of South Stormont, United Counties of Stormont, Dundas, and Glengarry (SDG). The TIS assesses the impacts of the proposed Phase A (rail yard) development on the boundary road network and recommends required mitigation measures if warranted.

The subject Phase A forms part of a proposed larger industrial Subdivision located between Avonmore Road and Moulinette Road along the Canadian National (CN) rail track in Long Sault, Township of South Stormont, SDG. The site is bound by Highway 401 to the north, vegetated lands and Avonmore Road to the east, the CN rail corridor to the south, and Moulinette Road to the west.

Per the site plan (dated July 14, 2021, attached in **Appendix A**), the development proposal includes a rail track yard, a single storey rail shop building (approximately 1200 m² Gross Floor Area) and a gravel parking lot. A full moves site access at County Road 15 (Avonmore Road) is proposed to serve Phase A.

This TIS was conducted in accordance with the Ministry of Transportation (MTO) requirements outlined in the "General Guidelines for the Preparation of Traffic Impact Studies (February 2021)". The study scope was further confirmed by the MTO and the United Counties of SDG through a terms of reference correspondence

The study scope includes the study intersections of County Road 35 (Moulinette Road) and County Road 29, the Highway 401 westbound (WB) ramp terminal at County Road 35, the Highway 401 eastbound (EB) ramp terminal at County Road 35, County Road 15 (Avonmore Road) and County Road 29 / Prieur Road, County Road 2 and County Road 15, as well as the proposed site access on County Road 15.

Existing Traffic Operations

Under existing conditions, the stop controlled minor connection of Avonmore Road at County Road 2 is operating at a LOS "D" or better in the p.m. peak hour. It was determined that signals are warranted under the existing 2021 counts, without considering the COVID-19 volume adjustment. Given traffic volumes are only expected to increase into the future horizon years, it is recommended that the County implement traffic signals at the intersection of County Road 2 and Avonmore Road in the future in order for the intersection to operate safely and efficiently. For subsequent future background and future total scenarios, traffic signals and two-way stop control were adopted for future analysis at the intersection of County Road 2 and County Road 15 to reflect this recommendation.

The remaining study intersections are operating efficiently at a LOS "B" or better during the a.m. and p.m. peak hours. The existing 2021 operations are based on volumes that were adjusted to account for Covid-19 impacts as discussed in section 4.4 of this report.

Future Background Traffic Operations

Under the ultimate 2035 future background operations, the study intersections are expected to operate efficiently at a LOS "C" or better during the a.m. and p.m. peak hours. The intersection of County Road 2 and Avonmore Road was analyzed under two scenarios: two-way stop control and signal control. Under the two-way stop control scenario, the intersection is forecast to operate at a LOS "F" in the 2035 horizon year and better in earlier study horizons. However, given operations are

quite adequate under stop-control through to the 2030 horizon, the timing for implementation of a traffic signal should be monitored by the Township and implemented as and when needed. With a traffic signal, the intersection is forecast to operate at a LOS "B" or better. These findings support the recommendation to provide signalization at the intersection of County Road 2 and Avonmore Road. It is noted that the eastbound through (a.m. peak) and westbound through (p.m. peak) are expected to operate near capacity in the respective peak hours at the intersection of County Road 2 and Avonmore Road (under signal control). The boundary road network is expected to operate similarly or better under the 2025 and 2030 future background scenarios.

Site Generated Traffic

The proposed development is forecast to generate a total of 32 and 29 two-way trips during the weekday a.m. and p.m. peak hours, respectively.

Future Total Traffic Operations

Under the ultimate horizon 2035 total traffic conditions (includes site generated trips), the study intersections are projected to operate similarly to future background conditions at a LOS "C" or better during the a.m. and p.m. peak hours. Compared to 2035 future background conditions, a maximum control delay increment of 0.4s and volume-to-capacity ratio increase of 0.02 at all study intersections is expected. Similar to the future background conditions, when the intersection of County Road 2 and County Road 15 is modelled as stop-control, the intersection is forecast to operate at a LOS "F" or better in the 2035 horizon year. Under signalization, the eastbound through and westbound through movements are forecast to operate near capacity in a.m. and p.m. peak hours, respectively, similar to future background conditions.

The site access is expected to operate efficiently at a LOS "C" or better during the a.m. and p.m. peak hours. No traffic operational issues are forecast.

Overall, the boundary road network is forecast to operate safely and efficiently under the ultimate 2035 future total scenario. The boundary road network is expected to operate similarly or better under the 2025 and 2030 future total scenarios. The proposed development is supportable from a traffic operations perspective.

Warrants Assessment

Traffic signal warrant analysis was conducted based on the average hourly volume approach at the study intersections. As aforementioned, under 2021 existing conditions, a traffic signal is warranted at the intersection of County Road 2 and County Road 15. For the remaining study intersections, traffic signals are not warranted under the Phase A development all through to the ultimate 2035 Future Total horizon.

A left-turn warrant analysis was conducted for the following movements at the noted study intersections under the ultimate horizon 2035 future total conditions:

- Moulinette Road and Highway 401 EB ramps (Northbound Left)
- Moulinette Road and Highway 401 WB ramps / County Road 29 (Northbound Left)
- Moulinette Road and Highway 401 WB ramps / County Road 29 (Southbound Left)
- Avonmore Road and County Road 29 / Prieur Road (Northbound Left)

Of the cases analyzed, only the northbound left-turn movement at the intersection of Moulinette Road and Highway 401 EB ramps is warranted under 2035 future total conditions. This finding suggests that a northbound-left turn storage lane length of 15m may be explored as a long term

measure to improve traffic operations at the Moulinette Road and Highway 401 EB ramps intersection. It is noted that no traffic from the proposed development is associated with this movement.

It is acknowledged that subject to the buildout of the remaining industrial subdivision, road improvement requirements (i.e., traffic signals and turn lanes etc.) will change and shall be confirmed by future Traffic Studies conducted to assess subsequent development Phases.

Site Access Safety Analysis

A safety review regarding the proposed site access connection to County Road 15 was conducted and yielded the following results:

- The available sight distance at the site access connection to County Road 15 exceeds the minimum sight distance requirements set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), June 2017.
- The Access Spacing and Corner Clearance requirements outlined in the TAC-GDGCR are satisfied

Therefore, no safety or operational issues are forecast at the intersection. The access will be designed to the industrial standards of the OPSD 350.010 as required by the Township of South Stormont "Site Plan & Subdivision Design Guidelines".

Parking Supply Review

The vehicle parking supply of 22 spaces satisfy the Township of South Stormont's Zoning By-law parking requirements. Sufficient open space for accommodating expected trucks and loading will be provided at the site. Furthermore, the required bicycle and loading spaces are included within the proposed development.

Conclusion

Based on this study findings, it is our conclusion that the proposed development will not materially impact the operations of the boundary road network. The Site Plan Application can be supported from a traffic operations perspective as the boundary road system is forecast to adequately accommodate the increase in traffic volumes attributable to the proposed development.

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2.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by Avenue 31 Capital Inc. to undertake a Traffic Impact Study (TIS) to support the Site Plan Application for the proposed Phase A industrial development located at Avonmore Road and CN Kinston Subdivision in the Township of South Stormont, United Counties of Stormont, Dundas, and Glengarry (SDG). Refer to **Figure 1** for the site location. The TIS assesses the impacts of the proposed Phase A rail yard development on the boundary road network and recommends required mitigation measures if warranted. Refer to **Appendix A** for the site plan.

This TIS was conducted in accordance with the Ministry of Transportation (MTO) requirements outlined in the "General Guidelines for the Preparation of Traffic Impact Studies (February 2021)". The study scope was further confirmed by the MTO and the United Counties of SDG through a terms of reference correspondence and discussions (excerpts included in **Appendix B**).

3.0 Development Proposal

Per the site plan (dated July 14, 2021, attached in **Appendix A**), the development proposal includes a rail track yard, a single storey rail shop building (approximately 1200 m² Gross Floor Area) and a gravel parking lot. A full moves site access at County Road 15 (Avonmore Road) is proposed to serve Phase A.

4.0 Existing Conditions

4.1 Development Lands

The subject Phase A forms part of a proposed larger industrial Subdivision located between Avonmore Road and Moulinette Road along the Canadian National (CN) rail track in Long Sault, Township of South Stormont, SDG. The site is bound by Highway 401 to the north, vegetated lands and Avonmore Road to the east, the CN rail corridor to the south, and Moulinette Road to the west.

The subject property covers an area of approximately 285 ha and is currently a vegetated undeveloped lot. The property is currently zoned as MH-h (Heavy Industrial, holding provision) under the Township of South Stormont Zoning By-law No. 2011-100. Refer to **Figure 1** for the site location and **Appendix C** for municipal excerpts.

4.2 Boundary Road Network

As confirmed through correspondence with MTO and SDG staff (in **Appendix B**), the study scope includes the existing intersections of County Road 35 (Moulinette Road) and County Road 29, the Highway 401 westbound (WB) ramp terminal at County Road 35, the Highway 401 eastbound (EB) ramp terminal at County Road 35, County Road 15 (Avonmore Road) and County Road 29 / Prieur Road, County Road 2 and County Road 15, as well as the proposed site access on County Road 15.

Table 1 summarizes the roadway characteristics for segments of the boundary road network near the site.

Table 1: Boundary Road Network Summary

Roadway	Highway 401 Ramps	County Road 35 Moulinette Road	County Road 29	County Road 15 Avonmore Road
Direction	East-West	North-South	East-West	North-South
Classification	Provincial Highway	County Arterial	County Arterial	County Arterial
Jurisdiction	MTO	United Counties of Stormont, Dundas, and Glengarry	United Counties of Stormont, Dundas, and Glengarry	United Counties of Stormont, Dundas, and Glengarry
Span	Windsor – Quebec	County Road 29 to County Road 2	County Road 12 to County Road 15 ²	County Road 43 to County Road 2
Speed Limit	30-40 km/h (advised) ¹	80 km/h (posted)	80 km/h (posted)	80 km/h (posted)
Total Number of Lanes	4 lanes	2 lanes	2 lanes	2 lanes
Interchanges	Full Moves at County Road 35	Full Moves at Highway 401	None	None
Ramp Terminal Control	Off-Ramp Approach Stop-Controlled (Free Flow on County Road 35)		N/A	N/A

Note 1: Although the speed limit of Highway 401 is 100 km/h, the advised limits on the ramps are 30 km/h on the on-ramps and 40 km/h on the off-ramps. For synchro modelling, the roadways were given a speed limit of 30 km/h.

Note 2: County Road 29 is not continuous across County Road 35, with an approximately 100m gap separating the eastern and western portions of the road.

The three-legged “T” intersection of County Road 35 (Moulinette Road) and County Road 29 is stop-controlled on the minor approach only (County Road 29). All approaches have a single shared lane for all vehicle movements. The intersection serves as the northern terminus of County Road 35. Notably, there is a private driveway which approaches the intersection opposite to County Road 29. For the purposes of analysis, this will be considered a stop-controlled fourth approach to this intersection.

The span of County Road 29 continues west at the Highway 401 WB ramp terminal intersection at County Road 35, located about 100m south of the County Road 35 and County Road 29 intersection. The Highway 401 WB ramp terminal is four-legged and is stop-controlled on the minor approaches only (Highway 401 WB ramps and County Road 29). The Highway 401 WB on and off ramps from the east approach are separated by a wide vegetated median at the intersection. All approaches permit left, right, and through movements via a single shared lane.

The Highway 401 EB ramp terminal at County Road 35 is a three-legged “T” intersection. The intersection is stop-controlled on the minor approach only (Highway 401 EB ramps). The western Highway 401 EB ramps approach carries a dividing median at the intersection and permits left and right turn movements through using a single lane. The northern County Road 35 approach maintains a single lane that permits through and right turn movements, while the southern County Road 35 approach maintains a single lane that permits through and left turn movements.

An additional study intersection is located at County Road 29 and County Road 15 (Avonmore Road). The intersection is a four-legged intersection and is stop-controlled on the minor approaches only (County Road 29 and Prieur Road). All approaches carry a single lane for all normally permitted movements.

Finally, the County Road 15 and County Road 2 intersection is four-legged and is stop-controlled on the minor north and south approaches. The west approach contains a dedicated left-turn lane and a shared lane for through and right-turn movements. The east approach carries a shared lane for

left-turn and through movements, and a dedicated right-turn lane. The north approach has a wide stop approach which permits two vehicles to queue side-by-side. As such, the approach was modelled as having a shared left-turn and through lane along with a right-turn lane with a storage length of 15m. This length assumes two standard passenger vehicles may queue alongside vehicles queuing in the shared left-turn and through lane. Finally, the south approach carries a single lane for left, right and through movements.

4.3 Traffic Data

Existing traffic volumes were collected by Spectrum Traffic Data Inc. on behalf of Crozier on Tuesday June 22, 2021 at the study intersections. **Table 2** below outlines the traffic data used for the traffic analysis herein, including the identified peak hour and associated peak hour factor demonstrating the difference between the peak hour and peak 15 minute period traffic volumes.

Table 2: Traffic Data Summary

Intersection	Control	Peak Hour	Time of Counts	Identified Peak Hour	Peak Hour Factor
County Road 35 (Moulinette Road) and County Road 29	Stop (minor street)	A.M.	6:00 – 10:00 a.m.	6:30 – 7:30 a.m.	0.95
		P.M.	3:00 – 7:00 p.m.	4:45 – 5:45 p.m.	0.70
County Road 35 (Moulinette Road) and County Road 29 / Highway 401 WB ramp terminal	Stop (minor street)	A.M.	6:00 – 10:00 a.m.	7:00 – 8:00 a.m.	0.95
		P.M.	3:00 – 7:00 p.m.	4:15 – 5:15 p.m.	0.79
Highway 401 EB ramp terminal at County Road 35	Stop (minor street)	A.M.	6:00 – 10:00 a.m.	6:15 – 7:15 a.m.	0.86
		P.M.	3:00 – 7:00 p.m.	4:15 – 5:15 p.m.	0.93
County Road 29 and County Road 15	Stop (minor street)	A.M.	6:00 – 10:00 a.m.	7:30 – 8:30 a.m.	0.82
		P.M.	3:00 – 7:00 p.m.	4:15 – 5:15 p.m.	0.81
County Road 15 and County Road 2	Stop (minor street)	A.M.	6:00 – 10:00 a.m.	7:30 – 8:30 a.m.	0.94
		P.M.	3:00 – 7:00 p.m.	4:15 – 5:15 p.m.	0.94

Additionally, the most current traffic count data available were obtained from MTO for the ramp terminals only. The MTO traffic survey was conducted on Tuesday April 10th, 2018. For both intersections, the counts were taken between 7:00 – 11:00 a.m. and between 2:00 – 6:00 p.m, and identified time periods of 7:15 – 8:15 a.m. and 4:30 – 5:30 p.m. as the a.m. and p.m. peak hour periods, respectively.

All traffic data discussed herein is provided in **Appendix D**.

4.4 Traffic Volume Adjustment

As requested by the MTO through the Terms of Reference (correspondence provided in **Appendix B**), an adjustment to the traffic volumes was undertaken to account for impacts of the COVID-19 pandemic. Traffic data from Spectrum in 2021 at the MTO ramp terminals was compared to the traffic data from MTO in 2018 to observe the magnitude of the traffic volume reduction.

Table 3 summarizes the total intersection traffic for 2018 and 2021 data, along with associated percent change for each of the ramp terminal intersections.

Table 3: Traffic Volumes Comparison – 2018 and 2021 Turning Movement Counts

Intersection	Peak Hour	2018 MTO Counts	2021 Spectrum Counts	Percentage Change
Moulinette Road and Hwy. 401 EB ramps	A.M.	293	203	-31%
	P.M.	271	241	-11%
Moulinette Road and Hwy. 401 WB ramps / County Road 29	A.M.	273	193	-29%
	P.M.	300	257	-14%

Based on the traffic data, the a.m. and p.m. peak hour volumes at the ramp terminal intersections have decreased by approximately 30% and 12%, respectively. As such, factors of 50% and 20% were conservatively applied to the 2021 Spectrum Counts at all study intersections to adjust the 2021 Spectrum Counts to expected 2021 levels.

Further, given no roadway connections exist between the Highway 401 ramps on Moulinette Road, the existing traffic volumes were further balanced at the ramp terminal intersections by increasing volumes on the lower volume movements. This approach was employed along Moulinette Road between the three intersections at County Road 29 / Private Access, and Highway 401 WB ramps and Highway 401 EB ramps.

Figure 2 outlined the 2021 adjusted existing traffic volumes.

4.5 Traffic Modelling

The assessment of intersections is based on the method outlined in the “Highway Capacity Manual, 2000” using Synchro 11 modeling software. Intersections are assessed using a Level of Service metric, with ranges of delay assigned a letter from “A” (best) to “F” (worst). For stop-controlled intersections, a Level of Service “A” or “B” would typically be measured during off-peak hours when lesser traffic volumes are on the roadways. Levels of Service “C” through “F” would typically be measured in the commuter peak hours when greater vehicle volumes cause longer travel times. The LOS for a signalized intersection is typically based on the average intersection delay. The Level of Service (LOS) definitions for signalized and unsignalized intersections are presented in **Appendix E**.

4.6 Intersection Operations

Intersection operations were analyzed in Synchro modelling software based on the adjusted 2021 existing traffic volumes presented in **Figure 2**. **Table 4** outlines the existing operations and level of service (LOS) at the study intersections. Detailed capacity analyses result sheets are included in **Appendix F**.

Table 4: 2021 Existing Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay	v/c ratio ¹	95 th Percentile Queue Length > Storage Length
Moulinette Road and Hwy. 401 EB ramps	Stop (minor street)	A.M.	B	10.9s	0.10 (SB)	None
		P.M.	B	10.0s	0.08 (SB)	None
Moulinette Road and Hwy. 401 WB ramps / County Road 29	Stop (minor street)	A.M.	B	11.4s	0.13 (WB)	None
		P.M.	B	12.2s	0.22 (WB)	None
Moulinette Road and County Road 29 / Private Driveway	Stop (minor street)	A.M.	A	9.6s	0.05 (WB)	None
		P.M.	A	9.8s	0.07 (WB)	None
Avonmore Road and County Road 29 / Prieur Road	Stop (minor street)	A.M.	B	10.7s	0.07 (EB)	None
		P.M.	B	10.9s	0.09 (EB)	None
County Road 2 and Avonmore Road	Stop (minor street)	A.M.	C	22.1s	0.45 (SB)	None
		P.M.	D	28.1s	0.48 (SB)	None

Notes: V/C Ratio – illustrates the maximum and other volume to capacity ratios greater than 0.85.

The Level of Service (LOS) of a signalized intersection is based on the average control delay per vehicle. The existing signal timing plans obtained from the MTO were used. The LOS for unsignalized is based on the critical control delay per approach. The 95th percentile queue lengths were derived from Sim-Traffic reports using 15-minute seeding, 60-minute simulation and an average of five runs.

Under existing operations, the stop controlled minor connection of the Highway 401 EB off-ramp at Moulinette Road is operating at a LOS “B” or better with a maximum control delay of 10.9 seconds and volume-to-capacity ratio of 0.10 in the a.m. peak hour. The stop controlled minor connection of Highway 401 WB ramps / County Road 29 at Moulinette Road is operating at a LOS “B” or better with a maximum control delay of 12.2 seconds and volume-to-capacity ratio of 0.22 in the p.m. peak hour. The stop controlled minor connection of County Road 29 / Private Driveway at Moulinette Road is operating at a LOS “A” with a maximum control delay of 9.8 seconds and volume-to-capacity ratio of 0.07 in the p.m. peak hour. The stop controlled minor connection of County Road 29 / Prieur Road at Avonmore Road is operating at a LOS “B” or better with a maximum control delay of 10.9 seconds and volume-to-capacity ratio of 0.09 in the p.m. peak hour.

Finally, the stop controlled minor connection of Avonmore Road at County Road 2 is operating at a LOS “D” or better in the p.m. peak hour. Currently, a maximum control delay of 28.1s and volume-to-capacity ratio of 0.48 is present at the intersection. As discussed later in **Section 8.1**, signal warrants were undertaken for the intersection using the traffic counts conducted by Spectrum. It was determined that signals are warranted without considering the volume adjustment outlined in **Section 4.4**. Furthermore, given traffic volumes are only expected to increase into the future horizon years, it is recommended that the County implement traffic signals at the intersection of County Road 2 and Avonmore Road in the future in order for the intersection to operate safely and efficiently. For subsequent future background and future total scenarios, traffic signals were adopted for future analysis at the intersection of Avonmore Road and County Road 2 to reflect this recommendation.

5.0 Future Background Conditions

5.1 Horizon Years

To evaluate future traffic operations at the study intersections, the full buildout (assumed in 2025), a five-year horizon (2030) and a ten-year horizon (2035) were analyzed. The study horizons are consistent with the MTO TIS Guidelines and were further confirmed through email correspondence with MTO and SDG County staff.

5.2 Future Boundary Road Network Improvements

The MTO has identified potential future interchange improvements to the existing interchange at Highway 401 and Moulinette Road. The improvements would involve the upgrade of the existing interchange from a Parclo A-2 to a Parclo A-4 (or a variation thereof) which includes the following:

- Free-flow on ramps from County Road 35 southbound to Highway 401 eastbound and westbound; and
- Free-flow on-ramp from Moulinette Road northbound to Highway 401 eastbound and westbound.

Further, the MTO has identified the potential for a future interchange at Highway 401 and Avonmore Road. The interchange would be a Parclo A-4, similar to the potential future interchange layout at Highway 401 and Moulinette Road.

At this time, the timing and configurations of the above noted future road network improvements is currently unknown. Additionally, as outlined in **Section 6.1**, the Trip Generation of the Phase A portion of the industrial development being analyzed herein is not expected to be significant, amounting to 32 and 29 vehicle trips in the a.m. and p.m. peak hours, respectively. Therefore, consideration of the MTO interchange improvements to the boundary road network was deemed outside the scope of this TIS. The requirement of these or other road improvements is dependent on the entire master subdivision buildout as well as potential future background developments in the area. However, at this time and for the purpose of the subject Phase A development, the noted MTO improvements are not required.

5.3 Future Traffic Volume Forecast

As advised by the SDG county staff, through correspondence (refer to **Appendix B**); the following annual growth rates (compounded annually) were applied to the adjusted 2021 existing traffic volumes outlined in **Figure 2**:

- For all movements along County Road 29 (both segments), a growth rate of 5% was applied
- For all other movements in the boundary road network, a growth rate of 2% was applied

The noted growth rates were deemed by staff to capture potential background developments and thus no additional background developments were incorporated into the future traffic projection.

Figures 3, 4 and 5 outline the 2025, 2030, and 2035 future background traffic volumes used for analysis.

5.4 Intersection Operations

The 2025, 2030 and 2035 future background traffic operational measures of effectiveness are outlined in **Tables 5, 6 and 7**. These operations are based on the future background traffic volumes illustrated in **Figures 3, 4 and 5** for the 2025, 2030 and 2035 background traffic scenarios, respectively. Level of Service definitions are included in **Appendix E**. Detailed capacity analyses result sheets are included in **Appendix F**.

Table 5: 2025 Future Background Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay	v/c ratio	95 th Percentile Queue Length > Storage Length
Moulinette Road and Hwy. 401 EB ramps	Stop (minor street)	A.M.	B	11.2s	0.11 (SB)	None
		P.M.	B	10.2s	0.09 (SB)	None
Moulinette Road and Hwy. 401 WB ramps / County Road 29	Stop (minor street)	A.M.	B	11.8s	0.15 (WB)	None
		P.M.	B	12.8s	0.25 (WB)	None
Moulinette Road and County Road 29 / Private Driveway	Stop (minor street)	A.M.	A	9.7s	0.06 (WB)	None
		P.M.	A	10.0s	0.09 (WB)	None
Avonmore Road and County Road 29 / Prieur Road	Stop (minor street)	A.M.	B	11.0s	0.09 (EB)	None
		P.M.	B	11.2s	0.12 (EB)	None
County Road 2 and Avonmore Road	Stop (minor street)	A.M.	D	27.3s	0.54 (SB)	None
		P.M.	E	39.4s	0.67 (SB)	None
	Signal	A.M.	B	15.8s	0.78 (EBT)	None
		P.M.	B	14.5s	0.78 (WBT)	None

Notes: V/C Ratio – illustrates the maximum and other volume to capacity ratios greater than 0.85.
 The Level of Service (LOS) of a signalized intersection is based on the average control delay per vehicle. The existing signal timing plans obtained from the MTO were used. The LOS for unsignalized is based on the critical control delay per approach.

Table 6: 2030 Future Background Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay	v/c ratio ¹	95 th Percentile Queue Length > Storage Length
Moulinette Road and Hwy. 401 EB ramps	Stop (minor street)	A.M.	B	11.6s	0.12 (SB)	None
		P.M.	B	10.5s	0.09 (SB)	None
Moulinette Road and Hwy. 401 WB ramps / County Road 29	Stop (minor street)	A.M.	B	12.5s	0.17 (WB)	None
		P.M.	B	13.9s	0.30 (WB)	None
Moulinette Road and County Road 29 / Private Driveway	Stop (minor street)	A.M.	A	9.9s	0.09 (WB)	None
		P.M.	B	10.2s	0.12 (WB)	None
Avonmore Road and County Road 29 / Prieur Road	Stop (minor street)	A.M.	B	11.5s	0.11 (EB)	None
		P.M.	B	11.9s	0.16 (EB)	None
County Road 2 and Avonmore Road	Stop (minor street)	A.M.	E	43.6s	0.74 (SB)	None
		P.M.	F	93.6s	0.95 (SB)	None
	Signal	A.M.	B	16.2s	0.81 (EBT)	None
		P.M.	B	15.1s	0.82 (WBT)	None

Notes: Ditto Notes Table 5.

Table 7: 2035 Future Background Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay	v/c ratio ¹	95 th Percentile Queue Length > Storage Length
Moulinette Road and Hwy. 401 EB ramps	Stop (minor street)	A.M.	B	12.2s	0.14 (EB)	None
		P.M.	B	10.8s	0.10 (SB)	None
Moulinette Road and Hwy. 401 WB ramps / County Road 29	Stop (minor street)	A.M.	B	13.5s	0.21 (WB)	None
		P.M.	C	15.4s	0.35 (WB)	None
Moulinette Road and County Road 29 / Private Driveway	Stop (minor street)	A.M.	B	10.2s	0.11 (WB)	None
		P.M.	B	10.6s	0.15 (WB)	None
Avonmore Road and County Road 29 / Prieur Road	Stop (minor street)	A.M.	B	12.1s	0.15 (EB)	None
		P.M.	B	12.7s	0.21 (EB)	None
County Road 2 and Avonmore Road	Stop (minor street)	A.M.	F	102.3s	1.00 (SB)	None
		P.M.	F	272.9s	1.42 (SB)	None
	Signal	A.M.	B	17.4s	0.85 (EBT)	None
		P.M.	B	16.5s	0.86 (WBT)	None

Notes: Ditto Notes Table 5.

Under the 2035 future background conditions, the stop controlled minor connection of the Highway 401 EB off-ramps at Moulinette Road is projected to operate below capacity at a LOS “B” or better with a maximum control delay of 12.2 seconds and volume-to-capacity ratio of 0.14 in the a.m. peak hour. The stop controlled minor connection of the Highway 401 WB off-ramps / County Road 29 at Moulinette Road is projected to operate below capacity at a LOS “C” or better with a maximum control delay of 15.4 seconds and volume-to-capacity ratio of 0.35 in the p.m. peak hour. The stop controlled minor connection of County Road 29 / Private Driveway at Moulinette Road is projected to operate below capacity at a LOS “B” or better with a maximum control delay of 10.6 seconds and volume-to-capacity ratio of 0.15 in the p.m. peak hour. The stop controlled minor connection of County Road 29 / Prieur Road at Avonmore Road is projected to operate below capacity at a LOS “B” or better with a maximum control delay of 12.7 seconds and volume-to-capacity ratio of 0.21 in the p.m. peak hour.

Under the future background scenarios, the study intersection of County Road 2 and Avonmore Road was analyzed under two scenarios: two-way stop control and signal control (as warranted). Under the two-way stop control scenario, the intersection is forecast to operate at a LOS “F” or better in the 2035 horizon year with a maximum control delay of 272.9s and volume-to-capacity ratio of 1.42 in the critical p.m. peak hour. However, given operations are quite adequate under stop-control through to the 2030 horizon, the timing for implementation of a traffic signal should be monitored by the Township and implemented as and when needed.

Under the signal control scenario, the intersection is forecast to operate at a LOS “B” or better in the 2035 horizon year with a maximum control delay of 17.4s. Similar operational improvements can be observed when the intersection is analyzed as signalized in the 2025 and 2030 horizon years, as opposed to stop-control. These findings support the recommendation to provide signalization at the

intersection of County Road 2 and Avonmore Road. Two movements were identified as having exceeded the critical volume-to-capacity threshold: the eastbound through and right-turn movement in the a.m. peak hour (0.85), and the westbound left-turn and through movement in the p.m. peak hour (0.86). These through movements are associated with Cornwall commuter traffic, and are approaching capacity. Future optimization of the signal timing plan may be considered to ensure adequate capacity is provided.

The study intersections are forecast to operated similarly or better under the 2025 and 2030 horizons compared to the ultimate 2035 horizon. No traffic operation issues are forecast.

6.0 Site Generated Traffic

6.1 Trip Generation

To forecast the site trip generation, the analysis herein separately forecasted the vehicle and truck traffic associated with the proposed development to capture all vehicular traffic movements.

To forecast the vehicle trips generated by the proposed development, the ITE Trip Generation Manual, 11th Edition was used. Land Use Category (LUC) 030, “Intermodal Truck Terminal” is described as “a facility where goods are transferred between trucks, between trucks and railroads, or between trucks and ports”. LUC 030 was used to estimate vehicle trips generated by the proposed development. “Peak hour of adjacent street traffic” was used to forecast trips generated by the development. Further, through correspondence with the proponent (Avenue 31 Capital Inc.), a maximum of 24 employees are expected to be employed at the site at Phase A full-buildout. This value was used as the independent variable for the proposed development vehicle trip generation forecast.

Furthermore, the truck trip generation forecast was established using information supplied by the proponent. It is expected that a maximum of 60 daily truck trips will be generated by the Phase A development. It is standard practice that 10% of the expected daily trips be considered to occur in the peak hours for a land use such as the rail yard/ industrial. For conservative analysis. As such, 10% of the expected total daily truck trips were assigned to each of the a.m. and p.m. peak hours.

The combined trip generation forecast is summarized in **Table 8** below.

Table 8: Site Generated Trips

Site	Trip Type	Peak Hour	Number of Trips		
			Inbound	Outbound	Total
Long Sault Rail Yard – Phase A	Vehicle Trips	A.M.	9	11	20
		P.M.	9	8	17
	Truck Trips	A.M.	6	6	12
		P.M.	6	6	12
	Total Trips	A.M.	15	17	32
		P.M.	15	14	29

The proposed development is forecast to generate a total of 32 and 29 two-way trips during the weekday a.m. and p.m. peak hours, respectively.

6.2 Trip Distribution and Assignment

The new site generated trips were distributed based on existing travel patterns and expected catchment areas for both vehicle (employee) traffic and heavy truck traffic. The trip distribution used to assign proposed development trips is summarized in **Table 9**.

Table 9: Trip Distribution

Boundary Road Network Entry/Exit Location	Direction	Vehicle Trip Distribution	Truck Trip Distribution	Destinations
Highway 401	West	15%	40%	Kingston, Toronto
Highway 401	East	15%	35%	Montreal, Quebec City
Avonmore Road (CR15)	North	20%	5%	Ottawa, Hawkesbury
County Road 36	West	10%	0%	Long Sault, Ingleside
Highway 2	East	40%	20%	Cornwall, Plattsburgh U.S.
Total	N/A	100%	100%	

The trip distribution within the boundary road network is illustrated in **Figure 6** and **Figure 7** for vehicle traffic and truck traffic, respectively. The resulting site trip assignments to the boundary road network is presented in **Figure 8** and **Figure 9** for vehicle traffic and truck traffic, respectively.

7.0 Future Total Conditions

7.1 Basis of Assessment

The traffic impacts arising from the proposed development were assessed on the basis of the site generated traffic illustrated in **Figures 8 and 9** superimposed on the future background traffic volumes in **Figures 3, 4, and 5**. The resulting future total traffic volumes for the weekday a.m. and p.m. peak hours are illustrated in **Figures 10, 11, and 12** for the 2025, 2030, and 2035 horizon years.

7.2 Intersection Operations

Tables 10, 11 and 12 outline the future total traffic conditions in the 2025, 2030 and 2035 scenarios, respectively. These operations are based on the 2025, 2030 and 2035 future total traffic volumes illustrated in **Figures 10, 11 and 12**, respectively. Level of Service definitions are provided in **Appendix E**. Detailed capacity analyses result sheets are included in **Appendix F**.

Table 10: 2025 Future Total Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay	v/c ratio ¹	95 th Percentile Queue Length > Storage Length
Moulinette Road and Hwy. 401 EB ramps	Stop (minor street)	A.M.	B	11.4s	0.12 (EB)	None
		P.M.	B	10.4s	0.09 (SB)	None
Moulinette Road and Hwy. 401 WB ramps / County Road 29	Stop (minor street)	A.M.	B	12.0s	0.16 (WB)	None
		P.M.	B	13.1s	0.26 (WB)	None
Moulinette Road and County Road 29 / Private Driveway	Stop (minor street)	A.M.	A	9.8s	0.08 (WB)	None
		P.M.	B	10.1s	0.10 (WB)	None
Avonmore Road and County Road 29 / Prieur Road	Stop (minor street)	A.M.	B	11.2s	0.10 (EB)	None
		P.M.	B	11.5s	0.13 (EB)	None
County Road 2 and Avonmore Road	Stop (minor street)	A.M.	D	28.4s	0.57 (SB)	None
		P.M.	E	42.8s	0.70 (SB)	None
	Signal	A.M.	B	15.7s	0.78 (EBT)	None
		P.M.	B	14.5s	0.78 (WBT)	None
Avonmore Road and the Site Access	Stop (minor street)	A.M.	B	11.2s	0.15 (SB)	None
		P.M.	B	12.6s	0.14 (SB)	None

Notes: V/C Ratio – illustrates the maximum and other volume to capacity ratios greater than 0.85.
 The Level of Service (LOS) of a signalized intersection is based on the average control delay per vehicle. The existing signal timing plans obtained from the MTO were used. The LOS for unsignalized is based on the critical control delay per approach.

Table 11: 2030 Future Total Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay	v/c ratio ¹	95 th Percentile Queue Length > Storage Length
Moulinette Road and Hwy. 401 EB ramps	Stop (minor street)	A.M.	B	11.9s	0.13 (EB)	None
		P.M.	B	10.6s	0.10 (SB)	None
Moulinette Road and Hwy. 401 WB ramps / County Road 29	Stop (minor street)	A.M.	B	12.7s	0.18 (WB)	None
		P.M.	B	14.2s	0.31 (WB)	None
Moulinette Road and County Road 29 / Private Driveway	Stop (minor street)	A.M.	B	10.0s	0.10 (WB)	None
		P.M.	B	10.4s	0.13 (WB)	None
Avonmore Road and County Road 29 / Prieur Road	Stop (minor street)	A.M.	B	11.7s	0.13 (EB)	None
		P.M.	B	12.0s	0.17 (EB)	None
County Road 2 and Avonmore Road	Stop (minor street)	A.M.	E	47.4s	0.77 (SB)	None
		P.M.	F	106.7s	1.00 (SB)	None
	Signal	A.M.	B	16.1s	0.81 (EBT)	None
		P.M.	B	15.1s	0.82 (WBT)	None
Avonmore Road and the Site Access	Stop (minor street)	A.M.	B	11.5s	0.17 (SB)	None
		P.M.	B	13.2s	0.16 (EB)	None

Notes: Ditto Notes Table 10.

Table 12: 2035 Future Total Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay	v/c ratio ¹	95 th Percentile Queue Length > Storage Length
Moulinette Road and Hwy. 401 EB ramps	Stop (minor street)	A.M.	B	12.5s	0.15 (EB)	None
		P.M.	B	10.9s	0.11 (SB)	None
Moulinette Road and Hwy. 401 WB ramps / County Road 29	Stop (minor street)	A.M.	B	13.8s	0.22 (WB)	None
		P.M.	C	15.8s	0.37 (WB)	None
Moulinette Road and County Road 29 / Private Driveway	Stop (minor street)	A.M.	B	10.3s	0.12 (WB)	None
		P.M.	B	10.7s	0.17 (WB)	None
Avonmore Road and County Road 29 / Prieur Road	Stop (minor street)	A.M.	B	12.4s	0.17 (EB)	None
		P.M.	B	13.0s	0.23 (EB)	None
County Road 2 and Avonmore Road	Stop (minor street)	A.M.	F	113.0s	1.04 (SB)	None
		P.M.	F	292.9s	1.47 (SB)	None
	Signal	A.M.	B	17.4s	0.85 (EBT)	None
		P.M.	B	16.5s	0.86 (WBT)	None
Avonmore Road and the Site Access	Stop (minor street)	A.M.	B	11.8s	0.18 (SB)	None
		P.M.	B	13.8s	0.17 (EB)	None

Notes: Ditto Notes Table 10.

Under the ultimate horizon 2035 Future Total Conditions, the stop controlled minor connection of the Highway 401 EB off-ramp at Moulinette Road is projected to operate below capacity at a LOS “B” with a maximum control delay of 12.5 seconds and volume-to-capacity ratio of 0.15 in the a.m. peak hour. Compared to the 2035 Future Background scenario, the addition of trips from the proposed development amounts to an increase of 0.3 seconds and 0.01 for maximum control delay and maximum volume to capacity ratio, respectively (a.m. peak hour).

The stop controlled minor connection of Highway 401 WB ramps / County Road 29 and County Road 7 is projected to operate below capacity at a LOS “C” or better with a maximum intersection delay of 15.8 seconds and volume-to-capacity ratio of 0.37 in the p.m. peak hour. A maximum control delay increment of 0.4 seconds and volume-to-capacity increase of 0.02 (p.m. peak hour) from Future Background operations is expected.

The stop controlled minor connection of County Road 29 / Private Driveway at Moulinette Road is projected to operate below capacity at a LOS “B” or better with a maximum control delay of 10.7 seconds and volume-to-capacity ratio of 0.17 in the p.m. peak hour. Compared to the 2035 Future Background scenario, the addition of site trips from the proposed development amounts to an increase of 0.1 seconds and 0.02 for maximum control delay and maximum volume to capacity ratio, respectively.

The stop controlled minor connection of County Road 29 / Prieur Road at Avonmore Road is projected to operate below capacity at a LOS “B” or better with a maximum control delay of 13.0

seconds and volume-to-capacity ratio of 0.23 in the p.m. peak hour. Compared to the 2035 Future Background scenario, the addition of site trips from the proposed development amounts to an increase of 0.3 seconds and 0.08 for maximum control delay and maximum volume to capacity ratio, respectively.

Under the future total scenarios, the study intersection of County Road 2 and Avonmore Road was analyzed under two scenarios: two-way stop control and signal control. Under the two-way stop control scenario, the intersection is forecast to operate at a LOS "F" or better in the 2035 horizon year with a maximum control delay of 292.9s and volume-to-capacity ratio of 1.47 in the critical p.m. peak hour. However, given operations are quite adequate under stop-control through to the 2030 horizon (similar to future background), the timing for implementation of a traffic signal should be monitored by the Township and implemented as and when needed.

Under the signal control scenario, the intersection is forecast to operate at a LOS "B" or better in the 2035 horizon year with a maximum control delay of 17.4s. Similar operational improvements are forecast under the 2025 and 2030 horizon years. These findings support the recommendation to provide signalization at the intersection of County Road 2 and Avonmore Road. Compared to future background conditions (under signal control analysis), the intersection of County Road 2 and Avonmore Road is not expected to experience a significant intersection control delay increment nor a volume-to-capacity increase. Similar to future background conditions, the eastbound through and westbound through movements are forecast to operate near capacity in the a.m. and p.m. peak hours, respectively.

The proposed site access is projected to operate below capacity at a LOS "B" or better, with a maximum control delay of 13.8 seconds and volume-to-capacity ratio of 0.18 in the a.m. and p.m. peak hours, respectively. The site access is projected to operate without any significant traffic operational issues.

Overall, the boundary road network is operating safely and efficiently under the ultimate 2035 future total scenario. The boundary road network is expected to operate similarly or better under the 2025 and 2030 horizon years.

Based on the analysis herein, the proposed development is not expected to significantly alter the traffic operations of the study intersections. The proposed development can be supported from a traffic operations perspective.

8.0 Warrants Assessment

8.1 Traffic Signal Warrant Assessment

Traffic signal warrant analysis was conducted using an Ontario Traffic Manual (OTM) Book 12 configured excel sheet based on the average hourly volume approach. **Table 13** outlines the signal warrant analysis undertaken by study intersection and horizon year.

Table 13: Traffic Signal Warrant Assessment

Location	Horizon Year	Traffic Signals Warranted?
County Road 2 and Avonmore Road	2021 (Spectrum Counts)	Yes
Moulinette Road and Hwy. 401 EB ramps	2035 Future Total	No
Moulinette Road and Hwy. 401 WB ramps / County Road 29	2035 Future Total	No
Moulinette Road and County Road 29 / Private Driveway	2035 Future Total	No
Avonmore Road and County Road 29 / Prieur Road	2035 Future Total	No

As shown in **Table 13**, traffic signals are warranted at the intersection of County Road 2 and Avonmore Road under existing conditions. As discussed in **Section 4.6**, this study intersection is recommended to be signalized in the future based on this result and has been modelled as such for future horizon scenarios. For all other study intersections, signals are not warranted under the ultimate 2035 horizon scenario based on the Phase A development only.

Signal Warrant analysis excerpts are included in **Appendix G**.

8.2 Left-Turn Lane Warrant Assessment

A left-turn warrant analysis was conducted for the following movements at the noted study intersections under the ultimate horizon 2035 future total conditions:

- Moulinette Road and Highway 401 EB ramps (Northbound Left)
- Moulinette Road and Highway 401 WB ramps / County Road 29 (Northbound Left)
- Moulinette Road and Highway 401 WB ramps / County Road 29 (Southbound Left)
- Avonmore Road and County Road 29 / Prieur Road (Northbound Left)

Of the cases analyzed, only the northbound left-turn movement at the intersection of Moulinette Road and Highway 401 EB ramps was warranted under 2035 future total conditions. The case was not checked under preceding analysis years as the warrant is only just satisfied (i.e. a reduction of only a couple vehicles at either the advancing or opposing approach for the 2035 Future Total scenario would change the analysis to not warranted). This finding suggests that a northbound-left turn storage lane length of 15m may be explored by the County as a long term measure to improve traffic operations at the Moulinette Road and Highway 401 EB ramps intersection. It is noted that no traffic from the proposed development is associated with this movement.

For the remaining cases, including at the site access, total approach traffic volumes are low, with both the maximum advancing and opposing volumes at any of the intersections being less than 100 trips. As a result, left-turn warrants are not met at any of the site accesses given a combination of at least 100 advancing with 800 opposing trips or 200 advancing with 100 opposing trips is required to meet the threshold for a left turn lane under any of the MTO charts for a 100 km/h design speed.

Excerpts for the left-turn lane warrant assessment are provided in **Appendix H**.

It is acknowledged that subject to the buildout of the remaining industrial subdivision, road improvement requirements (i.e., traffic signals and turn lanes) will change and shall be confirmed by future Traffic Studies conducted to assess subsequent development Phases.

9.0 Site Access Safety Review

9.1 Site Access Sight Distance Assessment

The available sight distances on County Road 15 at the proposed site access locations were measured from an online Geographic Information System (GIS) mapping tool. The following assumptions were made regarding the available sight distance measurements:

- A standard driver eye height of 1.08 m for a passenger car and 2.3 m for combination trucks.
- A 4.4 metre setback from the edge of the outer lane to represent a vehicle waiting to exit the connecting roadway.

The standards set out in the Transportation Association of Canada Geometric Design Guide for Canadian Roads (TAC-GDGCR) Section 9.9 was used to assess the adequacy of available sight distances. Per the TAC-GDGCR, minimum required intersection sight distance is calculated using equation 9.9.1 as outlined below:

$$ISD = 0.278 * V_{major} * tg$$

Where;

ISD = Intersection Sight Distance

V major = design speed of roadway (km/h)

tg = assumed time gap for vehicles to turn from stop onto roadway (s)

The subject segments of County Road 15 are fairly flat; therefore, the assessment herein assumed the roadway longitudinal slope to be within 3%. As presented in **Table 14**, the minimum sight distance requirements are satisfied at the proposed site access connection to County Road 15.

Table 14: Sight Distance Analysis

Feature	Site Access – Vehicle Assessment	Site Access – Truck Assessment
Access Type	Full-Moves	
Speed Limit	80 km/h	
Assumed Design Speed	100 km/h	
Base Time Gap (right turn)	6.5 s	10.5 s
Base Time Gap (left turn)	7.5 s	11.5 s
Grade of Roadway	Assumed as 3%	Assumed as 3%
Horizontal Alignment of Roadway	Fairly straight	Fairly straight
Required Sight Distance (right)	185 m	295 m
Required Sight Distance (left)	210 m	320 m
Available Sight Distance (right and left)	>350 m (both)	

9.2 Access Spacing and Corner Clearance

The TAC-GDGCR was used to review access spacing for the proposed site accesses along Concession Road 7. The site access spacing requirements and proposed spacing are presented in **Table 15**.

Table 15: Access Spacing Review

Site Access	Available Spacing ¹	Minimum Spacing and Corner Clearance Requirements	Evaluation	Source
Site Access connection at County Road 15	>350 m (to north) >350 m (to south)	35 m corner clearance (from stop intersection)	Requirement Satisfied	TAC-GDGCR Figure 8.8.2
		Minimum of 3 m spacing between driveways	Requirement Satisfied	TAC-GDGCR Figure 8.9.2

As presented in Table 15, the site access location is adequate with regards to the minimum spacing and corner clearance requirements. No operational safety issues are forecasted.

10.0 Parking Assessment

Table 16 presents the parking requirements for the proposed development per the “Township of South Stormont By-law No. 2011-100” (Municipal By-law excerpts provided in **Appendix C**). The shop has a GFA of 1200 m² and a maximum of 24 employees are expected for Phase A full operations as advised by the proponent.

Table 16: Parking Review

Parking Type	Required Rate	Total Required	Total Proposed
Vehicle Parking Spaces	One (1) space per 95 square metres of floor area plus one (1) space for every three (3) employees per shift.	13 + 8 = 21 parking spaces	21
Bicycle Parking Spaces	One bicycle rack for principle uses over 1,000 sq m floor area, plus one additional rack for every 30 standard parking space provided.	1	1

As presented in **Table 16**, the proposed vehicle parking spaces satisfy the Township's requirements for minimum required parking spaces as outlined in sections 3.14 and 3.23. Sufficient open space for accommodating expected trucks and loading will be provided at the site. Further, the shop is expected to have room to accommodate the one bicycle rack as required by the Zoning By-law.

11.0 Conclusions

This study has assessed the transportation impacts of the proposed Phase A industrial development located at Avonmore Road and CN rail tracks in the Township of South Stormont, United Counties of Stormont, Dundas, and Glengarry. The analysis herein regarding the proposed development has resulted in the following key findings:

- Under existing conditions, the stop controlled minor connection of Avonmore Road at County Road 2 is operating at a LOS “D” or better in the p.m. peak hour. It was determined that signals are warranted under the existing 2021 traffic volumes, without considering COVID-19 volume adjustments. Given traffic volumes are only expected to increase into the future horizon years, signals were incorporated as part of future analysis.
- Under existing conditions, the remaining study intersections are operating efficiently at a LOS “B” or better during the a.m. and p.m. peak hours.
- The proposed industrial development is forecast to generate a total of 32 and 29 two-way trips during the weekday a.m. and p.m. peak hours, respectively.
- Under 2035 future background operations, the study intersections are expected to operate efficiently at a LOS “C” or better during the a.m. and p.m. peak hours.
- The intersection of County Road 2 and Avonmore Road was analyzed under two scenarios: two-way stop control and signal control. Under the two-way stop control scenario, the intersection is forecast to operate at a LOS “F” in the 2035 horizon year and better in earlier study horizons. However, given operations are quite adequate under stop-control through to the 2030 horizon, the timing for implementation of a traffic signal should be monitored by the Township and implemented as and when needed.
- With a traffic signal, the intersection of County Road 2 and Avonmore Road is forecast to operate at a LOS “B” or better. These findings support the recommendation to provide signalization at the intersection of County Road 2 and Avonmore Road in future. At the intersection of County Road 2 and County Road 15, the eastbound through (a.m. peak) and westbound through (p.m. peak) are expected to operate near capacity in the respective peak hours.
- Under the ultimate horizon 2035 total traffic conditions (includes site generated trips), the study intersections are projected to operate similarly to future background conditions at a LOS “C” or better during the a.m. and p.m. peak hours. Compared to 2035 future background conditions, a maximum control delay increment of 0.4s and volume-to-capacity ratio increase of 0.02 at all study intersection is expected. Similar to future background conditions, at the intersection of County Road 2 and County Road 15, the eastbound through and westbound through movements are forecast to operate near capacity in the a.m. and p.m. peak hours, respectively.
- A 15m northbound left-turn lane is warranted at the intersection of County Road 35 and Highway 401 EB ramps under the 2035 Future Total horizon year. The County may explore this initiative as a long term measure to improve traffic operations at the Moulinette Road and Highway 401 EB ramps intersection.

- It is acknowledged that subject to the buildout of the remaining industrial subdivision, road improvement requirements (i.e., traffic signals and turn lanes) will change and shall be confirmed by future Traffic Studies conducted to assess subsequent development Phases.
- The proposed site accesses are projected to operate efficiently and safely without any issues related to sight-lines, corner clearance and access conflicts. The access will be designed to the industrial standards of the OPSD 350.010 as required by the Township of South Stormont "Site Plan & Subdivision Design Guidelines".
- The vehicle parking supply of 22 spaces satisfies the Township of South Stormont's By-law parking requirements. Sufficient open space for accommodating expected trucks and loading will be provided at the site. Additionally, the required bicycle and loading spaces are provided for the development compared to the By-law requirements.

In conclusion, the traffic generated from the proposed Phase A industrial development will not materially impact operations of the boundary road network. The Site Plan Application can be supported from a traffic operations perspective as the boundary road system is forecast to adequately accommodate the increase in traffic volumes attributable to the proposed development.

Minor changes to the site plan will not materially affect the conclusions contained within this Study. Should you have any questions or require further information, please contact the undersigned.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.



Peter Apasnore MASC., P.Eng., PTOE
Project Engineer

/AH

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APPENDIX A

Site Plan

Development Standards

i.) Development on private or partial services (municipal water or sanitary sewers):

	Required	Provided
Lot Area (minimum)	1 ha (2.5 acres)	271.6 ha
Lot Frontage (minimum)	60 m (196.85 ft.)	822 m
Yard Requirements (minimum)		
Front	12 m (39.37 ft.)	378 m
Rear	12 m (39.37 ft.)	2656 m
Exterior Side	12 m (39.37 ft.)	1625 m
Interior Side	7.5 m (24.61 ft.)	10.9 m
Building Height (maximum)	15 m (49.21 ft.)	6 m
Accessory Building	6 m (19.69 ft.)	0
Lot Coverage (maximum)	20%	4%

(ii) Development on full services (municipal water and sanitary sewers)

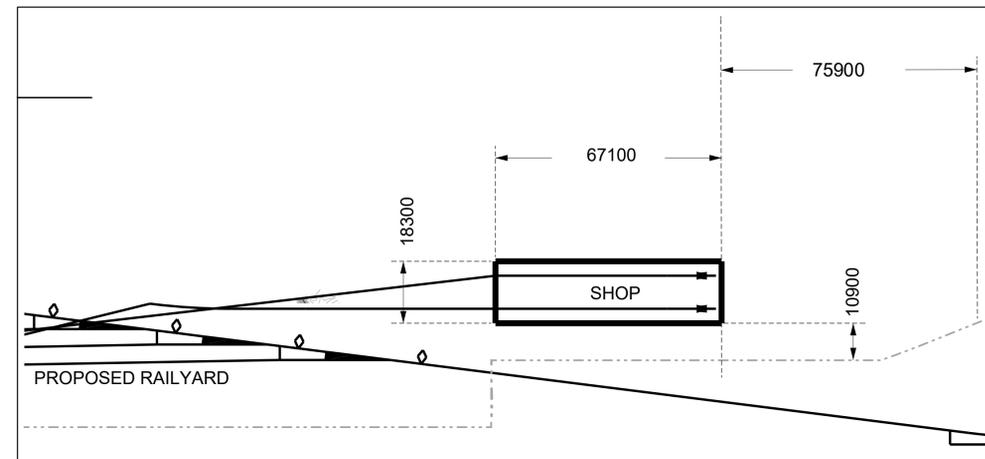
	Required	Provided
Lot Area (minimum)	1000 m ² (5005.22 sq.ft.)	271.6 ha
Lot Frontage (minimum)	20 m (49.21 ft.)	822 m
Yard Requirements (minimum)		
Front	7.5 m (24.61 ft.)	378 m
Rear	7.5 m (24.61 ft.)	2656 m
Exterior Side	7.5 m (24.61 ft.)	1625 m
Interior Side	3 m (9.84 ft.)	10.9 m
Building Height (maximum)	15 m (49.21 ft.)	6 m
Accessory Building	6 m (19.69 ft.)	0
Lot Coverage (maximum)	40%	4%



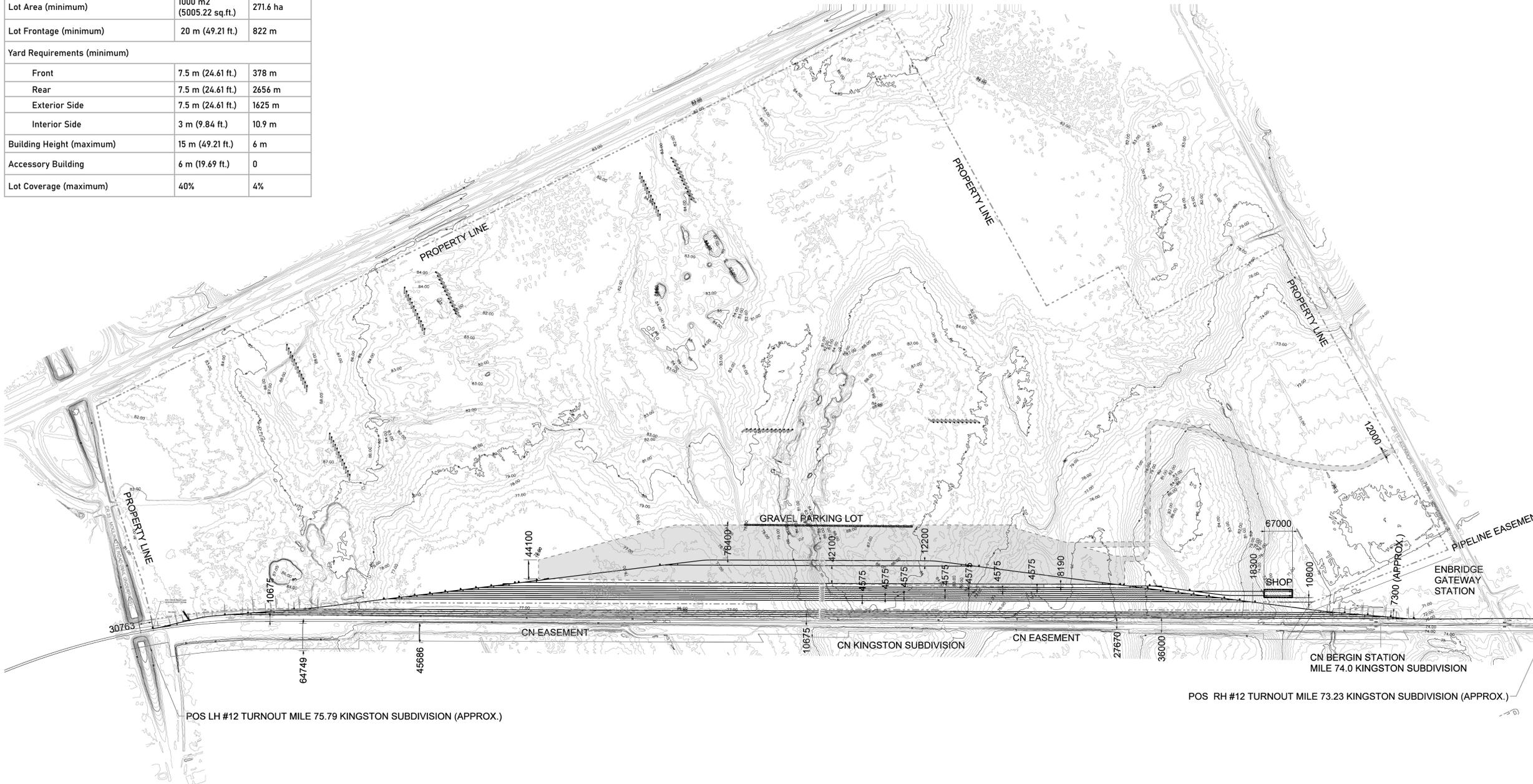
1 A01 LOCATION PLAN SCALE N.T.S.

SITE PLAN LEGEND

ICON	DESCRIPTION
	12m Wide Roadway
	Proposed Buildings
	Proposed Rail Line



1 A01 SHOP PLAN SCALE 1:500



1 A01 SITE PLAN SCALE 1:5000

SHEET SIZE: ARCH D (24"x36")

NOTES:

Contractor shall check and verify all dimensions on site and report any discrepancies to the Architect before proceeding.

GENERAL SITE PLAN NOTES:

- Exterior site lighting shall be directed onto the site

no.	revision	date
01	ISSUED FOR COORDINATION	2021/07/14



north nord



Re:PUBLIC URBANISM
PHONE 514.503.2614
E MAIL hicks@republicurbanism.com

detail no.	sheet no.	1 A1	detail no.	feuille no.

project LONG SAULT RAILYARDS SITE PLAN

designed by / conçu par	JM	approved by / approuvé par	PH
drawn by / dessiné par	JM	project no. / no. du projet	
date	2021/07/14	scale	as noted
drawing / dessin			

SITE PLAN

revision / révision	sheet no. / no. de la feuille	A01

APPENDIX B

Correspondence

From: Peter Apasnore
Sent: Friday, July 16, 2021 4:14 PM
To: Aidan Hallsworth
Subject: FW: Long Sault Industrial (Phase A) - Terms of Reference

Follow Up Flag: Follow up
Flag Status: Flagged

Fyi.

Peter Apasnore, M.A.Sc., P.Eng., PTOE | Project Engineer
DID: 416.842.0029

From: Benjamin De Haan <b_dehaan@sdgcounties.ca>
Sent: July 16, 2021 4:13 PM
To: Peter Apasnore <papasnore@cfcrozier.ca>
Subject: RE: Long Sault Industrial (Phase A) - Terms of Reference

Greetings Peter,

The County has reviewed the scope of work. We would additionally like to see the intersection of SDG 15 and SDG 2 analyzed, as, it is expected that this intersection will be negatively impacted as a result of employee traffic.

To answer the specific questions raised below

- 1) **Please confirm if any adjustments are required to account for potential impact of Covid-19**
Based on current traffic volumes observed through our region, SDG does not believe there is any need to make pandemic related traffic volume adjustments.
- 2) **Please confirm if any background developments should be incorporated**
2% traffic growth on all roads except SDG 29 would be appropriate. There has been significant development along the SDG 29 corridor in recent years with continued growth expected. Accordingly the County would prefer to see a 5% growth applied to volumes on this road.

Thanks



Benjamin de Haan P.Eng.
Director of Transportation Services

United Counties of Stormont, Dundas and Glengarry
26 Pitt Street Cornwall, ON K6J 3P2
P: (613) 932-1515 x 208
F: (613) 936-2913
E: bdehaan@sdgcounties.ca
W: www.sdgcounties.ca



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From: Peter Apasnore <papasnore@cfcrozier.ca>
Sent: July 7, 2021 2:00 PM
To: Benjamin De Haan <b_dehaan@sdgcounties.ca>
Subject: RE: Long Sault Industrial (Phase A) - Terms of Reference

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Ben,

It's been one month since I circulated this terms of reference; can you provide some feedback today/tomorrow?

Thanks,

Peter Apasnore, M.A.Sc., P.Eng., PTOE | Project Engineer
211 Yonge Street, Suite 301 | Toronto, ON M5B 1M4
T: 416.477.3392



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Read our latest news and announcements [here](#).

From: Peter Apasnore
Sent: June 7, 2021 2:38 PM
To: Benjamin De Haan <b_dehaan@sdgcounties.ca>
Subject: Long Sault Industrial (Phase A) - Terms of Reference

Hi Benjamin,

I am reaching out to coordinate a Terms of Reference for a Traffic Impact Study (TIS) pertaining to Phase A of the proposed industrial development located in Long Sault, Township of South Stormont (United Counties of Stormont, Dundas, and Glengarry).

We have been retained by Avenue 31 Capital Inc. to prepare a TIS for the proposed industrial development. The subject property is approximately 285 ha and bound by a CN Rail Corridor to the south, Mouinette Road (County Road 35) to the west, Highway 401 to the north and Avonmore Road (County Road 15) to the east. The subject property is located within the Ministry of Transportation of Ontario (MTO)'s Permit Control Area, is currently vacant and is zoned MH-h (Heavy Industrial – holding) under the Township of South Stormont Zoning By-law No. 2011-100.

Per the conceptual site plan (attached), the Phase A development proposes an industrial rail yard with ultimately some parking and a small building for employees; and a full-moves site access to County Road 15. Details are being prepared but will not change largely from this conceptual plan.

Our proposed scope of work is outlined below and conforms to the MTO's "General Guidelines for the Preparation of Traffic Impact Studies" (February 2021; the MTO were coordinated on a separate email. At the earliest please confirm or provide your feedback on the scope.

Many Thanks,

[Study Scope](#)

1. The TIS will analyze the following study intersections:
 - County Road 35 (Moulinette Road) / Windfall Road and County Road 29
 - County Road 35 and Highway 401 Westbound Ramp/ County Road 29
 - County Road 35 and Highway 401 Eastbound Ramp
 - County Road 15 (Avonmore Road) and County Road 29

- County Road 15 at the site access
2. The TIS will analyze the weekday a.m. and p.m. peak periods. We will commission traffic counts at the study intersections on a typical weekday between 6:00 a.m. – 10:00 a.m. and 3:00 p.m. – 7:00 p.m. We previously obtained traffic counts for the Highway 401 westbound and eastbound ramp terminals at County Road 35 from the MTO (undertaken on April 10, 2018). However, given no counts are available for the remaining intersections, new counts will be undertaken at all the existing study intersections. **Please confirm if any adjustments are required to account for potential impact of Covid-19.**
 3. Future background traffic volumes will be forecasted for the assumed year of full build-out (2025), five-year horizon (2030) and ten-year horizon (2035). A standard 2% annual growth rate will be applied to the Highway 401 Ramps and through movements at the remaining study intersections. No background developments have been identified; **please confirm if any background developments should be incorporated.**
 4. Trip generation for the proposed industrial yard will be forecasted using surrogate site trip generation survey data for undertaken at similar locations in Cornwall and Johnston, Ontario. Trips will be categorized into passenger cars and heavy trucks.
 5. Site generated traffic will be assigned to and from the boundary road network using existing travel patterns and expected catchment areas for employees and heavy truck traffic.
 6. Existing, future background and future total traffic operations at the study intersections will be analyzed using Synchro 11 modelling software during the identified peak hours. Standard traffic operations metrics such as delays, volume-to-capacity ratios, and 95th percentile queue lengths will be analyzed and reported.
 7. Future total traffic operations will be compared to future background traffic operations to determine what mitigation measures are required on the boundary road network to accommodate the full build-out of the development.
 8. We are aware that MTO has identified potential future interchange improvements to the existing interchange at Highway 401 and County Road 35, which include upgrading the interchange from a Parclo A-2 to a Parclo A-4 (or a variation thereof) and incorporating roadway geometry improvements. Further, we are aware that County Road 15 has been identified as a potential future Parclo A-4 interchange with Highway 401, similar to the potential future layout at Highway 401 and County Road 35. At this time, no EA study is available and future timing is unknown.
 9. Auxiliary left-turn lane requirements at the future site access and critical intersections will be analyzed using the MTO's "Design Supplement for the Geometric Design Guide for Canadian Roads". Similarly, traffic signal requirements at the site access and critical intersections will be analyzed using the warrants set out in the Ontario Traffic Manual (OTM) Book 12 "Traffic Signals".
 10. Sight distance availability at the proposed site access will be assessed based on the standards set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR, June 2017).

11. Other traffic safety components will be analyzed such as vehicle turning conflicts, access spacing and geometric requirements, internal site circulation and vehicle maneuverability, etc.
12. Minimum parking and loading requirements for the proposed development will be calculated based on sections 3.23 and 3.14 of the Township of South Stormont By-law No. 2011-100, respectively. These totals will be compared to the proposed supply to check for compliance.
13. Document all analysis and recommendations regarding the findings of the study to maintain acceptable operations of the boundary road network.

APPENDIX C

Municipal Excerpts

**THE CORPORATION OF
THE TOWNSHIP OF SOUTH STORMONT**

BY-LAW NO. 2011-100

December 14, 2011

Prepared by

J.L. RICHARDS & ASSOCIATES LIMITED
Consulting Engineers, Architects & Planners
864 Lady Ellen Place
Ottawa, Ontario
K1Z 5M2

JLR 22160

July 2021 Office Consolidation

Legend

Amendments to Zoning By-law No. 2011-100 are indicated as follows:

~~Text that is stroked out has been removed from this by-law.~~

Text that is highlighted in grey has been added to this by-law.

3.14 Loading Requirements

For every building or structure hereafter erected for a commercial or industrial use, involving the shipping, loading or unloading of persons, animals, wares, merchandise, goods or raw materials, there shall be provided and maintained on the lot occupied by the building or structure loading facilities or spaces in accordance with the following requirements:

- (a) Each loading space shall have a minimum vertical clearance of 4.5 metres and shall be at least 3.5 metres wide by 14 metres long;
- (b) The required loading spaces shall be provided on the lot occupied by the building or structure for which the spaces are required and such spaces shall not form part of any street or required parking area, and shall not be located within a required front yard or exterior side yard;
- (c) Access to loading spaces shall be by means of a lane at least 3.5 metres wide for one way traffic and 6 metres wide for two way traffic and located on the same lot. Access to loading spaces shall not pass through a Residential Zone;
- (d) The number of required loading spaces shall be based on net floor area of the building or structure as follows:

(i) Commercial

<u>Net Floor Area</u>	<u>Spaces Required</u>
Less than 200 m ²	None
Over 200 m ²	1 per 2000 m ² or part thereof

(ii) Industrial

<u>Net Floor Area</u>	<u>Spaces Required</u>
less than 200 m ²	0
200 - 500 m ²	1
500 -2000 m ²	2
Over 2000 m ²	3

- (e) The loading space requirements stated in (d) shall not apply to buildings or structures in existence as of the date of passing of this By-law so long as the floor area, as it existed at such date, is not increased. If an addition is made to the building or structure which increases the floor area, then additional loading spaces shall be provided as required above for such addition.

3.15 Lots Containing More Than One Use

- (c) where open storage areas abut a Residential Zone, the required setback of the open storage area shall be increased by 6 metres and must also be visually screened from any residential zone;
- (d) any areas used for open storage shall be in addition to any minimum off-street parking or loading areas required by this By-law; and
- (e) open storage shall not exceed a maximum height of 3 metres.

3.21 Organics Soils

Lands identified in the United Counties of Stormont, Dundas and Glengarry Official Plan on the Constraints Plan (B4) as Environmental Protection Lands (Constraints Overlay) - Organic Soils are subject to the following:

Development may be permitted in exceptional circumstances only where the Corporation receives a study that demonstrates that the hazard can be overcome using acceptable engineering techniques and where safe access can be provided.

3.22 Outdoor Commercial Patios

- (a) No outdoor commercial patio shall be located closer than 1.5 metres to any portion of a travelled street unless under an encroachment agreement;
- (b) No outdoor commercial patio shall be permitted to encroach upon any required parking space, loading zone or driving aisle, unless under an encroachment agreement;
- (c) No outdoor commercial patio shall be established in a yard which abuts lands zoned other than commercial or industrial; and
- (d) No part of a outdoor commercial patio shall be permitted on a sight triangle as defined in this By-law.

3.23 Parking and Storage of Vehicles

All parking spaces shall be usable in all seasons. The driveway and parking spaces shall be constructed of crushed stone, asphalt paving, concrete, paver stones, or similar materials and shall be maintained and treated so as to reduce dust, scattering of stones and similar undesirable effects on adjoining properties and shall incorporate drainage facilities that comply with the requirements of the Corporation.

(a) Residential Zones

- (i) Except as provided herein, no vehicles shall be parked or stored in a Residential Zone unless the vehicle is located within a garage, carport,

driveway, designed parking area or on a street as permitted by Municipal By-law;

BY-LAW
2019-095

(ii) No Residential Zone shall be used for the outdoor parking or storage of a ~~motor~~ vehicle unless such vehicle is used in operations incidental to the residential use of the lot on which it is parked or stored and bears a ~~motor~~ vehicle license plate or sticker which is currently within a year of latest validation date; and

(iii) Parking spaces for Single Detached, Semi-Detached, Duplex and in Residential Zones; Supplementary regulations:

- No more than fifty (50%) percent of the area of any required front yard shall be used or constructed as a driveway or parking space;
- No more than fifty (50%) percent of the lot frontage as defined by this By-law shall be used or constructed as a driveway or parking space;

BY-LAW
2018-079

(iv) Each required parking space shall be accessible at all times for parking a vehicle without the necessity of moving any other vehicle, except in any part of a driveway accessory to a Single Detached, Semi-Detached, Duplex, or Townhouse Dwelling, or private detached garage.

(b) Parking Space Dimensions

BY-LAW
2017-068

Each parking space, except for barrier free parking spaces, shall have a minimum width of ~~2.6~~ 2.75 metres and a minimum length of 5.5 metres. ~~Where parking spaces having access to a street that provide for the exclusive use of single detached, semi-detached or townhouse dwellings, every parking space shall be provided with unobstructed access to a street by a driveway, or aisle.~~

BY-LAW
2019-095

(c) Barrier Free Parking

Each barrier free parking space shall have a minimum width of 3.66 metres and a minimum length of 5.5 metres with a ~~6-6.7~~ metre aisle.

BY-LAW
2017-068

Every owner and/or operator of a public or private parking area on lands zoned Commercial, Industrial and Institutional shall provide not less than 2% of the total number of parking spaces for barrier free parking with a minimum of one space. Where the minimum barrier free parking requirements conflict with the Integrated Accessibility Standards under Accessibility for Ontarians with Disabilities Act, 2005, the higher requirement shall apply.

(d) Cumulative Standards

Unless permitted elsewhere in this By-law, where two or more uses are permitted in any one building or on any one lot, then the off-street parking requirements for each use shall be calculated as if each use is a separate use, and the total number of off-street parking spaces so calculated shall be provided, except in the case of a shopping centre.

(e) Addition to Existing Use

The parking space requirements shall not apply to any building in existence at the date of passing of this By-law so long as the gross floor area, as it existed at such date, is not increased and no change in use occurs. If an addition is made to the building or structure which increases the gross floor area, or a change in use occurs then parking spaces for the addition or area changed in use shall be provided.

(f) Access to Parking Spaces and Parking Areas

Parking Area for more than four vehicles; Supplementary regulations:

BY-LAW
2017-068

- (i) Ingress and egress directly to and from every parking space shall be by means of a driveway, lane or aisle having a width of at least 6.7 metres for two-way traffic.
- (ii) A driveway or lane which does not provide ingress and egress directly to a parking space, shall have a minimum width of 4 metres where designed for one-way vehicular circulation or 6 metres where designed for two-way vehicular circulation.

(g) Location

Except where permitted elsewhere in this By-law the required parking in a Residential Zone shall be provided on the same lot as the dwelling unit. In all other zones, parking shall be provided within 90 metres of the building it is intended to serve and no part of any parking area required for use other than Residential shall be permitted in a Residential Zone. Where required parking is not provided on the same lot, the lot or part of the lot where the parking is located shall be in the same ownership or be leased by a long term renewable agreement and the parking spaces shall be retained for the duration of the use.

BY-LAW
2017-068

(h) Accessory Buildings

~~A structure, not more than 5 metres in height and not more than 5 square metres in area may be erected in the parking area for the use of attendants in the area.~~

(h) Buffering

- (i) Where, in a yard in any zone, a required parking area providing more than four (4) parking spaces abuts a lot in a Residential Zone, then a continuous strip of landscaped open space a minimum width of 3 metres shall be provided along the abutting lot line;
- (ii) Where, in any yard in any zone, a required parking area providing more than four (4) parking spaces abuts a street, then a strip of landscaped open space a minimum width of 3 metres shall be provided along the lot line abutting the street and the landscaped strip shall be continuous except for aisles and driveways required for access to the parking area.

(i) Vehicle Parking Requirements

BY-LAW
2019-095

In any zone, the owner or occupant of any building or structure erected, enlarged or changed in use after the date of passing of this By-law shall provide and maintain for the sole use of the owner, occupants, or other persons entering upon or making use of the said premises from time to time, one or more off-street parking spaces in accordance with the following provisions:

BY-LAW
2019-095

Schedule for Parking Requirements

Use	Minimum Number of Required Parking Spaces
Apartment dwellings or townhouse	1.5 units per dwelling unit, 15% of which shall be reserved as visitor parking
Boarding House	0.5 spaces per guest room with a minimum of 2
Group Home	0.5 spaces per guest room with a minimum of 2
Single detached, semi-detached, duplex or street townhouse	Two (2) spaces per dwelling unit
Other Residential Uses	One (1) space per dwelling unit
Agricultural Use, Forestry Use	None
Automobile Body Shop, Automotive Repair Garage, Automobile Service Station, Automotive Store, Gasoline Bar	Three (3) spaces per service bay plus one (1) space per employee
Auditorium, Community Centre, Club, Non-Profit, Theatre	One (1) space for every four (4) seats, fixed or otherwise and where there are no seats one (1) space for every 10 square metres of assembly space
Building Supply Store, Farm Supply Establishment, Farm Equipment Sales and Service Facility, Lumber Yard, Equipment Rental Establishment – Domestic, Equipment Rental Establishment – Industrial, Equipment Sales Establishment, Equipment Service and Repair Establishment – Industrial	One (1) space for each 20 square metres of gross floor area

BY-LAW
2017-068

Cannabis Production and Processing

One (1) space per every 100 square metres of ~~gross~~ floor area

Clinic	Six (6) spaces per practitioner
Convenience Store	One (1) space per 18 square metres of gross floor area
Day Nursery – Licensed	One (1) space per employee and one (1) space per five (5) children
Farmer’s Market, Farm Produce Outlet, Garden Centre, Greenhouse (Commercial), Nursery	One (1) space per 20 square metres of gross floor area
General Business (other than those listed separately herein), Business or Professional Office, Back or Financial Office, Personal Service Establishment, Retail Store or Funeral Home	One (1) space per 20 square metres of gross floor area
Home-based Business, Home-based Industry	One (1) parking space per employee, in addition to the parking requirements of the dwelling
Hospital	One (1) space per bed
Industrial Establishment	One (1) parking space per 80 square meters of manufacturing floor area and associated office area or portion thereof plus one (1) parking space per 100 square metres of warehousing or storage floor area or portion thereof.

BY-LAW
2020-090

Library	One (1) space per 95 square metres of gross floor area
Mini-warehouse and Storage	One (1) space per 50 square metres of office / administration space, plus one (1) space per 1,000 square metres of floor area of storage buildings/units
Mini-warehouse and Storage, Transportation Terminal, Warehouse	One (1) space per 95 square metres of gross floor area plus one (1) space for every three (3) employees per shift
Nursing home	One (1) space for every six (6) patient beds plus one (1) space for every four (4) employees
Place of amusement	One (1) space for every four (4) persons that can be accommodated
Place of worship	One (1) space for every five (5) seats, fixed or otherwise
Restaurant, Restaurant – Drive-In, Bar	One (1) space for every four (4) seats of designated seating capacity and where no seats are provided one (1) space per 6 square metres of gross floor area
Restaurant – Take Out	One (1) space per 10 square metres of gross floor area
School – Elementary	Two (2) spaces per classroom
School – Secondary or Commercial	Four (4) spaces per classroom
Shopping Centre	One (1) space per 160 square metres of net floor area

BY-LAW
2015-050

Tourist Lodging Establishment

One (1) space per guest room or suite plus one (1) space for each four (4) persons that can be accommodated at any one time in a beverage room, dining room or meeting room

Veterinary Establishment, Kennel

One (1) parking space per 20 square metres of floor area

The greater of:

- Other non-residential uses permitted by this By-law
- (a) One (1) space per 25 square metres of floor area or portion thereof, or
 - (b) One (1) space for four (4) persons design capacity, or
 - (c) One (1) space per two (2) persons employed on the lot

BY-LAW
2019-095

k) **Requirements for Bicycle Parking**

- i) Bicycle Parking shall be provided in the RS3, CG, CH, CT, I, ML, MM, and MH zones at the following rates:

One bicycle rack for principle uses over 1,000 sq m floor area, plus one additional rack for every 30 standard parking spaces provided.

- ii) A bicycle parking space may be located in any yard.

3.24 Parts of Buildings or Structures Permitted Above Height Level

Where height limitations are set forth in this By-law, such limitations shall not apply to air conditioning systems, bridges, chimneys, communication towers, electrical supply facilities, elevator or stairway enclosure, enclosed mechanical and electrical equipment, flag poles, grain elevators, hydroelectric transition tower, lightening rods or lightening standards, ornamental dome or clocktower, place of worship spire or belfry or steeples, receiving and transmitting antenna and satellite dish, receiving station, silo, solar panel, ventilating fan or skylight, water tanks or water towers and windmill or wind turbine. Notwithstanding the foregoing, limitations prescribed by the Federal Ministry of Transport or practices recommended by the Ministry with respect to height limitations and appropriate lighting in the vicinity of airfields shall prevail.

3.25 Permitted Projections

For the purpose of this Section, a rear yard adjacent to a street, and/or an exterior side yard shall have the same requirements as a front yard.

BY-LAW
2017-068

Structure	Maximum Projection Into Required Yard
Belt courses, sills, cornices, eaves, gutters, chimneys, bay windows, pilasters, fireplaces, chimney boxes, or other ornamental structures structures	0.6 metres into any required front, rear or any side yard

7.3 Heavy Industrial (MH) Zone**(a) Permitted Uses:**

BY-LAW 2018-079

- bakery;
- cannabis production and processing;
- industrial use, class 2 industry and class 3 industry;
- transportation terminal;
- warehouse;
- accessory uses such as a cafeteria, an office.
- Ancillary railway facilities
- Asphalt batching plant
- Concrete batching plant
- Grain drying facility
- Greenhouse commercial
- Livestock sales outlet
- Railway yard
- Recycling deport
- Recycling yard
- Sawmill
- Transfer station
- Transportation depot
- workshop

(b) Zone Requirements:**(i) Development on private or partial services (municipal water or sanitary sewers):**

Lot Area (minimum)	1 ha	(2.5 acres)
Lot Frontage (minimum)	60 m	(196.85 ft.)
Yard Requirements (minimum)		
Front	12 m	(39.37 ft.)
Rear	12 m	(39.37 ft.)
Exterior Side	12 m	(39.37 ft.)
Interior Side	7.5 m	(24.61 ft.)
Building Height (maximum)	30 m	(98.43 ft.)
Accessory Building	12 m	(39.37 ft.)
Lot Coverage (maximum)	20%	

(ii) Development on full services (municipal water and sanitary sewers)

Lot Area (minimum)	1000 m ²	(5005.22 sq.ft.)
Lot Frontage (minimum)	20 m	(49.21 ft.)
Yard Requirements (minimum)		
Front	7.5 m	(24.61 ft.)
Rear	7.5 m	(24.61 ft.)
Exterior Side	7.5 m	(24.61 ft.)
Interior Side	3 m	(9.84 ft.)

Building Height (maximum)	30 m	(98.43 ft.)
Accessory Building	12 m	(39.37 ft.)
Lot Coverage (maximum)	40%	

- (c) If an industrial use is severed or separated through consent, plan of subdivision or through the lifting of part lot control, the zone requirements continue to apply to the original lot except that no minimum side yard requirement shall apply along the common lot line.

- (d) Special Exceptions:

MH-1

Notwithstanding the provisions of Section 7.3 (a) to the contrary, for the lands zoned MH-1, the following uses shall not be permitted:

Automobile Body Shop;
Contractor's Shop or Yard;
Fuel Depot, Bulk.

- (e) Holding Zones:

MH-1-h

Notwithstanding the provisions of Section 4.3 to the contrary, for the lands zoned MH-1-h, the holding (h) symbol will not be lifted until Municipal services are available to the site.

- (f) Temporary Zones:

APPENDIX D

Traffic Data



Turning Movement Count (7 . COUNTY RD 15 & COUNTY RD 2)

Start Time	N Approach COUNTY RD 15						E Approach COUNTY RD 2						S Approach COUNTY RD 15						W Approach COUNTY RD 2						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		
06:00:00	4	1	4	0	0	9	11	20	0	0	0	31	0	0	0	0	0	0	0	26	5	0	0	31	71	
06:15:00	3	0	4	0	0	7	12	21	1	0	0	34	0	0	0	0	0	0	0	62	2	0	0	64	105	
06:30:00	6	0	23	0	0	29	3	31	0	0	2	34	0	0	0	0	1	0	0	65	3	0	0	68	131	
06:45:00	11	0	17	0	0	28	13	35	0	0	2	48	1	0	0	0	1	1	1	57	3	0	0	61	138	445
07:00:00	9	0	14	0	0	23	10	44	0	0	0	54	0	0	1	0	0	1	0	64	1	0	0	65	143	517
07:15:00	13	0	18	0	0	31	13	33	0	0	1	46	0	0	0	0	0	0	0	68	5	0	0	73	150	562
07:30:00	11	0	20	0	0	31	5	26	0	0	1	31	0	0	0	0	0	0	1	115	3	0	0	119	181	612
07:45:00	11	0	20	0	0	31	11	37	0	0	0	48	0	0	0	0	0	0	0	95	3	0	0	98	177	651
08:00:00	12	0	18	0	0	30	10	33	0	0	0	43	0	1	0	0	0	1	0	82	6	0	0	88	162	670
08:15:00	9	0	16	0	0	25	11	40	0	0	1	51	0	0	0	0	0	0	0	85	2	0	0	87	163	683
08:30:00	13	0	10	0	0	23	10	37	0	0	0	47	0	0	0	0	0	0	0	83	6	0	0	89	159	661
08:45:00	8	0	14	0	0	22	20	47	0	0	0	67	0	1	0	0	0	1	1	79	6	0	0	86	176	660
09:00:00	18	1	14	0	0	33	12	45	0	0	0	57	0	0	0	0	0	0	0	72	5	0	0	77	167	665
09:15:00	10	0	11	0	0	21	10	48	0	0	2	58	0	1	0	0	2	1	0	65	12	0	0	77	157	659
09:30:00	9	0	9	0	0	18	8	53	1	0	0	62	1	0	0	0	0	1	1	82	4	0	0	87	168	668
09:45:00	13	0	16	0	0	29	13	33	0	0	2	46	0	0	0	0	2	0	0	76	3	0	1	79	154	646
BREAK																										
15:00:00	16	1	22	0	0	39	23	95	0	0	0	118	0	1	1	0	0	2	1	73	8	0	0	82	241	
15:15:00	8	0	11	0	0	19	20	100	0	0	0	120	0	0	1	0	0	1	0	86	14	0	0	100	240	
15:30:00	15	1	13	0	0	29	19	105	0	0	1	124	0	0	0	0	0	0	0	109	7	0	0	116	269	
15:45:00	16	3	22	0	0	41	27	92	0	0	1	119	1	2	0	0	0	3	0	101	9	0	0	110	273	1023
16:00:00	22	1	14	0	0	37	28	100	2	0	0	130	2	1	1	0	0	4	1	86	3	0	0	90	261	1043
16:15:00	25	0	20	0	0	45	27	131	0	0	0	158	2	0	0	0	0	2	0	88	11	0	0	99	304	1107
16:30:00	15	0	18	0	0	33	39	110	0	0	0	149	0	0	1	0	0	1	1	97	13	0	0	111	294	1132
16:45:00	21	1	10	0	0	32	27	105	0	0	0	132	0	0	0	0	0	0	0	72	11	0	0	83	247	1106
17:00:00	18	0	12	0	0	30	45	146	0	0	0	191	1	0	1	0	0	2	1	63	8	0	0	72	295	1140
17:15:00	16	0	12	0	0	28	19	100	0	0	2	119	0	0	0	0	0	0	0	86	6	0	0	92	239	1075
17:30:00	10	0	9	0	0	19	20	87	0	0	0	107	0	0	0	0	0	0	1	73	5	0	0	79	205	986
17:45:00	18	0	14	0	0	32	17	81	0	0	0	98	1	1	0	0	0	2	0	56	3	0	0	59	191	930
18:00:00	16	0	9	0	0	25	25	82	0	0	0	107	0	1	0	0	1	1	1	48	4	0	0	53	186	821
18:15:00	10	0	8	0	0	18	18	69	0	0	0	87	0	0	0	0	0	0	0	70	3	0	0	73	178	760
18:30:00	14	0	13	0	0	27	10	54	1	0	0	65	0	0	0	0	0	0	0	72	6	0	0	78	170	725
18:45:00	8	0	7	0	0	15	10	50	0	0	0	60	0	1	1	0	0	2	0	43	4	0	0	47	124	658
Grand Total	408	9	442	0	0	859	546	2090	5	0	15	2641	9	10	7	0	7	26	10	2399	184	0	1	2593	6119	-
Approach%	47.5%	1%	51.5%	0%		-	20.7%	79.1%	0.2%	0%		-	34.6%	38.5%	26.9%	0%		-	0.4%	92.5%	7.1%	0%		-	-	-
Totals %	6.7%	0.1%	7.2%	0%		14%	8.9%	34.2%	0.1%	0%		43.2%	0.1%	0.2%	0.1%	0%		0.4%	0.2%	39.2%	3%	0%		42.4%	-	-
Heavy	22	0	36	0		-	43	42	0	0		-	0	0	0	0		-	0	48	8	0		-	-	-
Heavy %	5.4%	0%	8.1%	0%		-	7.9%	2%	0%	0%		-	0%	0%	0%	0%		-	0%	2%	4.3%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (13.63 °C)

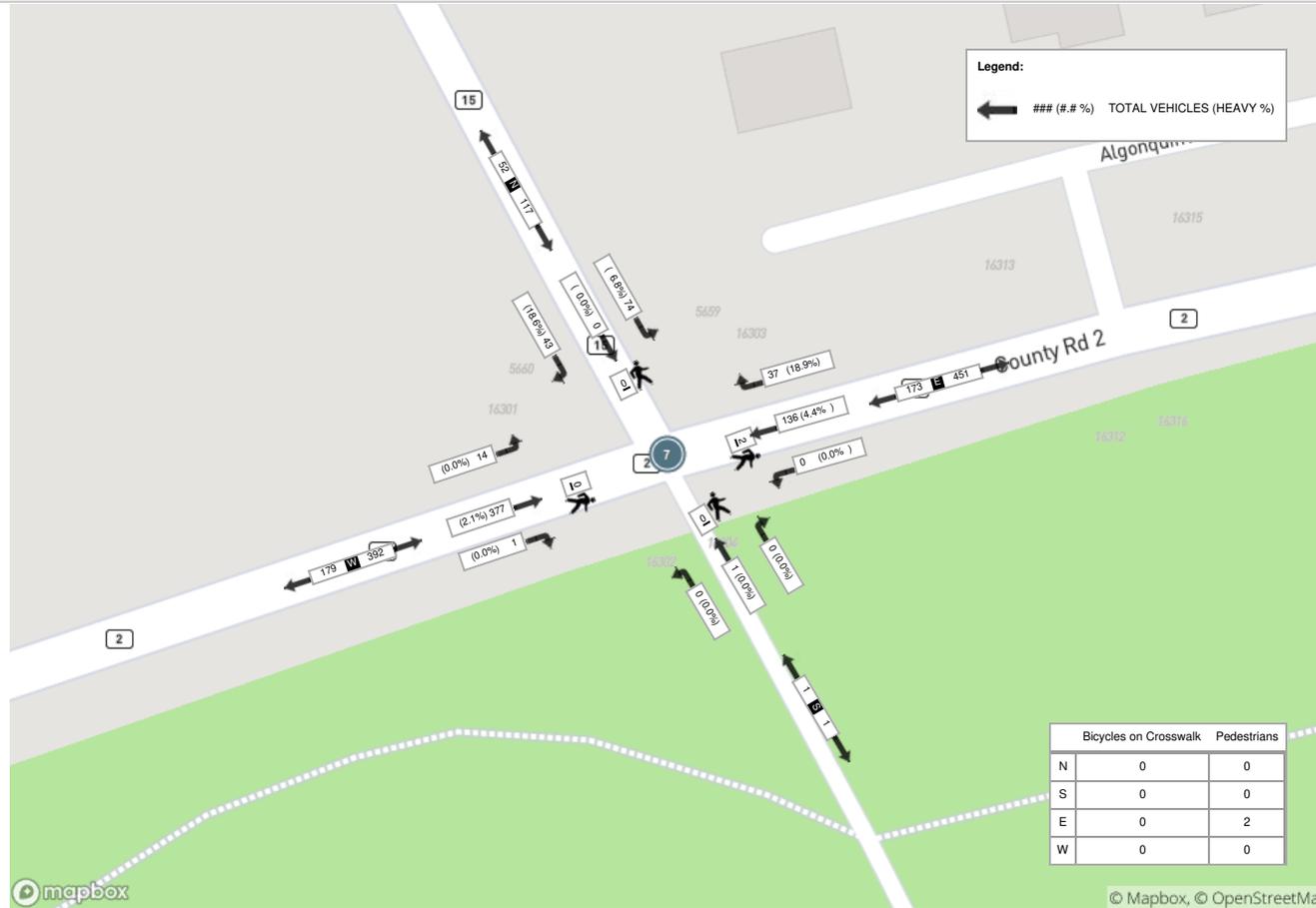
Start Time	N Approach COUNTY RD 15						E Approach COUNTY RD 2						S Approach COUNTY RD 15						W Approach COUNTY RD 2						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:30:00	11	0	20	0	0	31	5	26	0	0	1	31	0	0	0	0	0	0	1	115	3	0	0	119	181
07:45:00	11	0	20	0	0	31	11	37	0	0	0	48	0	0	0	0	0	0	0	95	3	0	0	98	177
08:00:00	12	0	18	0	0	30	10	33	0	0	0	43	0	1	0	0	0	1	0	82	6	0	0	88	162
08:15:00	9	0	16	0	0	25	11	40	0	0	1	51	0	0	0	0	0	0	0	85	2	0	0	87	163
Grand Total	43	0	74	0	0	117	37	136	0	0	2	173	0	1	0	0	0	1	1	377	14	0	0	392	683
Approach%	36.8%	0%	63.2%	0%	-	-	21.4%	78.6%	0%	0%	-	-	0%	100%	0%	0%	-	-	0.3%	96.2%	3.6%	0%	-	-	-
Totals %	6.3%	0%	10.8%	0%	17.1%	17.1%	5.4%	19.9%	0%	0%	25.3%	25.3%	0%	0.1%	0%	0%	0.1%	0.1%	0.1%	55.2%	2%	0%	57.4%	57.4%	-
PHF	0.9	0	0.93	0	0.94	0.94	0.84	0.85	0	0	0.85	0.85	0	0.25	0	0	0.25	0.25	0.25	0.82	0.58	0	0.82	0.82	-
Heavy	8	0	5	0	13	13	7	6	0	0	13	13	0	0	0	0	0	0	0	8	0	0	8	8	-
Heavy %	18.6%	0%	6.8%	0%	11.1%	11.1%	18.9%	4.4%	0%	0%	7.5%	7.5%	0%	0%	0%	0%	0%	0%	0%	2.1%	0%	0%	2%	2%	-
Lights	35	0	69	0	104	104	30	130	0	0	160	160	0	1	0	0	1	1	1	368	14	0	383	383	-
Lights %	81.4%	0%	93.2%	0%	88.9%	88.9%	81.1%	95.6%	0%	0%	92.5%	92.5%	0%	100%	0%	0%	100%	100%	100%	97.6%	100%	0%	97.7%	97.7%	-
Single-Unit Trucks	5	0	1	0	6	6	3	3	0	0	6	6	0	0	0	0	0	0	0	4	0	0	4	4	-
Single-Unit Trucks %	11.6%	0%	1.4%	0%	5.1%	5.1%	8.1%	2.2%	0%	0%	3.5%	3.5%	0%	0%	0%	0%	0%	0%	0%	1.1%	0%	0%	1%	1%	-
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Articulated Trucks	3	0	4	0	7	7	4	3	0	0	7	7	0	0	0	0	0	0	0	4	0	0	4	4	-
Articulated Trucks %	7%	0%	5.4%	0%	6%	6%	10.8%	2.2%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	1.1%	0%	0%	1%	1%	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	0.3%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians %	-	-	-	-	0%	-	-	-	-	-	100%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk %	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



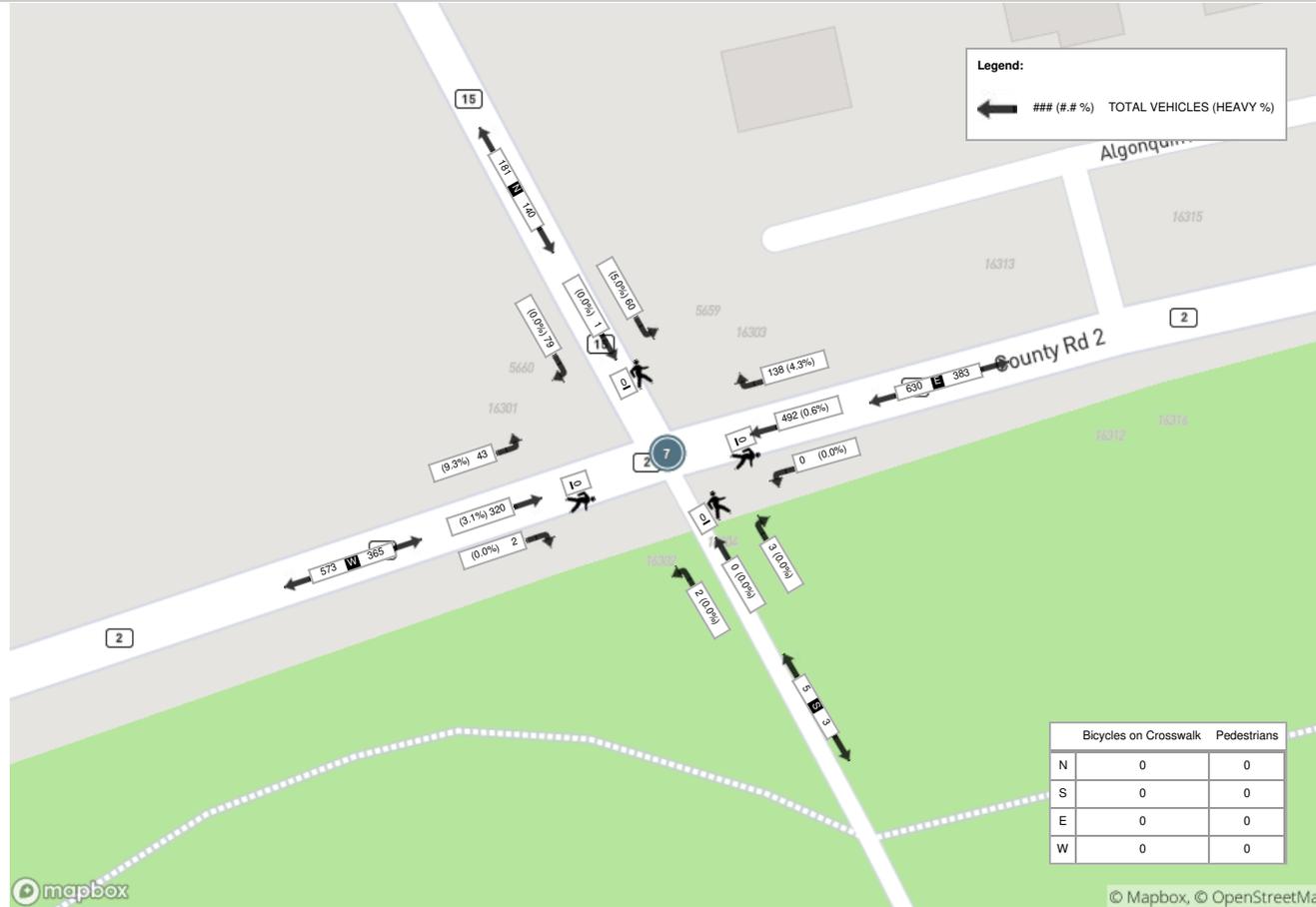
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (15.37 °C)

Start Time	N Approach COUNTY RD 15						E Approach COUNTY RD 2						S Approach COUNTY RD 15						W Approach COUNTY RD 2						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	
16:15:00	25	0	20	0	0	45	27	131	0	0	0	158	2	0	0	0	0	2	0	88	11	0	0	99	304
16:30:00	15	0	18	0	0	33	39	110	0	0	0	149	0	0	1	0	0	1	1	97	13	0	0	111	294
16:45:00	21	1	10	0	0	32	27	105	0	0	0	132	0	0	0	0	0	0	0	72	11	0	0	83	247
17:00:00	18	0	12	0	0	30	45	146	0	0	0	191	1	0	1	0	0	2	1	63	8	0	0	72	295
Grand Total	79	1	60	0	0	140	138	492	0	0	0	630	3	0	2	0	0	5	2	320	43	0	0	365	1140
Approach%	56.4%	0.7%	42.9%	0%		-	21.9%	78.1%	0%	0%		-	60%	0%	40%	0%		-	0.5%	87.7%	11.8%	0%		-	-
Totals %	6.9%	0.1%	5.3%	0%		12.3%	12.1%	43.2%	0%	0%		55.3%	0.3%	0%	0.2%	0%		0.4%	0.2%	28.1%	3.8%	0%		32%	-
PHF	0.79	0.25	0.75	0		0.78	0.77	0.84	0	0		0.82	0.38	0	0.5	0		0.63	0.5	0.82	0.83	0		0.82	-
Heavy	0	0	3	0		3	6	3	0	0		9	0	0	0	0		0	0	10	4	0		14	-
Heavy %	0%	0%	5%	0%		2.1%	4.3%	0.6%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	3.1%	9.3%	0%		3.8%	-
Lights	75	1	57	0		133	132	489	0	0		621	3	0	2	0		5	2	310	39	0		351	-
Lights %	94.9%	100%	95%	0%		95%	95.7%	99.4%	0%	0%		98.6%	100%	0%	100%	0%		100%	100%	96.9%	90.7%	0%		96.2%	-
Single-Unit Trucks	0	0	3	0		3	5	3	0	0		8	0	0	0	0		0	0	8	3	0		11	-
Single-Unit Trucks %	0%	0%	5%	0%		2.1%	3.6%	0.6%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	2.5%	7%	0%		3%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	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	1	0	0	0		1	0	0	0	0		0	0	2	1	0		3	-
Articulated Trucks %	0%	0%	0%	0%		0%	0.7%	0%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.6%	2.3%	0%		0.8%	-
Bicycles on Road	4	0	0	0		4	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	5.1%	0%	0%	0%		2.9%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (13.63 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (15.37 °C)





Turning Movement Count (4 . COUNTY RD 15 (AVONMORE RD) & COUNTY RD 29)

Start Time	N Approach COUNTY RD 15 (AVONMORE RD)						E Approach PRIEUR RD					S Approach COUNTY RD 15 (AVONMORE RD)						W Approach COUNTY RD 29					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
06:00:00	5	8	0	0	0	13	0	0	0	0	0	0	0	9	0	0	0	9	0	0	5	0	0	5	27	
06:15:00	6	6	0	0	0	12	0	0	0	0	0	0	0	6	1	0	0	7	2	0	5	0	0	7	26	
06:30:00	7	14	0	0	0	21	0	2	0	0	0	2	0	3	1	0	0	4	3	0	2	0	0	5	32	
06:45:00	5	17	0	0	0	22	0	0	0	0	0	0	0	8	0	0	0	8	2	0	6	0	0	8	38	123
07:00:00	4	11	0	0	0	15	0	0	0	0	0	0	0	7	2	0	0	9	2	0	8	0	0	10	34	130
07:15:00	2	15	0	0	0	17	0	0	1	0	0	1	0	8	2	0	0	10	1	0	9	0	0	10	38	142
07:30:00	7	21	0	0	0	28	0	0	0	0	0	0	0	12	2	0	0	14	0	0	9	0	0	9	51	161
07:45:00	7	22	0	0	0	29	0	0	0	0	0	0	0	4	0	0	0	4	3	0	7	0	0	10	43	166
08:00:00	2	20	0	0	0	22	0	0	0	0	0	0	0	4	3	0	0	7	0	0	3	0	0	3	32	164
08:15:00	5	22	0	0	0	27	0	0	0	0	0	0	0	8	3	0	0	11	1	0	2	0	0	3	41	167
08:30:00	2	11	0	0	0	13	0	0	0	0	0	0	0	6	0	0	0	6	2	0	4	0	0	6	25	141
08:45:00	4	17	0	0	0	21	0	0	0	0	0	0	0	15	0	0	0	15	1	0	4	0	0	5	41	139
09:00:00	5	13	0	0	0	18	0	0	0	0	0	0	0	8	2	0	0	10	1	0	4	0	0	5	33	140
09:15:00	4	13	0	0	0	17	0	0	0	0	0	0	0	11	2	0	0	13	2	0	2	0	0	4	34	133
09:30:00	3	10	0	0	0	13	0	0	0	0	0	0	0	7	0	0	0	7	2	0	7	0	0	9	29	137
09:45:00	5	19	0	0	0	24	0	0	0	0	0	0	0	14	0	0	0	14	0	0	5	1	0	6	44	140
BREAK																										
15:00:00	6	18	0	0	0	24	0	0	0	0	0	0	0	18	4	0	0	22	2	0	7	0	0	9	55	
15:15:00	3	8	0	0	0	11	0	0	0	0	0	0	0	12	1	0	0	13	4	0	9	0	0	13	37	
15:30:00	4	19	0	0	0	23	0	0	0	0	0	0	0	16	2	0	0	18	3	0	6	0	0	9	50	
15:45:00	3	19	0	0	1	22	0	0	1	0	2	1	1	20	4	0	0	25	4	0	9	0	0	13	61	203
16:00:00	5	17	0	1	0	23	1	0	0	0	0	1	0	29	4	0	0	33	2	0	9	0	0	11	68	216
16:15:00	2	20	0	0	0	22	0	0	1	0	0	1	0	18	3	0	0	21	3	0	6	0	0	9	53	232
16:30:00	6	20	0	0	0	26	0	0	0	0	0	0	0	22	1	1	0	24	2	0	7	0	0	9	59	241
16:45:00	7	16	0	0	0	23	0	0	1	0	0	1	0	28	1	0	0	29	4	0	5	0	0	9	62	242
17:00:00	5	14	0	0	0	19	0	0	0	0	0	0	0	36	6	0	0	42	2	1	13	0	0	16	77	251
17:15:00	3	16	0	0	0	19	0	0	1	0	0	1	0	17	3	0	0	20	3	0	7	0	0	10	50	248
17:30:00	5	12	0	0	0	17	0	0	0	0	0	0	0	11	2	0	0	13	1	0	13	0	0	14	44	233
17:45:00	5	11	0	0	0	16	0	1	0	0	0	1	0	11	4	0	0	15	2	0	6	0	0	8	40	211
18:00:00	2	12	0	0	0	14	0	0	1	0	0	1	0	15	2	0	0	17	3	0	7	0	0	10	42	176
18:15:00	5	14	0	0	0	19	0	0	0	0	0	0	0	7	5	0	0	12	1	0	4	0	0	5	36	162
18:30:00	1	11	0	0	0	12	0	0	0	0	0	0	0	10	2	0	0	12	3	0	1	0	0	4	28	146
18:45:00	4	8	0	0	0	12	0	0	0	0	0	0	0	6	3	0	0	9	1	0	5	0	0	6	27	133
Grand Total	139	474	0	1	1	614	1	3	6	0	2	10	1	406	65	1	0	473	62	1	196	1	0	260	1357	-
Approach%	22.6%	77.2%	0%	0.2%	-	-	10%	30%	60%	0%	-	-	0.2%	85.8%	13.7%	0.2%	-	23.8%	0.4%	75.4%	0.4%	-	-	-	-	-
Totals %	10.2%	34.9%	0%	0.1%	45.2%	0.1%	0.2%	0.4%	0%	0.7%	0.1%	0.1%	29.9%	4.8%	0.1%	34.9%	4.6%	0.1%	14.4%	0.1%	19.2%	-	-	-	-	-
Heavy	25	52	0	0	-	-	0	0	1	0	-	-	0	46	2	0	-	7	0	32	0	-	-	-	-	-
Heavy %	18%	11%	0%	0%	-	-	0%	0%	16.7%	0%	-	-	0%	11.3%	3.1%	0%	-	11.3%	0%	16.3%	0%	-	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (13.63 °C)

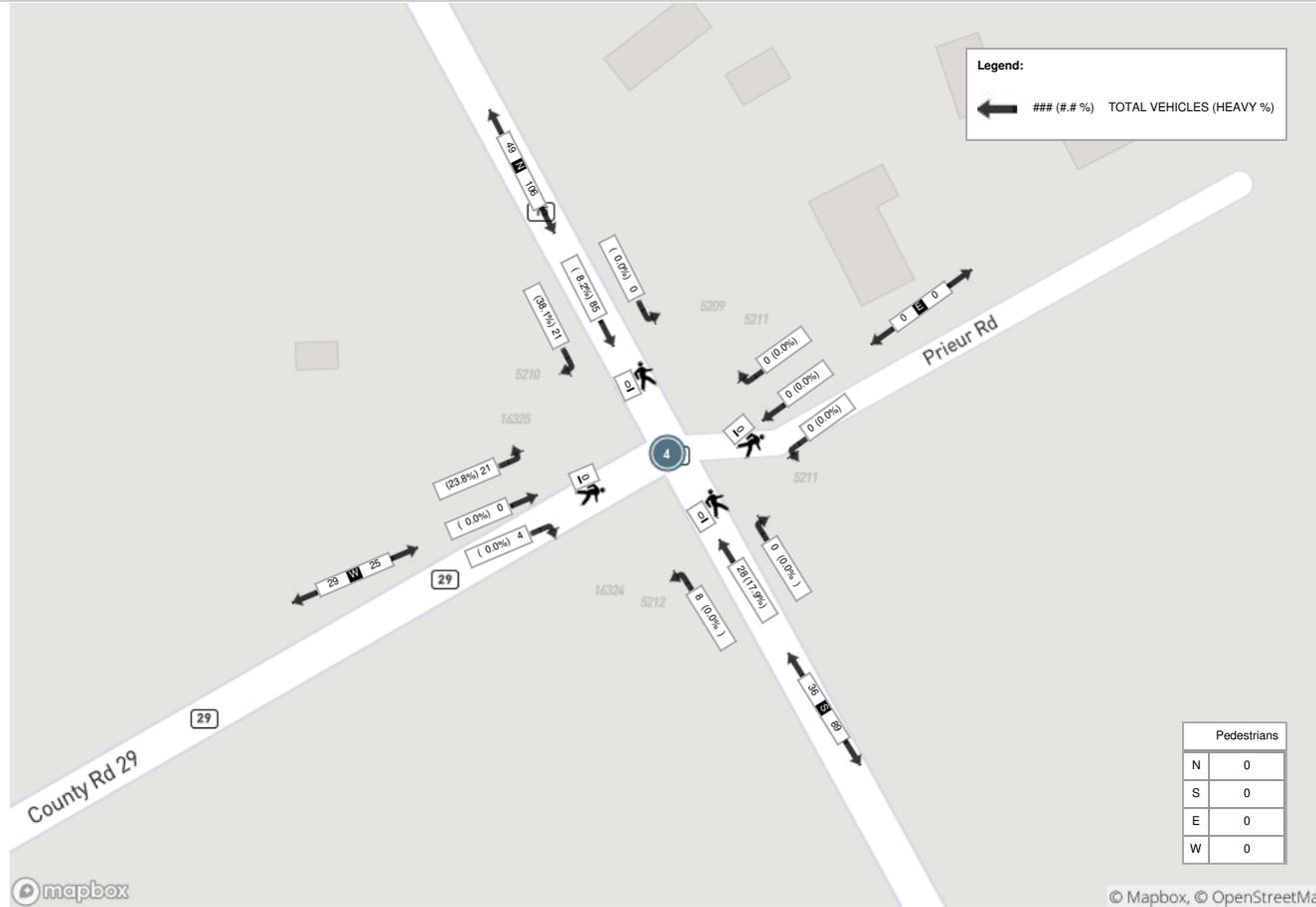
Start Time	N Approach COUNTY RD 15 (AVONMORE RD)						E Approach PRIEUR RD						S Approach COUNTY RD 15 (AVONMORE RD)						W Approach COUNTY RD 29						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:30:00	7	21	0	0	0	28	0	0	0	0	0	0	0	12	2	0	0	14	0	0	9	0	0	9	51
07:45:00	7	22	0	0	0	29	0	0	0	0	0	0	0	4	0	0	0	4	3	0	7	0	0	10	43
08:00:00	2	20	0	0	0	22	0	0	0	0	0	0	0	4	3	0	0	7	0	0	3	0	0	3	32
08:15:00	5	22	0	0	0	27	0	0	0	0	0	0	0	8	3	0	0	11	1	0	2	0	0	3	41
Grand Total	21	85	0	0	0	106	0	0	0	0	0	0	0	28	8	0	0	36	4	0	21	0	0	25	167
Approach%	19.8%	80.2%	0%	0%		-	0%	0%	0%	0%	-	0%	77.8%	22.2%	0%		-	16%	0%	84%	0%		-	-	
Totals %	12.6%	50.9%	0%	0%		63.5%	0%	0%	0%	0%	0%	0%	16.8%	4.8%	0%		21.6%	2.4%	0%	12.6%	0%		15%	-	
PHF	0.75	0.97	0	0		0.91	0	0	0	0	0	0	0.58	0.67	0		0.64	0.33	0	0.58	0		0.63	-	
Heavy	8	7	0	0		15	0	0	0	0	0	0	5	0	0		5	0	0	5	0		5	-	
Heavy %	38.1%	8.2%	0%	0%		14.2%	0%	0%	0%	0%	0%	0%	17.9%	0%	0%		13.9%	0%	0%	23.8%	0%		20%	-	
Lights	13	78	0	0		91	0	0	0	0	0	0	23	8	0		31	4	0	16	0		20	-	
Lights %	61.9%	91.8%	0%	0%		85.8%	0%	0%	0%	0%	0%	0%	82.1%	100%	0%		86.1%	100%	0%	76.2%	0%		80%	-	
Single-Unit Trucks	4	4	0	0		8	0	0	0	0	0	0	2	0	0		2	0	0	1	0		1	-	
Single-Unit Trucks %	19%	4.7%	0%	0%		7.5%	0%	0%	0%	0%	0%	0%	7.1%	0%	0%		5.6%	0%	0%	4.8%	0%		4%	-	
Buses	0	0	0	0		0	0	0	0	0	0	0	0	0	0		0	0	0	0	0		0	-	
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-	
Articulated Trucks	4	3	0	0		7	0	0	0	0	0	0	3	0	0		3	0	0	4	0		4	-	
Articulated Trucks %	19%	3.5%	0%	0%		6.6%	0%	0%	0%	0%	0%	0%	10.7%	0%	0%		8.3%	0%	0%	19%	0%		16%	-	
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%	-	
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	0	-	-	-	
Pedestrians%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	



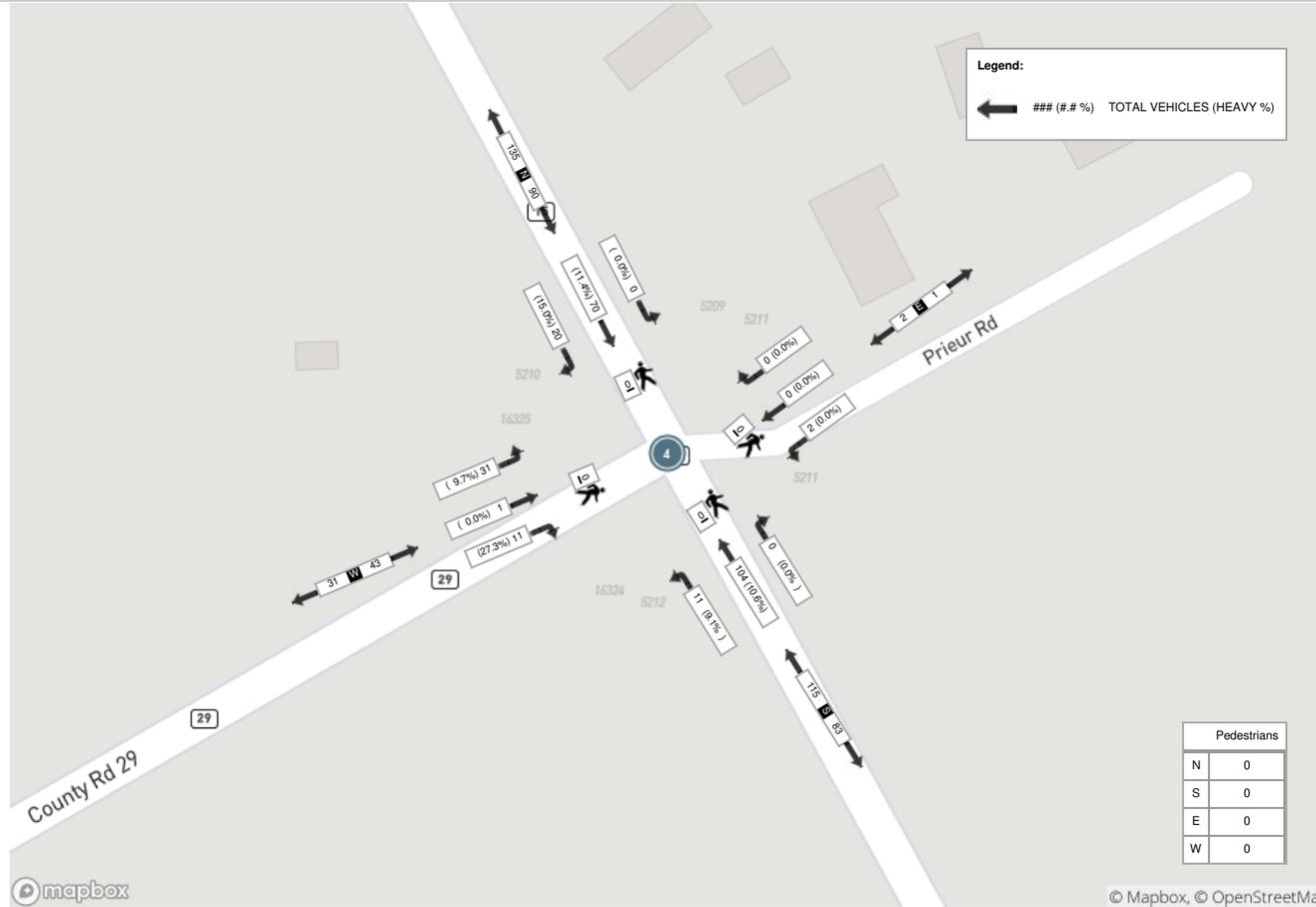
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (15.37 °C)

Start Time	N Approach COUNTY RD 15 (AVONMORE RD)						E Approach PRIEUR RD						S Approach COUNTY RD 15 (AVONMORE RD)						W Approach COUNTY RD 29						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		
16:15:00	2	20	0	0	0	22	0	0	1	0	0	1	0	18	3	0	0	21	3	0	6	0	0	9	53	
16:30:00	6	20	0	0	0	26	0	0	0	0	0	0	0	22	1	1	0	24	2	0	7	0	0	9	59	
16:45:00	7	16	0	0	0	23	0	0	1	0	0	1	0	28	1	0	0	29	4	0	5	0	0	9	62	
17:00:00	5	14	0	0	0	19	0	0	0	0	0	0	0	36	6	0	0	42	2	1	13	0	0	16	77	
Grand Total	20	70	0	0	0	90	0	0	2	0	0	2	0	104	11	1	0	116	11	1	31	0	0	43	251	
Approach%	22.2%	77.8%	0%	0%	-	-	0%	0%	100%	0%	-	0%	89.7%	9.5%	0.9%	-	-	25.6%	2.3%	72.1%	0%	-	-	-	-	
Totals %	8%	27.9%	0%	0%	35.9%	35.9%	0%	0%	0.8%	0%	0.8%	0%	41.4%	4.4%	0.4%	46.2%	46.2%	4.4%	0.4%	12.4%	0%	17.1%	17.1%	-	-	
PHF	0.71	0.88	0	0	0.87	0.87	0	0	0.5	0	0.5	0	0.72	0.46	0.25	0.69	0.69	0.25	0.6	0	0.67	0.67	-	-	-	
Heavy	3	8	0	0	11	11	0	0	0	0	0	0	11	1	0	12	12	3	0	3	0	6	6	-	-	
Heavy %	15%	11.4%	0%	0%	12.2%	12.2%	0%	0%	0%	0%	0%	0%	10.6%	9.1%	0%	10.3%	10.3%	27.3%	0%	9.7%	0%	14%	14%	-	-	
Lights	17	61	0	0	78	78	0	0	2	0	2	0	93	10	1	104	104	8	1	28	0	37	37	-	-	
Lights %	85%	87.1%	0%	0%	86.7%	86.7%	0%	0%	100%	0%	100%	0%	89.4%	90.9%	100%	89.7%	89.7%	72.7%	100%	90.3%	0%	86%	86%	-	-	
Single-Unit Trucks	0	7	0	0	7	7	0	0	0	0	0	0	9	1	0	10	10	2	0	2	0	4	4	-	-	
Single-Unit Trucks %	0%	10%	0%	0%	7.8%	7.8%	0%	0%	0%	0%	0%	0%	8.7%	9.1%	0%	8.6%	8.6%	18.2%	0%	6.5%	0%	9.3%	9.3%	-	-	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-
Articulated Trucks	3	1	0	0	4	4	0	0	0	0	0	0	2	0	0	2	2	1	0	1	0	2	2	-	-	
Articulated Trucks %	15%	1.4%	0%	0%	4.4%	4.4%	0%	0%	0%	0%	0%	0%	1.9%	0%	0%	1.7%	1.7%	9.1%	0%	3.2%	0%	4.7%	4.7%	-	-	
Bicycles on Road	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Bicycles on Road %	0%	1.4%	0%	0%	1.1%	1.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (13.63 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (15.37 °C)





Turning Movement Count (1 . COUNTY RD 35 & COUNTY RD 29)

Start Time	N Approach COUNTY RD 35						E Approach COUNTY RD 29						S Approach COUNTY RD 35						W Approach COUNTY RD 29						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			
06:00:00	0	1	0	0	0	1	0	0	5	0	0	5	4	0	0	0	0	4	0	0	0	0	0	0	10		
06:15:00	0	4	0	0	0	4	1	0	6	0	0	7	7	1	2	0	0	10	2	0	0	0	0	2	23		
06:30:00	0	7	1	0	0	8	0	2	6	0	0	8	4	3	1	0	0	8	0	0	0	0	0	0	24		
06:45:00	0	8	0	0	0	8	0	0	7	0	0	7	9	1	2	0	0	12	0	0	0	0	0	0	27	84	
07:00:00	0	3	0	0	0	3	0	0	7	0	0	7	9	4	0	0	0	13	3	0	0	0	0	3	26	100	
07:15:00	0	4	2	0	0	6	1	0	3	0	0	4	10	4	0	0	0	14	2	0	0	0	0	2	26	103	
07:30:00	0	7	0	0	0	7	0	0	8	0	0	8	7	0	0	0	0	7	0	0	0	0	0	0	22	101	
07:45:00	0	3	0	0	0	3	0	0	8	0	0	8	8	4	1	0	0	13	0	0	0	0	0	0	24	98	
08:00:00	0	5	0	0	0	5	0	0	5	0	0	5	3	2	0	1	0	6	0	0	0	0	0	0	16	88	
08:15:00	0	2	0	0	0	2	1	0	7	1	0	9	3	1	0	1	0	5	0	0	0	0	0	0	16	78	
08:30:00	0	4	0	0	0	4	0	0	2	0	0	2	8	2	0	0	0	10	0	0	0	0	0	0	16	72	
08:45:00	0	4	0	0	0	4	0	0	4	0	0	4	1	6	1	0	0	8	0	0	0	0	0	0	16	64	
09:00:00	0	5	1	0	0	6	0	0	7	0	0	7	4	3	1	0	0	8	0	0	0	0	0	0	21	69	
09:15:00	0	2	1	0	0	3	0	0	7	0	0	7	2	3	1	0	0	6	0	0	0	0	0	0	16	69	
09:30:00	0	2	1	0	0	3	0	0	4	0	0	4	7	2	0	0	0	9	0	1	0	0	0	1	17	70	
09:45:00	0	1	0	0	0	1	0	0	5	0	0	5	5	2	0	0	0	7	0	0	0	0	0	0	13	67	
BREAK																											
15:00:00	0	0	0	0	0	0	2	0	6	0	0	8	4	6	1	0	0	11	2	0	0	0	0	2	21		
15:15:00	0	1	1	0	0	2	0	0	7	0	0	7	15	7	1	0	0	23	0	0	0	0	0	0	32		
15:30:00	0	1	1	0	0	2	0	0	6	0	0	6	7	6	0	0	0	13	0	0	0	0	0	0	21		
15:45:00	0	3	0	0	0	3	0	0	4	0	0	4	11	4	0	0	0	15	3	0	0	0	0	3	25	99	
16:00:00	0	2	0	0	0	2	0	0	6	0	0	6	8	4	0	0	0	12	2	0	0	0	0	2	22	100	
16:15:00	0	0	0	0	0	0	0	0	6	0	0	6	6	8	2	0	0	16	0	1	1	0	0	2	24	92	
16:30:00	0	1	1	0	0	2	1	0	5	0	1	6	9	7	0	0	0	16	2	0	0	0	1	2	26	97	
16:45:00	0	4	0	0	0	4	2	0	8	0	0	10	6	11	0	0	0	17	0	0	0	0	0	0	31	103	
17:00:00	0	5	2	0	0	7	1	0	11	0	0	12	14	12	0	1	0	27	0	0	0	0	0	0	46	127	
17:15:00	0	2	1	0	0	3	2	0	4	0	0	6	9	2	0	1	0	12	2	0	0	0	0	2	23	126	
17:30:00	0	5	0	0	0	5	0	0	6	0	0	6	13	4	0	0	0	17	0	0	0	0	0	0	28	128	
17:45:00	0	4	1	0	0	5	0	0	8	0	0	8	9	6	0	0	0	15	0	0	0	0	0	0	28	125	
18:00:00	0	4	1	0	0	5	0	0	2	0	0	2	5	3	0	0	0	8	0	0	0	0	0	0	15	94	
18:15:00	0	5	0	0	0	5	0	0	6	0	0	6	6	2	0	0	0	8	0	0	0	0	0	0	19	90	
18:30:00	0	2	0	0	0	2	0	0	3	0	0	3	5	2	0	1	0	8	0	0	0	0	0	0	13	75	
18:45:00	0	2	0	0	0	2	1	0	1	0	0	2	6	1	0	0	0	7	0	0	0	0	0	0	11	58	
Grand Total	0	103	14	0	0	117	12	2	180	1	1	195	224	123	13	5	0	365	18	2	1	0	1	21	698	-	
Approach%	0%	88%	12%	0%	-	-	6.2%	1%	92.3%	0.5%	-	-	61.4%	33.7%	3.6%	1.4%	-	85.7%	9.5%	4.8%	0%	-	-	-	-	-	
Totals %	0%	14.8%	2%	0%	16.8%	1.7%	0.3%	25.8%	0.1%	27.9%	32.1%	17.6%	1.9%	0.7%	52.3%	2.6%	0.3%	0.1%	0%	3%	-	-	-	-	-	-	
Heavy	0	0	1	0	-	-	0	0	28	0	-	-	36	0	3	1	-	1	1	0	0	-	-	-	-	-	
Heavy %	0%	0%	7.1%	0%	-	-	0%	0%	15.6%	0%	-	-	16.1%	0%	23.1%	20%	-	5.6%	50%	0%	0%	-	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 06:30 AM - 07:30 AM Weather: Overcast Clouds (13.63 °C)

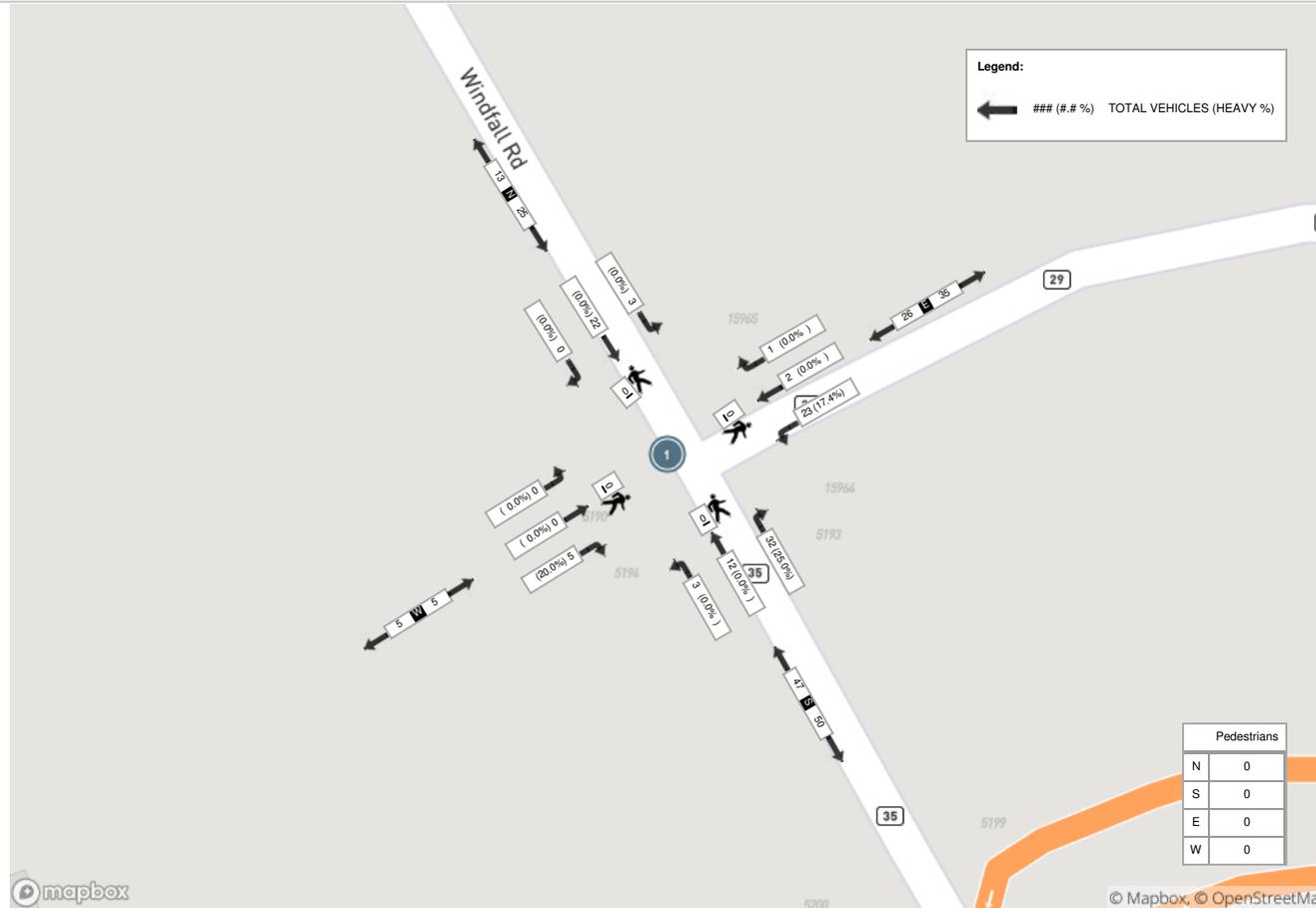
Start Time	N Approach COUNTY RD 35						E Approach COUNTY RD 29						S Approach COUNTY RD 35						W Approach COUNTY RD 29						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
06:30:00	0	7	1	0	0	8	0	2	6	0	0	8	4	3	1	0	0	8	0	0	0	0	0	0	24
06:45:00	0	8	0	0	0	8	0	0	7	0	0	7	9	1	2	0	0	12	0	0	0	0	0	0	27
07:00:00	0	3	0	0	0	3	0	0	7	0	0	7	9	4	0	0	0	13	3	0	0	0	0	3	26
07:15:00	0	4	2	0	0	6	1	0	3	0	0	4	10	4	0	0	0	14	2	0	0	0	0	2	26
Grand Total	0	22	3	0	0	25	1	2	23	0	0	26	32	12	3	0	0	47	5	0	0	0	0	5	103
Approach%	0%	88%	12%	0%		-	3.8%	7.7%	88.5%	0%		-	68.1%	25.5%	6.4%	0%		-	100%	0%	0%	0%		-	-
Totals %	0%	21.4%	2.9%	0%		24.3%	1%	1.9%	22.3%	0%		25.2%	31.1%	11.7%	2.9%	0%		45.6%	4.9%	0%	0%	0%		4.9%	-
PHF	0	0.69	0.38	0		0.78	0.25	0.25	0.82	0		0.81	0.8	0.75	0.38	0		0.84	0.42	0	0	0		0.42	-
Heavy	0	0	0	0		0	0	0	4	0		4	8	0	0	0		8	1	0	0	0		1	-
Heavy %	0%	0%	0%	0%		0%	0%	0%	17.4%	0%		15.4%	25%	0%	0%	0%		17%	20%	0%	0%	0%		20%	-
Lights	0	22	3	0		25	1	2	19	0		22	23	12	3	0		38	4	0	0	0		4	-
Lights %	0%	100%	100%	0%		100%	100%	100%	82.6%	0%		84.6%	71.9%	100%	100%	0%		80.9%	80%	0%	0%	0%		80%	-
Single-Unit Trucks	0	0	0	0		0	0	0	4	0		4	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	17.4%	0%		15.4%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	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	8	0	0	0		8	1	0	0	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	25%	0%	0%	0%		17%	20%	0%	0%	0%		20%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	3.1%	0%	0%	0%		2.1%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



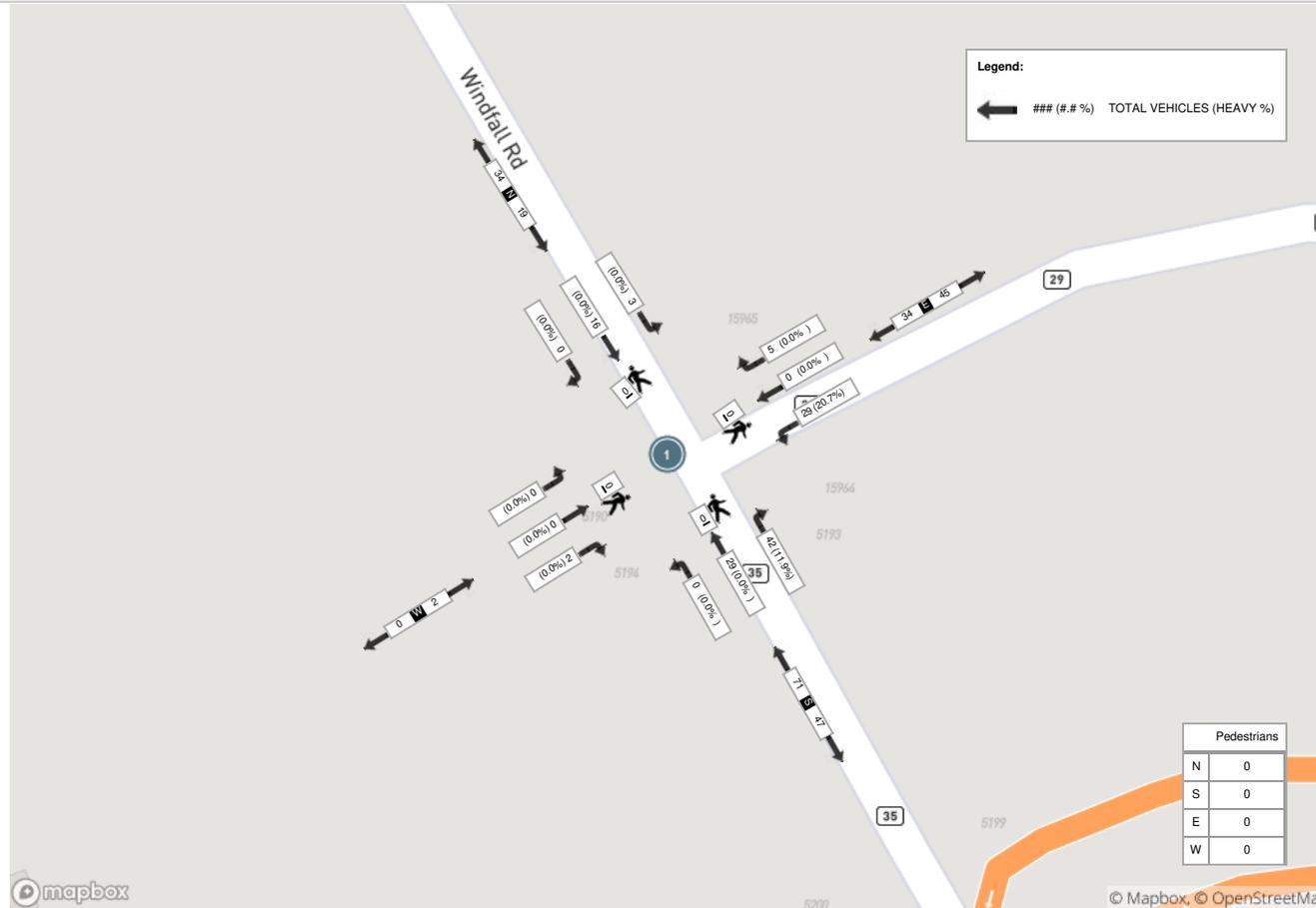
Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.37 °C)

Start Time	N Approach COUNTY RD 35						E Approach COUNTY RD 29						S Approach COUNTY RD 35						W Approach COUNTY RD 29						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	
16:45:00	0	4	0	0	0	4	2	0	8	0	0	10	6	11	0	0	0	17	0	0	0	0	0	0	31
17:00:00	0	5	2	0	0	7	1	0	11	0	0	12	14	12	0	1	0	27	0	0	0	0	0	0	46
17:15:00	0	2	1	0	0	3	2	0	4	0	0	6	9	2	0	1	0	12	2	0	0	0	0	2	23
17:30:00	0	5	0	0	0	5	0	0	6	0	0	6	13	4	0	0	0	17	0	0	0	0	0	0	28
Grand Total	0	16	3	0	0	19	5	0	29	0	0	34	42	29	0	2	0	73	2	0	0	0	0	2	128
Approach%	0%	84.2%	15.8%	0%	-	-	14.7%	0%	85.3%	0%	-	-	57.5%	39.7%	0%	2.7%	-	100%	0%	0%	0%	0%	-	-	-
Totals %	0%	12.5%	2.3%	0%	14.8%	3.9%	0%	22.7%	0%	26.6%	32.8%	22.7%	0%	1.6%	57%	1.6%	0%	0%	0%	1.6%	-	-	-	-	-
PHF	0	0.8	0.38	0	0.68	0.63	0	0.66	0	0.71	0.75	0.6	0	0.5	0.68	0.25	0	0	0	0.25	-	-	-	-	-
Heavy	0	0	0	0	0	0	0	0	6	0	6	5	0	0	0	5	0	0	0	0	0	0	0	0	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	0%	20.7%	0%	17.6%	11.9%	0%	0%	0%	6.8%	0%	0%	0%	0%	0%	0%	0%	0%	-
Lights	0	16	3	0	19	5	0	23	0	28	37	29	0	2	68	2	0	0	0	2	-	-	-	-	-
Lights %	0%	100%	100%	0%	100%	100%	0%	79.3%	0%	82.4%	88.1%	100%	0%	100%	93.2%	100%	0%	0%	0%	100%	-	-	-	-	-
Single-Unit Trucks	0	0	0	0	0	0	0	1	0	1	3	0	0	0	3	0	0	0	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	3.4%	0%	2.9%	7.1%	0%	0%	0%	4.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Buses %	0%	0%	0%	0%	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	5	0	5	2	0	0	2	0	0	0	0	0	0	0	0	0	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	17.2%	0%	14.7%	4.8%	0%	0%	2.7%	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	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%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-

Peak Hour: 06:30 AM - 07:30 AM Weather: Overcast Clouds (13.63 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.37 °C)





Turning Movement Count (3 . COUNTY RD 35 & HWY 401 EB RAMP TERMINAL)

Start Time	N Approach COUNTY RD 35					S Approach COUNTY RD 35					W Approach HWY 401 EB RAMP TERMINAL					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
06:00:00	7	5	0	0	12	5	2	0	0	7	1	3	0	0	4	23	
06:15:00	11	19	0	0	30	10	10	0	0	20	5	4	0	0	9	59	
06:30:00	7	18	0	0	25	10	10	0	0	20	7	0	1	0	8	53	
06:45:00	7	17	0	0	24	8	10	0	0	18	2	4	0	0	6	48	183
07:00:00	1	20	0	0	21	13	4	0	0	17	3	3	0	0	6	44	204
07:15:00	7	15	0	0	22	16	5	0	0	21	5	5	0	0	10	53	198
07:30:00	7	19	0	0	26	8	10	0	0	18	4	2	0	0	6	50	195
07:45:00	5	15	0	0	20	17	9	0	0	26	2	1	0	0	3	49	196
08:00:00	12	14	0	0	26	12	11	0	0	23	2	0	0	0	2	51	203
08:15:00	5	9	0	0	14	6	5	0	0	11	2	1	0	0	3	28	178
08:30:00	3	8	0	0	11	11	6	0	0	17	2	4	0	0	6	34	162
08:45:00	3	11	0	0	14	8	7	0	0	15	6	3	0	0	9	38	151
09:00:00	10	13	0	0	23	12	9	0	0	21	4	0	0	0	4	48	148
09:15:00	4	16	0	0	20	5	3	0	0	8	2	4	0	0	6	34	154
09:30:00	4	12	0	0	16	12	7	0	0	19	1	3	1	0	5	40	160
09:45:00	5	12	0	0	17	6	1	0	0	7	2	3	0	0	5	29	151
BREAK																	
15:00:00	3	18	0	0	21	12	1	0	0	13	7	6	0	0	13	47	
15:15:00	3	15	0	0	18	18	5	0	0	23	4	3	1	0	8	49	
15:30:00	4	15	0	0	19	16	7	0	0	23	2	3	0	0	5	47	
15:45:00	4	28	0	0	32	11	3	0	0	14	3	6	0	0	9	55	198
16:00:00	4	19	0	0	23	17	11	0	0	28	2	2	0	0	4	55	206
16:15:00	5	15	0	0	20	20	11	0	0	31	5	7	0	0	12	63	220
16:30:00	5	16	0	0	21	15	6	0	0	21	3	2	0	0	5	47	220
16:45:00	4	27	0	0	31	16	5	0	0	21	4	2	0	0	6	58	223
17:00:00	4	21	0	0	25	28	2	0	0	30	2	8	0	0	10	65	233
17:15:00	6	19	0	0	25	9	11	0	0	20	7	4	0	0	11	56	226
17:30:00	7	16	0	0	23	22	11	0	0	33	5	1	0	0	6	62	241
17:45:00	5	24	0	0	29	7	5	0	0	12	4	6	0	0	10	51	234
18:00:00	2	14	0	0	16	10	2	0	0	12	1	1	0	0	2	30	199
18:15:00	7	17	0	0	24	9	8	0	0	17	5	2	0	0	7	48	191
18:30:00	2	11	0	0	13	7	5	0	0	12	2	3	0	0	5	30	159
18:45:00	1	7	0	0	8	8	2	0	0	10	7	1	0	0	8	26	134



Grand Total	164	505	0	0	669	384	204	0	0	588	113	97	3	0	213	1470	-
Approach%	24.5%	75.5%	0%		-	65.3%	34.7%	0%		-	53.1%	45.5%	1.4%		-	-	-
Totals %	11.2%	34.4%	0%		45.5%	26.1%	13.9%	0%		40%	7.7%	6.6%	0.2%		14.5%	-	-
Heavy	8	13	0		-	10	8	0		-	9	37	1		-	-	-
Heavy %	4.9%	2.6%	0%		-	2.6%	3.9%	0%		-	8%	38.1%	33.3%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 06:15 AM - 07:15 AM Weather: Overcast Clouds (13.63 °C)

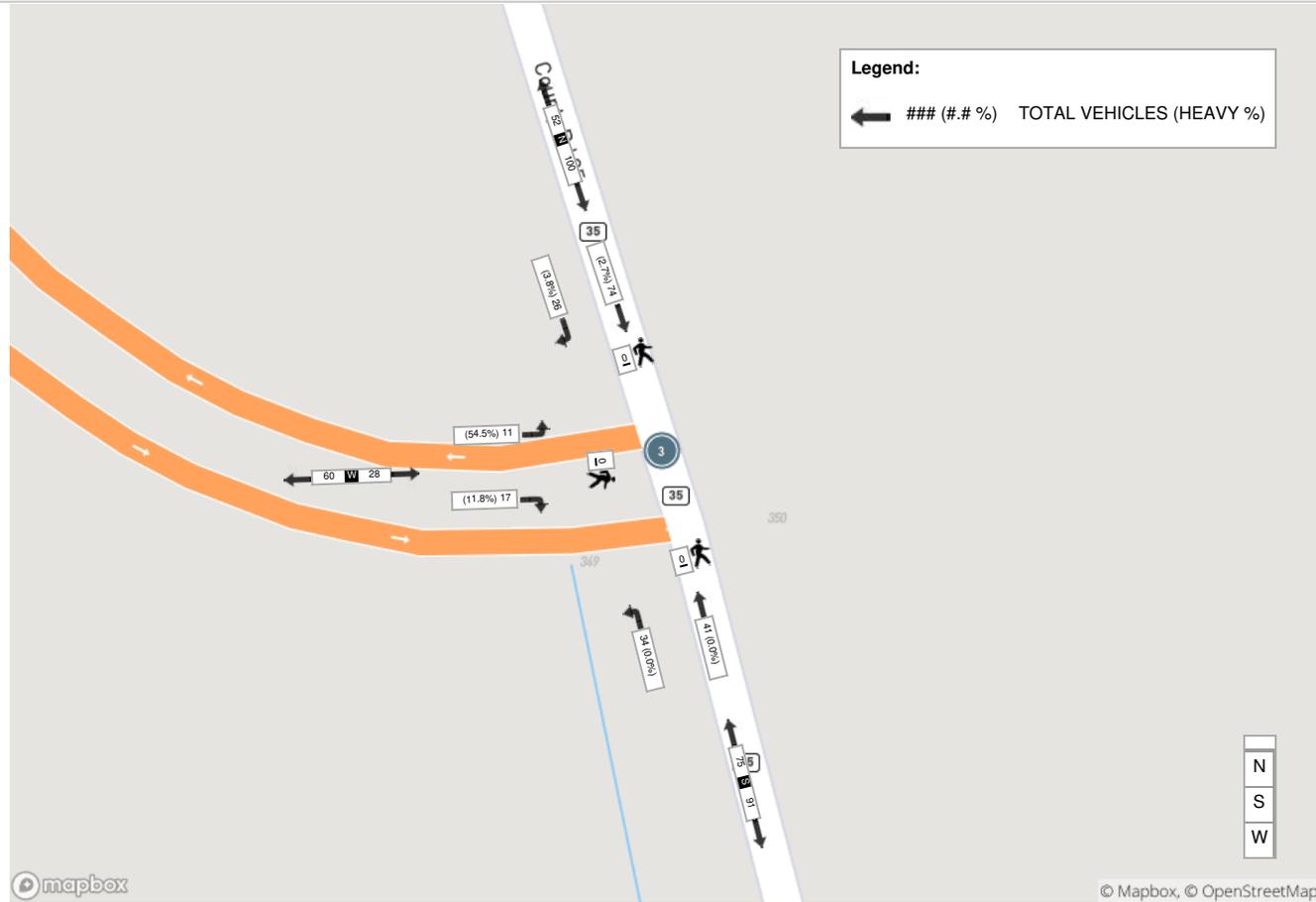
Start Time	N Approach COUNTY RD 35					S Approach COUNTY RD 35					W Approach HWY 401 EB RAMP TERMINAL					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
06:15:00	11	19	0	0	30	10	10	0	0	20	5	4	0	0	9	59
06:30:00	7	18	0	0	25	10	10	0	0	20	7	0	1	0	8	53
06:45:00	7	17	0	0	24	8	10	0	0	18	2	4	0	0	6	48
07:00:00	1	20	0	0	21	13	4	0	0	17	3	3	0	0	6	44
Grand Total	26	74	0	0	100	41	34	0	0	75	17	11	1	0	29	204
Approach%	26%	74%	0%	-	-	54.7%	45.3%	0%	-	-	58.6%	37.9%	3.4%	-	-	-
Totals %	12.7%	36.3%	0%	49%	20.1%	16.7%	0%	36.8%	8.3%	5.4%	0.5%	14.2%	-	-	-	-
PHF	0.59	0.93	0	0.83	0.79	0.85	0	0.94	0.61	0.69	0.25	0.81	-	-	-	-
Heavy	1	2	0	3	0	0	0	0	2	6	1	9	-	-	-	-
Heavy %	3.8%	2.7%	0%	3%	0%	0%	0%	0%	11.8%	54.5%	100%	31%	-	-	-	-
Lights	25	72	0	97	40	34	0	74	15	5	0	20	-	-	-	-
Lights %	96.2%	97.3%	0%	97%	97.6%	100%	0%	98.7%	88.2%	45.5%	0%	69%	-	-	-	-
Single-Unit Trucks	1	2	0	3	0	0	0	0	1	0	0	1	-	-	-	-
Single-Unit Trucks %	3.8%	2.7%	0%	3%	0%	0%	0%	0%	5.9%	0%	0%	3.4%	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	0	0	1	6	1	8	-	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	5.9%	54.5%	100%	27.6%	-	-	-	-
Bicycles on Road	0	0	0	0	1	0	0	1	0	0	0	0	-	-	-	-
Bicycles on Road %	0%	0%	0%	0%	2.4%	0%	0%	1.3%	0%	0%	0%	0%	-	-	-	-



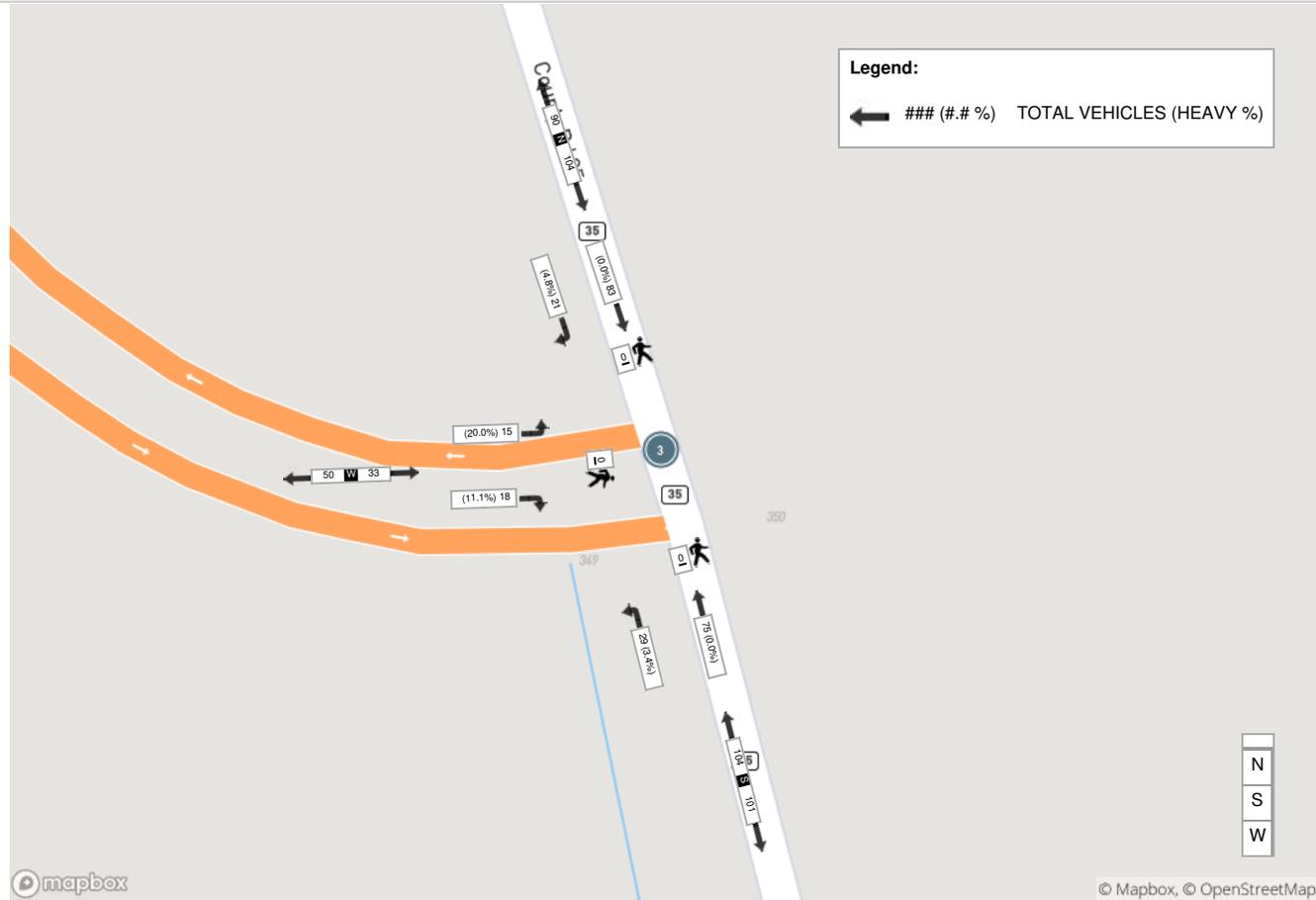
Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.37 °C)

Start Time	N Approach COUNTY RD 35					S Approach COUNTY RD 35					W Approach HWY 401 EB RAMP TERMINAL					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
16:45:00	4	27	0	0	31	16	5	0	0	21	4	2	0	0	6	58
17:00:00	4	21	0	0	25	28	2	0	0	30	2	8	0	0	10	65
17:15:00	6	19	0	0	25	9	11	0	0	20	7	4	0	0	11	56
17:30:00	7	16	0	0	23	22	11	0	0	33	5	1	0	0	6	62
Grand Total	21	83	0	0	104	75	29	0	0	104	18	15	0	0	33	241
Approach%	20.2%	79.8%	0%		-	72.1%	27.9%	0%		-	54.5%	45.5%	0%		-	-
Totals %	8.7%	34.4%	0%		43.2%	31.1%	12%	0%		43.2%	7.5%	6.2%	0%		13.7%	-
PHF	0.75	0.77	0		0.84	0.67	0.66	0		0.79	0.64	0.47	0		0.75	-
Heavy	1	0	0		1	0	1	0		1	2	3	0		5	-
Heavy %	4.8%	0%	0%		1%	0%	3.4%	0%		1%	11.1%	20%	0%		15.2%	-
Lights	20	83	0		103	75	28	0		103	16	12	0		28	-
Lights %	95.2%	100%	0%		99%	100%	96.6%	0%		99%	88.9%	80%	0%		84.8%	-
Single-Unit Trucks	0	0	0		0	0	1	0		1	0	1	0		1	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	3.4%	0%		1%	0%	6.7%	0%		3%	-
Articulated Trucks	1	0	0		1	0	0	0		0	2	2	0		4	-
Articulated Trucks %	4.8%	0%	0%		1%	0%	0%	0%		0%	11.1%	13.3%	0%		12.1%	-
Bicycles on Road	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%	-

Peak Hour: 06:15 AM - 07:15 AM Weather: Overcast Clouds (13.63 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.37 °C)





Turning Movement Count (2 . COUNTY RD 35 & HWY 401 WB RAMP TERMINAL)

Start Time	N Approach COUNTY RD 35						E Approach HWY 401 WB RAMP TERMINAL						S Approach COUNTY RD 35						W Approach COUNTY RD 29						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		
06:00:00	0	2	4	0	0	6	0	1	1	0	0	2	4	4	0	0	0	8	10	0	0	0	0	10	26	
06:15:00	0	7	4	0	0	11	0	2	6	0	0	8	5	7	1	0	0	13	17	0	3	0	0	20	52	
06:30:00	0	11	2	0	0	13	1	3	7	0	0	11	2	7	0	0	0	9	7	0	1	0	0	8	41	
06:45:00	0	11	4	0	0	15	0	2	6	0	0	8	1	12	1	0	0	14	6	0	0	0	0	6	43	162
07:00:00	1	8	4	0	0	13	2	7	8	0	0	17	2	11	3	0	0	16	5	0	0	0	0	5	51	187
07:15:00	2	7	0	0	0	9	2	1	5	0	0	8	2	13	6	0	0	21	10	0	0	0	0	10	48	183
07:30:00	4	7	4	0	0	15	0	3	8	0	0	11	3	6	1	0	0	10	11	0	1	0	0	12	48	190
07:45:00	1	8	2	0	0	11	1	3	6	0	0	10	3	10	5	0	0	18	6	0	1	0	0	7	46	193
08:00:00	1	9	1	0	0	11	1	5	4	0	0	10	3	5	4	0	0	12	14	0	1	0	0	15	48	190
08:15:00	1	6	2	0	0	9	0	1	1	0	0	2	0	3	2	0	0	5	6	0	1	0	0	7	23	165
08:30:00	0	5	1	0	0	6	0	2	2	0	0	4	6	9	2	0	0	17	4	0	1	0	2	5	32	149
08:45:00	0	5	3	0	0	8	0	3	5	0	0	8	2	7	1	0	0	10	3	0	0	0	0	3	29	132
09:00:00	0	5	6	0	0	11	1	3	10	0	0	14	1	8	3	0	0	12	11	0	0	0	0	11	48	132
09:15:00	0	7	2	0	0	9	0	1	2	0	0	3	3	4	1	0	0	8	8	0	2	0	0	10	30	139
09:30:00	0	7	0	0	0	7	0	3	5	0	0	8	3	9	4	0	0	16	5	0	0	0	0	5	36	143
09:45:00	0	3	3	0	0	6	1	2	6	0	0	9	1	5	0	0	0	6	7	0	0	0	0	7	28	142
BREAK																										
15:00:00	2	7	0	0	0	9	0	7	7	0	0	14	1	11	5	0	0	17	6	0	0	0	0	6	46	
15:15:00	2	4	2	0	0	8	4	6	9	1	0	20	2	18	3	0	0	23	5	0	1	0	0	6	57	
15:30:00	0	6	1	0	0	7	3	7	6	0	0	16	2	11	6	0	0	19	7	0	0	0	0	7	49	
15:45:00	2	8	0	0	0	10	0	4	19	0	0	23	2	14	1	0	0	17	7	0	1	0	0	8	58	210
16:00:00	1	9	0	0	0	10	2	5	5	0	0	12	4	9	6	0	0	19	8	0	1	0	0	9	50	214
16:15:00	1	4	1	0	0	6	2	13	9	0	0	24	4	13	7	0	0	24	7	0	1	0	0	8	62	219
16:30:00	1	5	2	0	1	8	3	5	9	0	0	17	2	12	4	0	0	18	6	0	1	0	0	7	50	220
16:45:00	0	9	3	0	0	12	5	5	13	0	0	23	2	11	5	0	0	18	9	1	1	0	0	11	64	226
17:00:00	2	9	5	0	0	16	7	6	10	0	0	23	3	20	13	0	0	36	6	0	0	0	0	6	81	257
17:15:00	0	4	2	0	0	6	3	6	14	0	0	23	0	8	4	0	0	12	8	0	1	0	0	9	50	245
17:30:00	0	9	4	0	0	13	2	4	6	0	0	12	4	14	5	0	0	23	8	0	0	0	0	8	56	251
17:45:00	3	9	0	0	0	12	4	9	7	0	0	20	1	12	3	0	0	16	13	0	0	0	0	13	61	248
18:00:00	1	5	0	0	0	6	0	4	5	0	0	9	0	8	3	0	0	11	4	0	0	0	0	4	30	197
18:15:00	1	7	3	0	0	11	1	6	8	0	0	15	1	6	4	0	0	11	10	0	0	0	0	10	47	194
18:30:00	0	4	2	0	0	6	3	5	3	0	0	11	2	6	2	0	0	10	6	0	0	0	0	6	33	171
18:45:00	0	2	1	0	0	3	0	3	2	0	0	5	2	7	0	0	0	9	4	0	0	0	0	4	21	131
Grand Total	26	209	68	0	1	303	48	137	214	1	0	400	73	300	105	0	0	478	244	1	18	0	2	263	1444	-
Approach%	8.6%	69%	22.4%	0%	-	-	12%	34.3%	53.5%	0.3%	-	-	15.3%	62.8%	22%	0%	-	92.8%	0.4%	6.8%	0%	-	-	-	-	-
Totals %	1.8%	14.5%	4.7%	0%	21%	-	3.3%	9.5%	14.8%	0.1%	27.7%	-	5.1%	20.8%	7.3%	0%	33.1%	16.9%	0.1%	1.2%	0%	18.2%	-	-	-	-
Heavy	3	2	26	0	-	-	1	9	11	0	-	-	5	34	3	0	-	7	0	5	0	-	-	-	-	-
Heavy %	11.5%	1%	38.2%	0%	-	-	2.1%	6.6%	5.1%	0%	-	-	6.8%	11.3%	2.9%	0%	-	2.9%	0%	27.8%	0%	-	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:00 AM - 08:00 AM Weather: Overcast Clouds (13.63 °C)

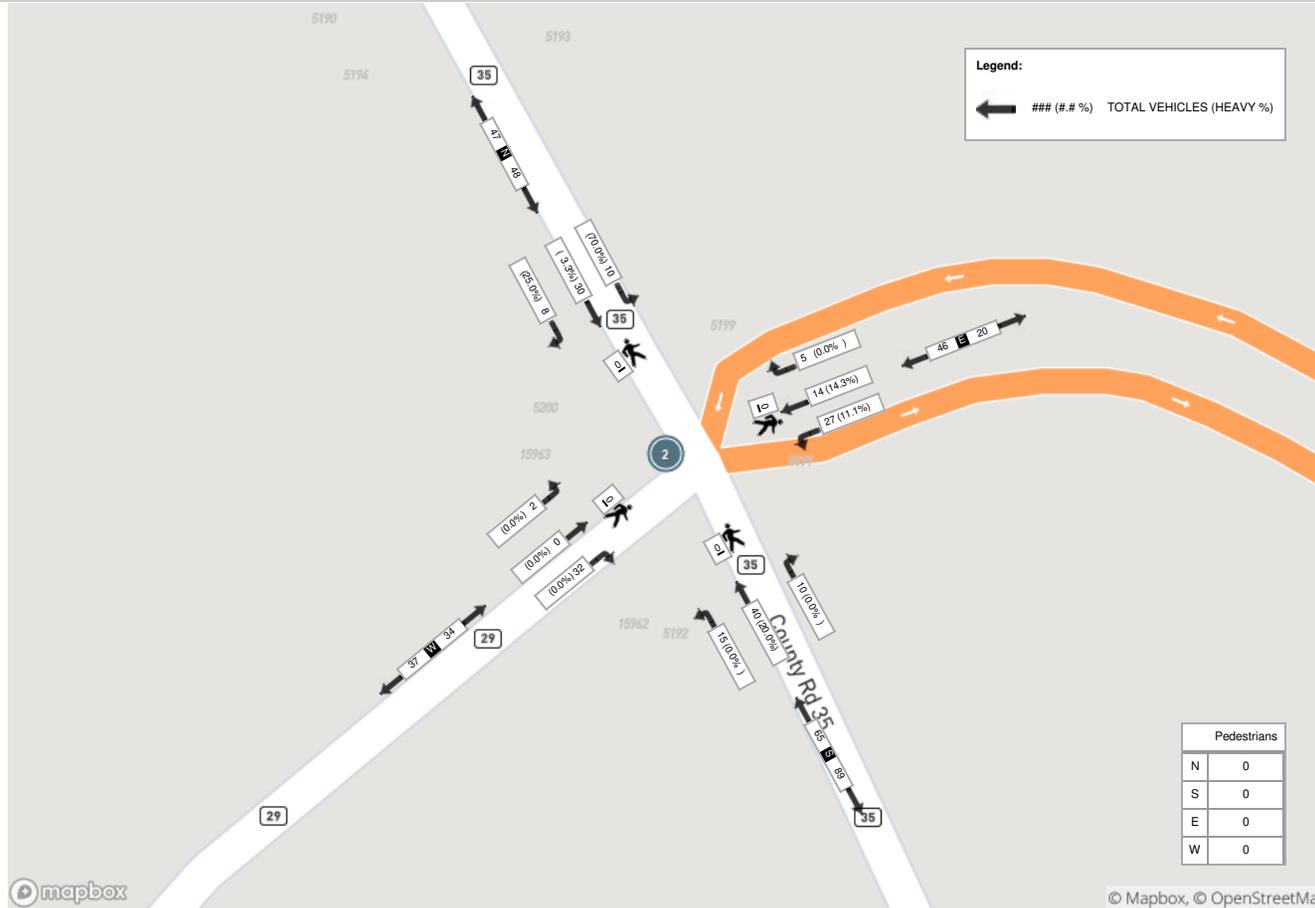
Start Time	N Approach COUNTY RD 35						E Approach HWY 401 WB RAMP TERMINAL						S Approach COUNTY RD 35						W Approach COUNTY RD 29						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:00:00	1	8	4	0	0	13	2	7	8	0	0	17	2	11	3	0	0	16	5	0	0	0	0	5	51
07:15:00	2	7	0	0	0	9	2	1	5	0	0	8	2	13	6	0	0	21	10	0	0	0	0	10	48
07:30:00	4	7	4	0	0	15	0	3	8	0	0	11	3	6	1	0	0	10	11	0	1	0	0	12	48
07:45:00	1	8	2	0	0	11	1	3	6	0	0	10	3	10	5	0	0	18	6	0	1	0	0	7	46
Grand Total	8	30	10	0	0	48	5	14	27	0	0	46	10	40	15	0	0	65	32	0	2	0	0	34	193
Approach%	16.7%	62.5%	20.8%	0%		-	10.9%	30.4%	58.7%	0%		-	15.4%	61.5%	23.1%	0%		-	94.1%	0%	5.9%	0%		-	-
Totals %	4.1%	15.5%	5.2%	0%		24.9%	2.6%	7.3%	14%	0%		23.8%	5.2%	20.7%	7.8%	0%		33.7%	16.6%	0%	1%	0%		17.6%	-
PHF	0.5	0.94	0.63	0		0.8	0.63	0.5	0.84	0		0.68	0.83	0.77	0.63	0		0.77	0.73	0	0.5	0		0.71	-
Heavy	2	1	7	0		10	0	2	3	0		5	0	8	0	0		8	0	0	0	0		0	-
Heavy %	25%	3.3%	70%	0%		20.8%	0%	14.3%	11.1%	0%		10.9%	0%	20%	0%	0%		12.3%	0%	0%	0%	0%		0%	-
Lights	6	29	3	0		38	5	12	24	0		41	10	32	15	0		57	32	0	2	0		34	-
Lights %	75%	96.7%	30%	0%		79.2%	100%	85.7%	88.9%	0%		89.1%	100%	80%	100%	0%		87.7%	100%	0%	100%	0%		100%	-
Single-Unit Trucks	1	1	4	0		6	0	1	3	0		4	0	1	0	0		1	0	0	0	0		0	-
Single-Unit Trucks %	12.5%	3.3%	40%	0%		12.5%	0%	7.1%	11.1%	0%		8.7%	0%	2.5%	0%	0%		1.5%	0%	0%	0%	0%		0%	-
Articulated Trucks	1	0	3	0		4	0	1	0	0		1	0	7	0	0		7	0	0	0	0		0	-
Articulated Trucks %	12.5%	0%	30%	0%		8.3%	0%	7.1%	0%	0%		2.2%	0%	17.5%	0%	0%		10.8%	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%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



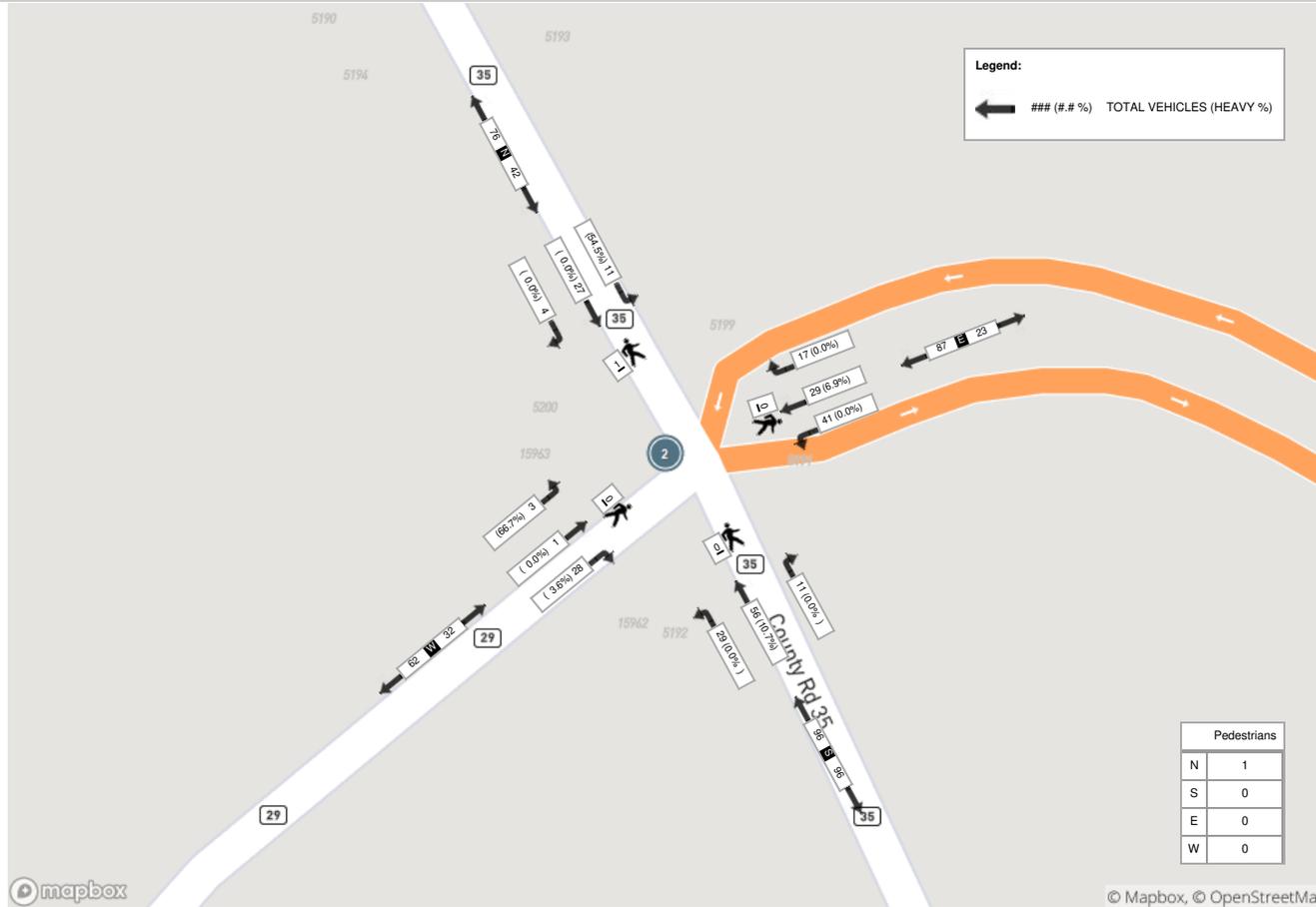
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (15.37 °C)

Start Time	N Approach COUNTY RD 35						E Approach HWY 401 WB RAMP TERMINAL						S Approach COUNTY RD 35						W Approach COUNTY RD 29						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	
16:15:00	1	4	1	0	0	6	2	13	9	0	0	24	4	13	7	0	0	24	7	0	1	0	0	8	62
16:30:00	1	5	2	0	1	8	3	5	9	0	0	17	2	12	4	0	0	18	6	0	1	0	0	7	50
16:45:00	0	9	3	0	0	12	5	5	13	0	0	23	2	11	5	0	0	18	9	1	1	0	0	11	64
17:00:00	2	9	5	0	0	16	7	6	10	0	0	23	3	20	13	0	0	36	6	0	0	0	0	6	81
Grand Total	4	27	11	0	1	42	17	29	41	0	0	87	11	56	29	0	0	96	28	1	3	0	0	32	257
Approach%	9.5%	64.3%	26.2%	0%	-	-	19.5%	33.3%	47.1%	0%	-	-	11.5%	58.3%	30.2%	0%	-	-	87.5%	3.1%	9.4%	0%	-	-	-
Totals %	1.6%	10.5%	4.3%	0%	16.3%	6.6%	11.3%	16%	0%	33.9%	4.3%	21.8%	11.3%	0%	37.4%	10.9%	0.4%	1.2%	0%	12.5%	-	-	-	-	-
PHF	0.5	0.75	0.55	0	0.66	0.61	0.56	0.79	0	0.91	0.69	0.7	0.56	0	0.67	0.78	0.25	0.75	0	0.73	-	-	-	-	-
Heavy	0	0	6	0	6	0	2	0	0	2	0	6	0	0	6	1	0	2	0	3	-	-	-	-	-
Heavy %	0%	0%	54.5%	0%	14.3%	0%	6.9%	0%	0%	2.3%	0%	10.7%	0%	0%	6.3%	3.6%	0%	66.7%	0%	9.4%	-	-	-	-	-
Lights	4	27	5	0	36	17	27	41	0	85	11	49	29	0	89	27	1	1	0	29	-	-	-	-	-
Lights %	100%	100%	45.5%	0%	85.7%	100%	93.1%	100%	0%	97.7%	100%	87.5%	100%	0%	92.7%	96.4%	100%	33.3%	0%	90.6%	-	-	-	-	-
Single-Unit Trucks	0	0	1	0	1	0	2	0	0	2	0	2	0	0	2	1	0	2	0	3	-	-	-	-	-
Single-Unit Trucks %	0%	0%	9.1%	0%	2.4%	0%	6.9%	0%	0%	2.3%	0%	3.6%	0%	0%	2.1%	3.6%	0%	66.7%	0%	9.4%	-	-	-	-	-
Articulated Trucks	0	0	5	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	-	-	-	-	-
Articulated Trucks %	0%	0%	45.5%	0%	11.9%	0%	0%	0%	0%	0%	0%	7.1%	0%	0%	4.2%	0%	0%	0%	0%	0%	-	-	-	-	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	-	-	-	-	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.8%	0%	0%	1%	0%	0%	0%	0%	0%	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Pedestrians%	-	-	-	-	100%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-

Peak Hour: 07:00 AM - 08:00 AM Weather: Overcast Clouds (13.63 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (15.37 °C)



15 MIN REPORT

Intersection ID:47270000(--N--)

HWY 401 @ MOULINETTE RD IC-778-S D & G RD 35

Municipality: Eastern

Date: 10-Apr-2018

Time	NORTH APPROACH								EAST APPROACH								SOUTH APPROACH								WEST APPROACH								Total								
	Cars		Trucks		Heavies		Ped		Cars		Trucks		Heavies		Ped		Cars		Trucks		Heavies		Ped		Cars		Trucks		Heavies		Ped										
	Left	ThruRight	Left	Thru Right	Left	Thru Right	Left		Thru Right	Left	Thru Right	Left	Thru Right	Left	Thru Right		Left	Thru Right	Left	ThruRight	Left	ThruRight	Left		Thru Right	Left	ThruRight	Left	Thru Right	Left	Thru Right	Left		Thru Right							
Period1																																									
14:15	0	8	0	0	0	0	0	0	0	0	6	3	3	0	0	0	0	0	0	0	6	8	2	0	0	0	0	2	0	0	0	0	8	0	0	0	0	0	0	0	46
14:30	0	9	0	0	1	0	0	0	0	0	5	5	1	0	0	1	0	0	0	0	2	7	5	1	1	0	0	2	0	0	0	0	4	0	0	0	0	0	0	0	44
14:45	0	7	2	0	1	0	0	1	0	0	6	4	0	0	0	0	0	0	0	0	8	15	3	1	0	0	0	1	0	0	0	0	6	0	0	0	0	0	0	0	55
15:00	0	11	0	0	0	0	1	0	0	0	6	5	4	0	0	0	1	0	0	0	4	13	2	0	0	0	0	1	1	0	1	0	9	0	0	0	1	0	0	0	60
15:15	1	8	0	0	1	0	0	1	1	0	4	4	3	0	0	0	0	1	0	0	3	13	7	0	1	1	0	1	0	0	0	0	9	0	0	0	0	0	0	0	59
15:30	0	11	0	0	0	1	0	0	0	0	6	4	2	0	0	0	1	0	0	0	6	5	2	0	1	0	0	1	0	0	0	0	8	0	0	0	0	0	0	0	48
15:45	1	16	0	0	0	0	1	3	1	0	7	8	0	0	0	0	0	0	0	0	4	19	4	0	0	0	0	0	1	0	1	0	7	0	0	0	0	0	1	0	74
16:00	0	8	1	0	0	0	1	2	0	0	7	12	5	0	0	0	0	0	0	0	4	12	5	0	0	0	1	1	0	0	1	0	6	0	0	0	1	0	0	0	67
16:15	2	16	0	0	0	0	0	1	0	0	10	5	3	0	0	0	1	0	0	0	6	8	2	0	0	0	0	1	0	0	0	0	5	0	0	0	0	0	1	0	61
16:30	0	11	0	0	0	0	1	1	1	0	11	8	2	0	0	1	0	0	0	0	5	12	2	0	1	0	0	0	0	0	1	0	9	0	0	0	0	0	0	0	66
16:45	0	8	1	0	0	0	0	0	0	0	15	6	2	0	0	0	0	0	0	0	6	13	6	0	1	0	0	0	1	0	0	0	5	0	0	0	0	0	1	0	65
17:00	0	19	0	0	0	0	0	0	0	0	13	7	5	0	0	0	0	0	0	0	4	18	4	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	0	0	79
17:15	0	11	1	0	0	0	0	0	0	0	11	12	8	0	0	1	0	0	0	0	5	14	2	0	1	0	0	1	0	0	0	0	9	0	0	0	0	0	0	0	76
17:30	1	11	0	0	2	0	2	0	0	0	10	9	7	0	0	0	0	0	0	0	9	18	0	0	0	0	0	0	0	0	1	0	10	0	0	0	0	0	0	0	80
17:45	3	11	0	0	0	0	0	0	0	0	6	4	4	0	0	0	0	0	0	0	8	12	0	0	0	0	0	0	0	0	1	0	8	0	0	0	0	0	0	0	57
18:00	0	7	0	0	0	0	0	0	0	0	4	10	0	0	0	0	0	0	0	0	4	11	2	0	0	0	0	1	0	0	0	0	12	0	0	0	0	0	0	0	51
Period2																																									
7:15	2	8	0	0	0	0	1	0	0	0	3	3	0	0	0	1	0	0	2	0	1	9	4	0	0	0	0	1	0	0	0	0	16	0	0	0	0	0	0	0	51
7:30	1	10	1	3	2	0	0	1	0	0	10	5	0	0	0	0	0	0	0	0	3	12	9	0	0	0	1	1	0	0	0	0	11	0	0	0	0	0	1	0	71
7:45	2	9	0	0	0	0	0	2	1	0	6	4	2	0	0	0	0	0	1	0	3	5	5	0	0	0	0	1	0	0	1	0	18	1	0	0	1	0	0	0	62
8:00	2	20	0	0	0	0	0	0	0	0	5	2	3	0	0	0	0	0	0	0	5	8	6	0	1	0	1	1	0	0	0	0	17	0	0	0	0	0	1	0	72
8:15	2	13	0	0	1	0	2	0	0	0	2	5	4	0	0	1	0	0	0	0	2	11	3	0	2	0	1	0	0	0	1	0	17	0	0	0	1	0	0	0	68
8:30	2	11	0	0	1	0	1	0	0	0	3	1	1	1	0	0	1	1	0	0	2	13	4	0	0	0	0	4	0	0	0	0	14	0	0	0	0	0	0	0	60
8:45	0	14	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	2	5	4	0	1	0	0	1	0	0	2	0	8	0	0	0	0	0	0	0	40
9:00	0	10	0	1	0	0	1	1	0	0	7	4	2	0	0	0	1	0	0	0	1	5	2	0	0	0	0	0	0	0	0	0	10	0	0	1	0	0	1	0	47
9:15	0	6	0	0	0	0	2	0	0	0	4	1	0	2	0	0	0	0	0	0	4	8	1	0	1	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	37
9:30	2	14	0	0	1	0	1	0	0	0	5	2	1	0	0	0	0	0	0	0	6	9	4	0	1	1	0	0	1	0	0	0	10	0	0	0	0	0	0	0	58
9:45	0	9	0	1	0	0	0	0	0	0	3	3	2	0	1	0	0	0	0	0	2	15	4	1	1	0	0	1	0	0	0	0	8	0	0	0	0	0	1	0	52
10:00	1	12	1	0	0	1	1	0	0	0	5	2	0	0	0	0	0	0	0	0	3	6	2	0	0	0	0	1	0	0	0	0	15	0	0	0	0	0	0	0	50
10:15	2	4	0	0	1	0	1	1	0	0	6	1	0	0	0	0	1	0	0	0	1	9	1	0	1	0	0	1	0	0	1	0	10	0	0	0	0	0	0	0	41
10:30	1	9	0	0	1	0	0	0	0	0	2	0	1	0	1	0	1	0	0	0	4	11	1	0	0	0	0	0	0	0	2	0	7	0	0	0	0	0	0	0	41
10:45	1	8	0	0	0	0	0	0	0	0	5	3	3	0	0	0	0	0	0	0	2	7	4	0	0	0	0	0	1	0	1	0	7	0	0	0	0	0	0	0	43
11:00	0	9	0	0	0	0	0	0	0	0	6	0	1	2	0	0	0	0	0	0	1	4	2	0	0	0	0	2	0	0	1	0	6	0	0	0	0	0	0	0	34

15 MIN REPORT

Intersection ID:47270000(--S--)

HWY 401 @ MOULINETTE RD IC-778-S D & G RD 35

Municipality: Eastern

Date: 10-Apr-2018

Time	NORTH APPROACH								EAST APPROACH								SOUTH APPROACH								WEST APPROACH								Total														
	Cars		Trucks		Heavies		Ped		Cars		Trucks		Heavies		Ped		Cars		Trucks		Heavies		Ped		Cars		Trucks		Heavies		Ped																
	Left	Thru	Right	Left	Thru	Right	Left		Thru	Right	Left	Thru	Right	Left	Thru		Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left			Thru	Right												
Period1																																															
14:15	0	23	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	15	0	1	0	0	0	1	0	0	1	0	3	0	0	0	1	0	0	0	56
14:30	0	11	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	14	0	0	1	0	0	2	0	0	0	0	4	1	0	0	0	0	0	0	47
14:45	0	17	4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	25	0	0	1	0	0	1	0	0	1	0	3	0	0	0	0	0	0	0	57
15:00	0	23	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	1	0	54
15:15	0	13	7	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	20	0	0	2	0	0	1	0	0	1	0	2	0	0	0	0	0	2	0	54
15:30	0	24	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	12	0	0	1	0	0	1	0	0	1	0	3	0	0	0	0	0	0	0	55
15:45	0	26	5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	24	0	0	0	0	1	1	0	0	3	0	3	0	0	0	0	0	0	0	73
16:00	0	16	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	16	0	0	0	0	0	3	0	0	5	0	1	0	0	0	0	0	0	0	53
16:15	0	30	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	16	0	0	0	0	1	0	0	0	1	0	5	0	0	0	0	0	0	0	59
16:30	0	22	9	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	16	0	0	0	0	0	0	0	0	1	0	3	1	0	0	0	0	0	0	58
16:45	0	26	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	24	0	0	1	0	0	1	0	0	1	0	10	0	0	0	0	0	0	0	70
17:00	0	34	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	23	0	0	0	0	0	0	0	0	3	0	4	0	0	0	0	0	0	0	76
17:15	0	20	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	18	0	1	0	0	0	0	0	0	2	0	2	1	0	0	1	0	0	0	60
17:30	0	27	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23	0	0	0	0	0	0	0	0	4	0	3	0	0	0	0	0	0	0	65
17:45	0	21	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	17	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	50
18:00	0	14	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	14	0	0	0	0	0	0	0	0	4	0	4	0	0	0	1	0	0	0	46
Period2																																															
7:15	0	15	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	11	0	0	0	0	0	1	0	0	1	0	7	0	0	0	0	0	1	0	57
7:30	0	19	11	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	22	0	0	0	0	1	2	0	0	2	0	3	0	0	0	0	0	1	0	72
7:45	0	18	16	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	14	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	67
8:00	0	25	18	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	19	0	0	1	0	0	2	0	0	0	0	7	0	0	0	0	0	0	0	85
8:15	0	18	15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	12	0	1	2	0	0	1	0	0	3	0	3	0	0	0	0	0	0	0	69
8:30	0	15	14	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	17	0	0	0	0	0	3	0	0	2	0	4	0	0	0	1	0	0	0	66
8:45	0	15	8	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	10	0	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	45
9:00	0	13	12	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	9	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	0	0	48
9:15	0	13	7	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	13	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	48
9:30	0	15	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	15	0	0	2	0	0	1	0	0	3	0	3	0	0	0	0	0	1	0	55
9:45	0	16	5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	20	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	52
10:00	0	23	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	48
10:15	0	18	4	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	43
10:30	0	9	7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	15	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	40
10:45	0	14	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	12	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	40
11:00	0	16	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	8	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	38



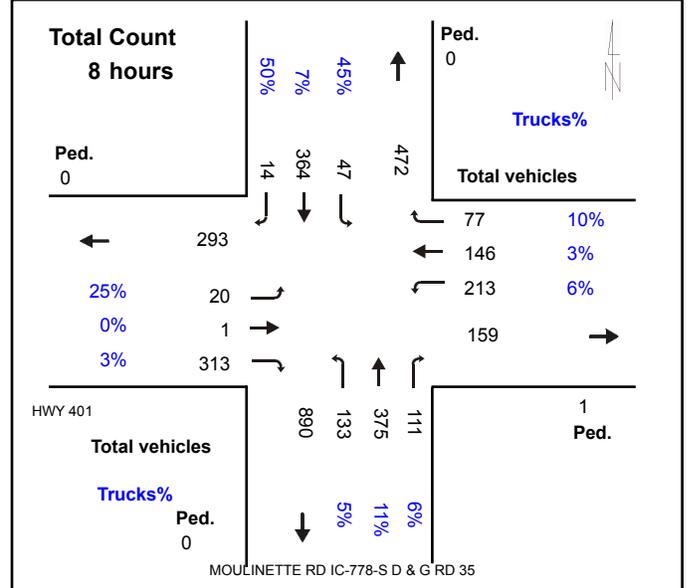
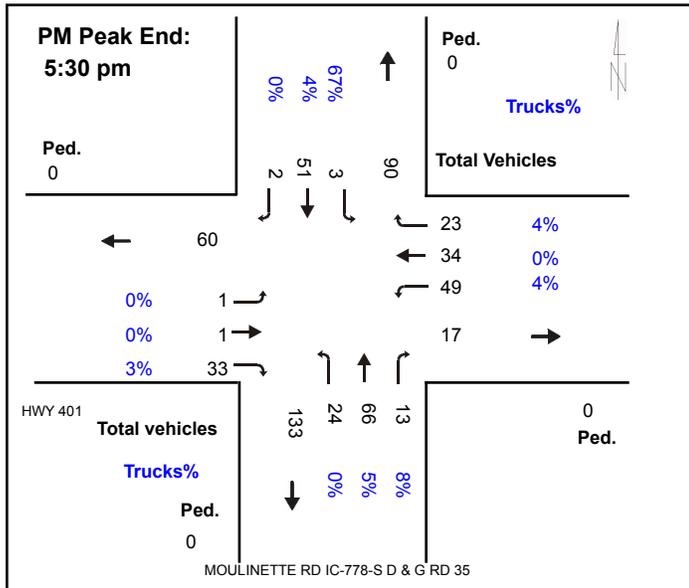
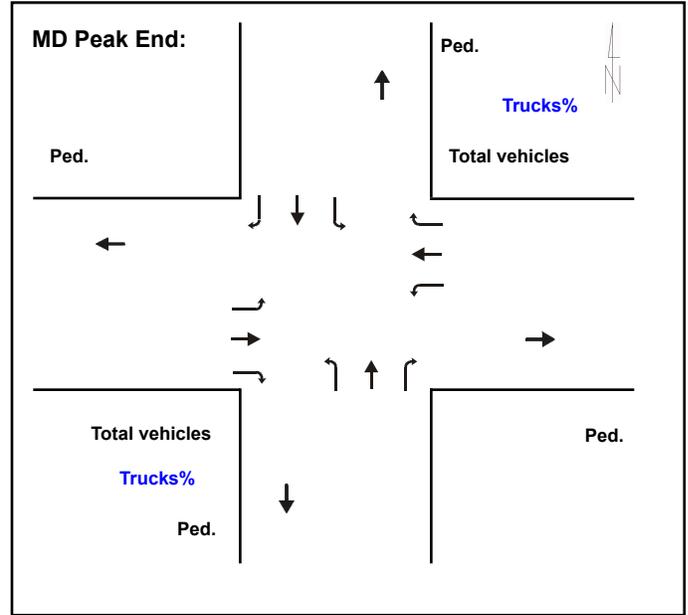
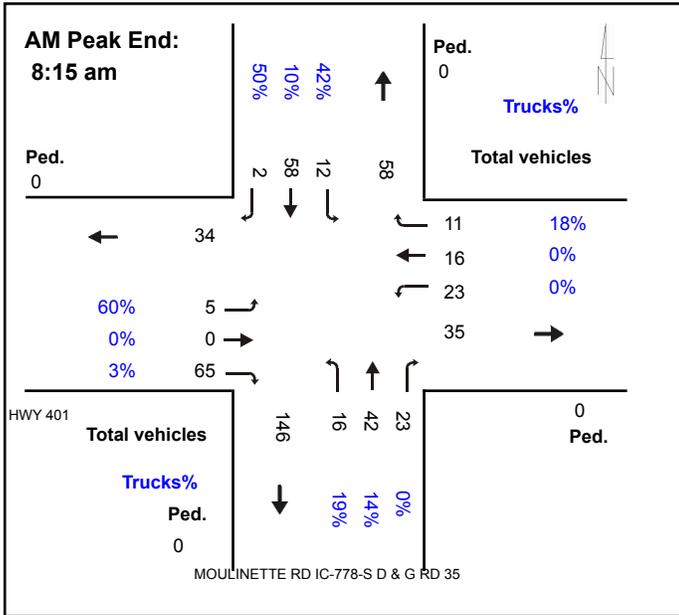
HWY 401 @ MOULINETTE RD IC-778-S D & G RD 35

Eastern

Intersection ID:472700000(--N--)

Count Day: Tuesday

Count Date: 10-Apr-2018





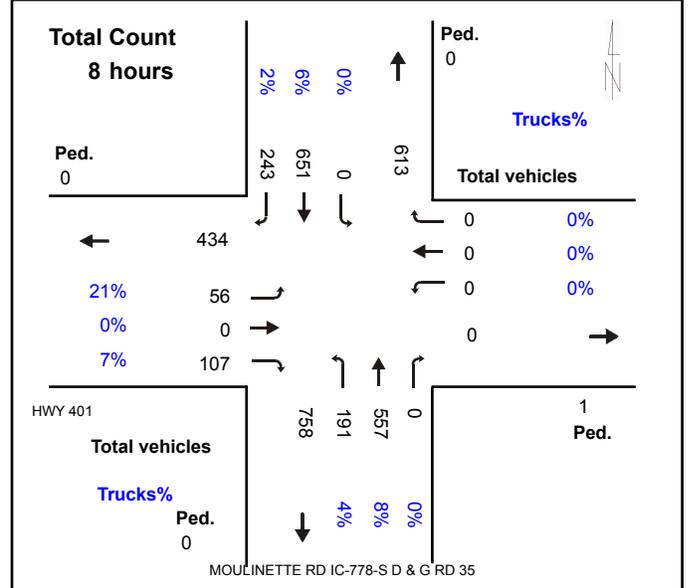
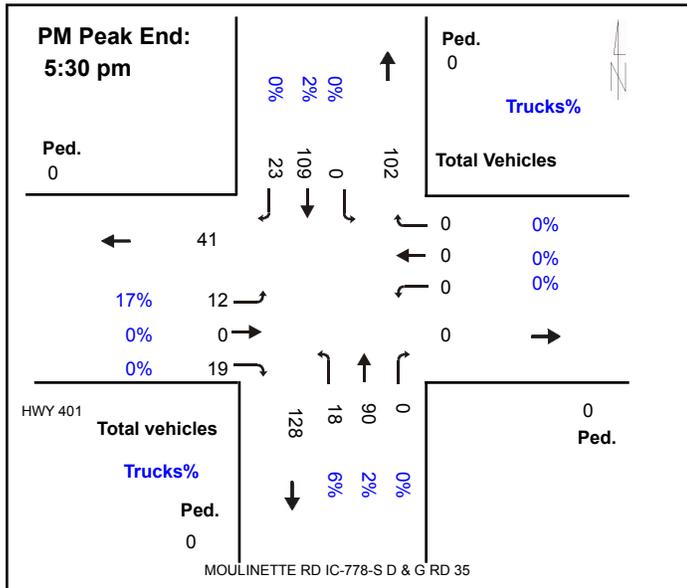
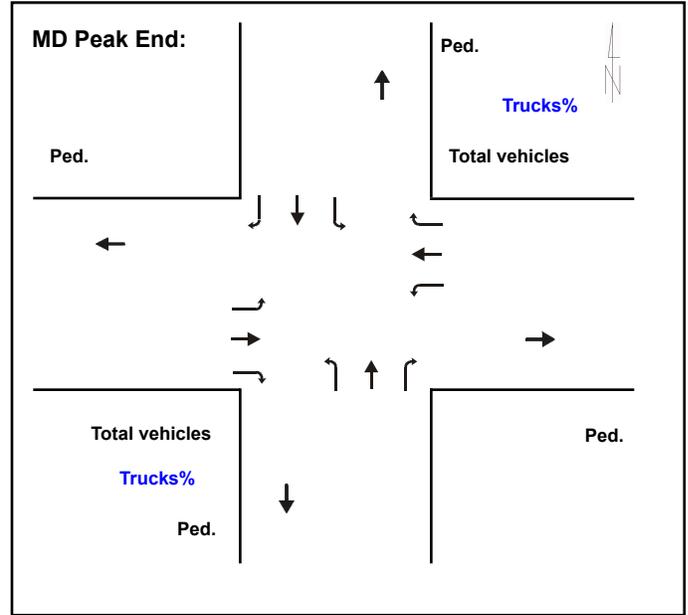
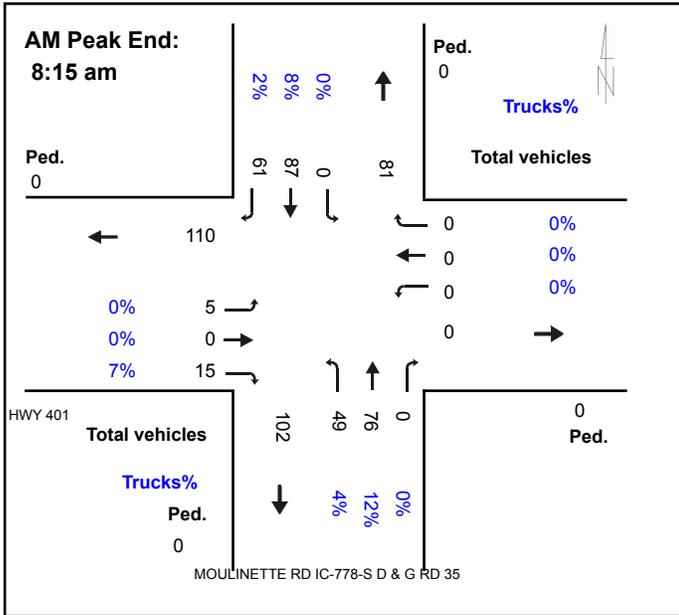
HWY 401 @ MOULINETTE RD IC-778-S D & G RD 35

Eastern

Intersection ID:472700000(--S--)

Count Day: Tuesday

Count Date: 10-Apr-2018



APPENDIX E

Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Level of Service Definitions

Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

APPENDIX F

Detailed Capacity Analysis Reports

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2021 AM Existing Conditions



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	32	63	77	111	39
Future Volume (vph)	21	32	63	77	111	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.918			0.965		
Flt Protected	0.981			0.978		
Satd. Flow (prot)	1342	0	0	1854	1795	0
Flt Permitted	0.981			0.978		
Satd. Flow (perm)	1342	0	0	1854	1795	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	55%	12%	3%	0%	3%	4%
Adj. Flow (vph)	24	37	73	90	129	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	163	174	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

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
 1: Moulinette Road & Hwy 401 EB Ramps

2021 AM Existing Conditions



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	32	63	77	111	39
Future Volume (Veh/h)	21	32	63	77	111	39
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	24	37	73	90	129	45
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	388	152	174			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	388	152	174			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	95	96	95			
cM capacity (veh/h)	497	869	1397			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	61	163	174			
Volume Left	24	73	0			
Volume Right	37	0	45			
cSH	672	1397	1700			
Volume to Capacity	0.09	0.05	0.10			
Queue Length 95th (m)	2.3	1.3	0.0			
Control Delay (s)	10.9	3.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.9	3.7	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			29.1%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	54	46	24	9	23	60	15	17	50	13
Future Volume (vph)	3	0	54	46	24	9	23	60	15	17	50	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.872			0.985			0.979			0.978	
Flt Protected		0.998			0.972			0.988			0.990	
Satd. Flow (prot)	0	1672	0	0	1661	0	0	1656	0	0	1540	0
Flt Permitted		0.998			0.972			0.988			0.990	
Satd. Flow (perm)	0	1672	0	0	1661	0	0	1656	0	0	1540	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	11%	14%	0%	0%	20%	0%	70%	3%	25%
Adj. Flow (vph)	3	0	57	48	25	9	24	63	16	18	53	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	82	0	0	103	0	0	85	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.1%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2021 AM Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	54	46	24	9	23	60	15	17	50	13
Future Volume (Veh/h)	3	0	54	46	24	9	23	60	15	17	50	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	3	0	57	48	25	9	24	63	16	18	53	14
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	236	223	60	272	222	71	67			79		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	236	223	60	272	222	71	67			79		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.2	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.3	2.2			2.8		
p0 queue free %	100	100	94	92	96	99	98			98		
cM capacity (veh/h)	678	659	1011	611	636	997	1547			1181		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	60	82	103	85								
Volume Left	3	48	24	18								
Volume Right	57	9	16	14								
cSH	987	646	1547	1181								
Volume to Capacity	0.06	0.13	0.02	0.02								
Queue Length 95th (m)	1.5	3.3	0.4	0.4								
Control Delay (s)	8.9	11.4	1.8	1.8								
Lane LOS	A	B	A	A								
Approach Delay (s)	8.9	11.4	1.8	1.8								
Approach LOS	A	B										
Intersection Summary												
Average Delay			5.5									
Intersection Capacity Utilization			25.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2021 AM Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	8	37	3	2	5	18	49	5	35	0
Future Volume (vph)	0	0	8	37	3	2	5	18	49	5	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.994			0.908				
Fl _t Protected					0.958			0.997			0.994	
Satd. Flow (prot)	0	1385	0	0	1590	0	0	1485	0	0	1910	0
Fl _t Permitted					0.958			0.997			0.994	
Satd. Flow (perm)	0	1385	0	0	1590	0	0	1485	0	0	1910	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	20%	17%	0%	0%	0%	0%	25%	0%	0%	0%
Adj. Flow (vph)	0	0	8	39	3	2	5	19	52	5	37	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	44	0	0	76	0	0	42	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	20.6%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2021 AM Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	8	37	3	2	5	18	49	5	35	0
Future Volume (Veh/h)	0	0	8	37	3	2	5	18	49	5	35	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	8	39	3	2	5	19	52	5	37	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	106	128	37	110	102	45	37			71		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	106	128	37	110	102	45	37			71		
tC, single (s)	7.1	6.5	6.4	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	95	100	100	100			100		
cM capacity (veh/h)	870	761	986	823	787	1031	1587			1542		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	44	76	42								
Volume Left	0	39	5	5								
Volume Right	8	2	52	0								
cSH	986	828	1587	1542								
Volume to Capacity	0.01	0.05	0.00	0.00								
Queue Length 95th (m)	0.2	1.3	0.1	0.1								
Control Delay (s)	8.7	9.6	0.5	0.9								
Lane LOS	A	A	A	A								
Approach Delay (s)	8.7	9.6	0.5	0.9								
Approach LOS	A	A										
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			20.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Avonmore Road & County Road 29/Pieur Road

2021 AM Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	6	0	0	0	12	42	0	0	128	32
Future Volume (vph)	32	0	6	0	0	0	12	42	0	0	128	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.979									0.973	
Fl _t Protected		0.959						0.989				
Satd. Flow (prot)	0	1499	0	0	1921	0	0	1668	0	0	1640	0
Fl _t Permitted		0.959						0.989				
Satd. Flow (perm)	0	1499	0	0	1921	0	0	1668	0	0	1640	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			886.9			247.2	
Travel Time (s)		13.9			4.8			39.9			11.1	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	24%	0%	0%	0%	0%	0%	0%	18%	0%	0%	8%	38%
Adj. Flow (vph)	39	0	7	0	0	0	15	51	0	0	156	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	0	0	0	66	0	0	195	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
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
4: Avonmore Road & County Road 29/Pieur Road

2021 AM Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	0	6	0	0	0	12	42	0	0	128	32
Future Volume (Veh/h)	32	0	6	0	0	0	12	42	0	0	128	32
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	39	0	7	0	0	0	15	51	0	0	156	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	256	256	176	264	276	51	195			51		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	256	256	176	264	276	51	195			51		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	99	100	100	100	99			100		
cM capacity (veh/h)	648	644	873	682	628	1023	1390			1568		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	46	0	66	195								
Volume Left	39	0	15	0								
Volume Right	7	0	0	39								
cSH	675	1700	1390	1568								
Volume to Capacity	0.07	0.00	0.01	0.00								
Queue Length 95th (m)	1.7	0.0	0.2	0.0								
Control Delay (s)	10.7	0.0	1.8	0.0								
Lane LOS	B	A	A									
Approach Delay (s)	10.7	0.0	1.8	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.0									
Intersection Capacity Utilization			22.6%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2021 AM Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	566	2	0	204	56	0	2	0	111	0	65
Future Volume (vph)	21	566	2	0	204	56	0	2	0	111	0	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	22	602	2	0	217	60	0	2	0	118	0	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	604	0	0	217	60	0	2	0	0	118	69
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.4%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
5: Avonmore Road & County Road 2

2021 AM Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	566	2	0	204	56	0	2	0	111	0	65
Future Volume (Veh/h)	21	566	2	0	204	56	0	2	0	111	0	65
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	602	2	0	217	60	0	2	0	118	0	69
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												2
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	277			604			898	924	603	864	865	217
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	277			604			898	924	603	864	865	217
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.5
p0 queue free %	98			100			100	99	100	55	100	91
cM capacity (veh/h)	1298			984			236	267	503	264	289	782
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	22	604	217	60	2	187						
Volume Left	22	0	0	0	0	118						
Volume Right	0	2	0	60	0	69						
cSH	1298	1700	984	1700	267	418						
Volume to Capacity	0.02	0.36	0.00	0.04	0.01	0.45						
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.2	17.1						
Control Delay (s)	7.8	0.0	0.0	0.0	18.6	22.1						
Lane LOS	A				C	C						
Approach Delay (s)	0.3		0.0		18.6	22.1						
Approach LOS					C	C						
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			49.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	32.0	12.2
Average Queue (m)	11.7	2.0
95th Queue (m)	24.6	8.1
Link Distance (m)	172.0	233.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.2	24.6	9.8	15.6
Average Queue (m)	6.5	10.7	0.6	0.8
95th Queue (m)	11.0	19.9	4.4	6.9
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	15.0	17.2	5.2
Average Queue (m)	3.0	7.2	0.2
95th Queue (m)	10.9	15.6	2.2
Link Distance (m)	87.5	216.6	140.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Avonmore Road & County Road 29/Pieur Road

Movement	EB	NB
Directions Served	LTR	LTR
Maximum Queue (m)	21.7	4.5
Average Queue (m)	7.8	0.3
95th Queue (m)	17.7	2.7
Link Distance (m)	300.4	878.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	NB	SB	SB
Directions Served	L	LTR	LT	R
Maximum Queue (m)	5.7	6.7	91.3	22.6
Average Queue (m)	1.0	0.5	28.4	13.6
95th Queue (m)	4.9	3.6	67.9	26.1
Link Distance (m)		51.8	387.5	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	80.0			15.0
Storage Blk Time (%)			34	2
Queuing Penalty (veh)			22	3

Network Summary

Network wide Queuing Penalty: 25

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2021 PM Existing Conditions



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	19	23	37	96	100	25
Future Volume (vph)	19	23	37	96	100	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.925			0.973		
Flt Protected	0.978			0.986		
Satd. Flow (prot)	1511	0	0	1878	1851	0
Flt Permitted	0.978			0.986		
Satd. Flow (perm)	1511	0	0	1878	1851	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	20%	11%	3%	0%	0%	5%
Adj. Flow (vph)	20	25	40	103	108	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	0	143	135	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.2% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2021 PM Existing Conditions



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	23	37	96	100	25
Future Volume (Veh/h)	19	23	37	96	100	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	20	25	40	103	108	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	304	122	135			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304	122	135			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.2			
p0 queue free %	97	97	97			
cM capacity (veh/h)	633	906	1443			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	45	143	135			
Volume Left	20	40	0			
Volume Right	25	0	27			
cSH	760	1443	1700			
Volume to Capacity	0.06	0.03	0.08			
Queue Length 95th (m)	1.4	0.6	0.0			
Control Delay (s)	10.0	2.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.0	2.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			27.2%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	37	53	38	22	35	67	13	15	35	6
Future Volume (vph)	4	1	37	53	38	22	35	67	13	15	35	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.880			0.974			0.985			0.985	
Fl _t Protected		0.995			0.977			0.985			0.987	
Satd. Flow (prot)	0	1531	0	0	1786	0	0	1751	0	0	1628	0
Fl _t Permitted		0.995			0.977			0.985			0.987	
Satd. Flow (perm)	0	1531	0	0	1786	0	0	1751	0	0	1628	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	67%	0%	4%	0%	7%	0%	0%	11%	0%	55%	0%	0%
Adj. Flow (vph)	5	1	47	67	48	28	44	85	16	19	44	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	143	0	0	145	0	0	71	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	28.3%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2021 PM Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1	37	53	38	22	35	67	13	15	35	6
Future Volume (Veh/h)	4	1	37	53	38	22	35	67	13	15	35	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	5	1	47	67	48	28	44	85	16	19	44	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	319	275	48	314	271	93	52			101		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	319	275	48	314	271	93	52			101		
tC, single (s)	7.8	6.5	6.2	7.1	6.6	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	4.1	4.0	3.3	3.5	4.1	3.3	2.2			2.7		
p0 queue free %	99	100	95	89	92	97	97			98		
cM capacity (veh/h)	464	608	1015	591	600	970	1567			1217		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	53	143	145	71								
Volume Left	5	67	44	19								
Volume Right	47	28	16	8								
cSH	903	644	1567	1217								
Volume to Capacity	0.06	0.22	0.03	0.02								
Queue Length 95th (m)	1.4	6.4	0.7	0.4								
Control Delay (s)	9.2	12.2	2.4	2.2								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.2	12.2	2.4	2.2								
Approach LOS	A	B										
Intersection Summary												
Average Delay			6.6									
Intersection Capacity Utilization			28.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2021 PM Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	2	35	0	6	0	38	55	4	19	0
Future Volume (vph)	0	0	2	35	0	6	0	38	55	4	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.979			0.920				
Fl _t Protected					0.959						0.991	
Satd. Flow (prot)	0	1662	0	0	1531	0	0	1659	0	0	1904	0
Fl _t Permitted					0.959						0.991	
Satd. Flow (perm)	0	1662	0	0	1531	0	0	1659	0	0	1904	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	21%	0%	0%	0%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	0	3	50	0	9	0	54	79	6	27	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	59	0	0	133	0	0	33	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	21.0%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2021 PM Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	35	0	6	0	38	55	4	19	0
Future Volume (Veh/h)	0	0	2	35	0	6	0	38	55	4	19	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	3	50	0	9	0	54	79	6	27	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	142	172	27	136	132	94	27			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	142	172	27	136	132	94	27			133		
tC, single (s)	7.1	6.5	6.2	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	94	100	99	100			100		
cM capacity (veh/h)	823	722	1054	789	759	969	1600			1464		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	3	59	133	33								
Volume Left	0	50	0	6								
Volume Right	3	9	79	0								
cSH	1054	812	1600	1464								
Volume to Capacity	0.00	0.07	0.00	0.00								
Queue Length 95th (m)	0.1	1.8	0.0	0.1								
Control Delay (s)	8.4	9.8	0.0	1.4								
Lane LOS	A	A		A								
Approach Delay (s)	8.4	9.8	0.0	1.4								
Approach LOS	A	A										
Intersection Summary												
Average Delay				2.8								
Intersection Capacity Utilization				21.0%	ICU Level of Service							A
Analysis Period (min)				15								

Lanes, Volumes, Timings
4: Avonmore Road & County Road 29/Pieur Road

2021 PM Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1	13	2	0	0	13	125	0	0	84	24
Future Volume (vph)	37	1	13	2	0	0	13	125	0	0	84	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.966										0.970
Fl _t Protected		0.965			0.950			0.995				
Satd. Flow (prot)	0	1569	0	0	1825	0	0	1725	0	0	1665	0
Fl _t Permitted		0.965			0.950			0.995				
Satd. Flow (perm)	0	1569	0	0	1825	0	0	1725	0	0	1665	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			886.9			247.2	
Travel Time (s)		13.9			4.8			39.9			11.1	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	10%	0%	27%	0%	0%	0%	9%	11%	0%	0%	11%	15%
Adj. Flow (vph)	46	1	16	2	0	0	16	154	0	0	104	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	2	0	0	170	0	0	134	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	24.0%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
4: Avonmore Road & County Road 29/Pieur Road

2021 PM Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1	13	2	0	0	13	125	0	0	84	24
Future Volume (Veh/h)	37	1	13	2	0	0	13	125	0	0	84	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	46	1	16	2	0	0	16	154	0	0	104	30
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	305	305	119	322	320	154	134			154		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	305	305	119	322	320	154	134			154		
tC, single (s)	7.2	6.5	6.5	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	93	100	98	100	100	100	99			100		
cM capacity (veh/h)	626	605	869	617	593	897	1408			1439		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	63	2	170	134								
Volume Left	46	2	16	0								
Volume Right	16	0	0	30								
cSH	674	617	1408	1439								
Volume to Capacity	0.09	0.00	0.01	0.00								
Queue Length 95th (m)	2.3	0.1	0.3	0.0								
Control Delay (s)	10.9	10.8	0.8	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	10.9	10.8	0.8	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.3									
Intersection Capacity Utilization			24.0%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2021 PM Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	384	2	0	590	166	2	0	4	72	1	95
Future Volume (vph)	52	384	2	0	590	166	2	0	4	72	1	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.910				0.850
Flt Protected	0.950							0.984			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1720	0	0	1745	1633
Flt Permitted	0.950							0.984			0.953	
Satd. Flow (perm)	1706	1864	0	0	1902	1570	0	1720	0	0	1745	1633
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	55	409	2	0	628	177	2	0	4	77	1	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	411	0	0	628	177	0	6	0	0	78	101
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	59.9%						ICU Level of Service B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
5: Avonmore Road & County Road 2

2021 PM Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	384	2	0	590	166	2	0	4	72	1	95
Future Volume (Veh/h)	52	384	2	0	590	166	2	0	4	72	1	95
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	55	409	2	0	628	177	2	0	4	77	1	101
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
2												
Median type												
None												
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume												
805												
411												
1199												
1325												
410												
1151												
1149												
628												
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol												
805												
411												
1199												
1325												
410												
1151												
1149												
628												
tC, single (s)												
4.2												
4.1												
7.1												
6.5												
6.2												
7.1												
6.5												
6.2												
tC, 2 stage (s)												
tF (s)												
2.3												
2.2												
3.5												
4.0												
3.3												
3.5												
4.0												
3.3												
p0 queue free %												
93												
100												
98												
100												
99												
53												
99												
79												
cM capacity (veh/h)												
798												
1159												
122												
146												
646												
162												
186												
487												
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	55	411	628	177	6	179						
Volume Left	55	0	0	0	2	77						
Volume Right	0	2	0	177	4	101						
cSH	798	1700	1159	1700	266	374						
Volume to Capacity	0.07	0.24	0.00	0.10	0.02	0.48						
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.5	19.0						
Control Delay (s)	9.8	0.0	0.0	0.0	18.8	28.1						
Lane LOS	A				C	D						
Approach Delay (s)	1.2		0.0		18.8	28.1						
Approach LOS					C	D						
Intersection Summary												
Average Delay			3.9									
Intersection Capacity Utilization			59.9%			ICU Level of Service			B			
Analysis Period (min)			15									

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	22.4	10.7
Average Queue (m)	8.9	1.3
95th Queue (m)	18.9	6.4
Link Distance (m)	172.0	233.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	19.0	24.0	12.9	16.0
Average Queue (m)	6.6	13.0	1.1	0.8
95th Queue (m)	14.8	20.4	7.3	6.8
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	6.4	20.8	2.6	3.6
Average Queue (m)	0.5	7.7	0.1	0.2
95th Queue (m)	3.8	17.5	2.0	2.2
Link Distance (m)	87.5	216.6	57.6	140.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Avonmore Road & County Road 29/Pieur Road

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	19.3	8.9	4.3
Average Queue (m)	8.1	0.6	0.2
95th Queue (m)	16.4	4.2	1.9
Link Distance (m)	300.4	60.6	878.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	LT	R	LTR	LT	R
Maximum Queue (m)	23.8	0.7	1.2	10.4	104.0	22.6
Average Queue (m)	7.7	0.0	0.0	1.5	37.2	17.0
95th Queue (m)	18.0	0.5	0.5	7.4	87.4	28.5
Link Distance (m)		189.1		51.8	387.5	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	80.0		60.0			15.0
Storage Blk Time (%)					52	13
Queuing Penalty (veh)					49	10

Network Summary

Network wide Queuing Penalty: 59

Lanes, Volumes, Timings
1: Moulinette Road & Hwy 401 EB Ramps

2025 AM Future Background



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	35	68	83	120	42
Future Volume (vph)	23	35	68	83	120	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919			0.965		
Flt Protected	0.981			0.978		
Satd. Flow (prot)	1342	0	0	1854	1795	0
Flt Permitted	0.981			0.978		
Satd. Flow (perm)	1342	0	0	1854	1795	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	55%	12%	3%	0%	3%	4%
Adj. Flow (vph)	27	41	79	97	140	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	0	176	189	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

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
 1: Moulinette Road & Hwy 401 EB Ramps

2025 AM Future Background



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	35	68	83	120	42
Future Volume (Veh/h)	23	35	68	83	120	42
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	27	41	79	97	140	49
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	420	164	189			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	420	164	189			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	94	95	94			
cM capacity (veh/h)	473	855	1379			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	68	176	189			
Volume Left	27	79	0			
Volume Right	41	0	49			
cSH	647	1379	1700			
Volume to Capacity	0.11	0.06	0.11			
Queue Length 95th (m)	2.7	1.4	0.0			
Control Delay (s)	11.2	3.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.2	3.7	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			30.4%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	66	50	26	10	25	65	16	18	54	14
Future Volume (vph)	4	0	66	50	26	10	25	65	16	18	54	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.872			0.984			0.979			0.978	
Flt Protected		0.997			0.972			0.988			0.990	
Satd. Flow (prot)	0	1670	0	0	1662	0	0	1655	0	0	1542	0
Flt Permitted		0.997			0.972			0.988			0.990	
Satd. Flow (perm)	0	1670	0	0	1662	0	0	1655	0	0	1542	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	11%	14%	0%	0%	20%	0%	70%	3%	25%
Adj. Flow (vph)	4	0	69	53	27	11	26	68	17	19	57	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	91	0	0	111	0	0	91	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.1%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2025 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	66	50	26	10	25	65	16	18	54	14
Future Volume (Veh/h)	4	0	66	50	26	10	25	65	16	18	54	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	4	0	69	53	27	11	26	68	17	19	57	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	256	240	64	300	238	76	72			85		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	256	240	64	300	238	76	72			85		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.2	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.3	2.2			2.8		
p0 queue free %	99	100	93	91	96	99	98			98		
cM capacity (veh/h)	654	643	1005	576	621	990	1541			1174		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	73	91	111	91								
Volume Left	4	53	26	19								
Volume Right	69	11	17	15								
cSH	977	621	1541	1174								
Volume to Capacity	0.07	0.15	0.02	0.02								
Queue Length 95th (m)	1.8	3.9	0.4	0.4								
Control Delay (s)	9.0	11.8	1.8	1.8								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.0	11.8	1.8	1.8								
Approach LOS	A	B										
Intersection Summary												
Average Delay			5.7									
Intersection Capacity Utilization			26.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2025 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	45	4	2	5	19	53	5	38	0
Future Volume (vph)	0	0	9	45	4	2	5	19	53	5	38	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.995			0.907				
Flt Protected					0.958			0.997			0.994	
Satd. Flow (prot)	0	1385	0	0	1591	0	0	1481	0	0	1910	0
Flt Permitted					0.958			0.997			0.994	
Satd. Flow (perm)	0	1385	0	0	1591	0	0	1481	0	0	1910	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	20%	17%	0%	0%	0%	0%	25%	0%	0%	0%
Adj. Flow (vph)	0	0	9	47	4	2	5	20	56	5	40	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	53	0	0	81	0	0	45	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			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
 3: Moulinette Road & Private Driveway/County Road 29

2025 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	9	45	4	2	5	19	53	5	38	0
Future Volume (Veh/h)	0	0	9	45	4	2	5	19	53	5	38	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	9	47	4	2	5	20	56	5	40	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	112	136	40	117	108	48	40			76		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	112	136	40	117	108	48	40			76		
tC, single (s)	7.1	6.5	6.4	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	94	99	100	100			100		
cM capacity (veh/h)	861	754	982	814	781	1027	1583			1536		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	9	53	81	45								
Volume Left	0	47	5	5								
Volume Right	9	2	56	0								
cSH	982	817	1583	1536								
Volume to Capacity	0.01	0.06	0.00	0.00								
Queue Length 95th (m)	0.2	1.6	0.1	0.1								
Control Delay (s)	8.7	9.7	0.5	0.8								
Lane LOS	A	A	A	A								
Approach Delay (s)	8.7	9.7	0.5	0.8								
Approach LOS	A	A										
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			21.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 4: Avonmore Road & County Road 29/Pieur Road

2025 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	0	7	0	0	0	13	45	0	0	139	35
Future Volume (vph)	39	0	7	0	0	0	13	45	0	0	139	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.979									0.973	
Fl _t Protected		0.960						0.989				
Satd. Flow (prot)	0	1502	0	0	1921	0	0	1667	0	0	1639	0
Fl _t Permitted		0.960						0.989				
Satd. Flow (perm)	0	1502	0	0	1921	0	0	1667	0	0	1639	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			886.9			247.2	
Travel Time (s)		13.9			4.8			39.9			11.1	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	24%	0%	0%	0%	0%	0%	0%	18%	0%	0%	8%	38%
Adj. Flow (vph)	48	0	9	0	0	0	16	55	0	0	170	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	0	0	0	71	0	0	213	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	23.7%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
4: Avonmore Road & County Road 29/Pieur Road

2025 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	0	7	0	0	0	13	45	0	0	139	35
Future Volume (Veh/h)	39	0	7	0	0	0	13	45	0	0	139	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	48	0	9	0	0	0	16	55	0	0	170	43
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	278	278	192	288	300	55	213			55		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	278	278	192	288	300	55	213			55		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	99	100	100	100	99			100		
cM capacity (veh/h)	626	625	855	656	609	1018	1369			1563		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	57	0	71	213								
Volume Left	48	0	16	0								
Volume Right	9	0	0	43								
cSH	654	1700	1369	1563								
Volume to Capacity	0.09	0.00	0.01	0.00								
Queue Length 95th (m)	2.2	0.0	0.3	0.0								
Control Delay (s)	11.0	0.0	1.8	0.0								
Lane LOS	B	A	A									
Approach Delay (s)	11.0	0.0	1.8	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			23.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2025 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	613	2	0	221	61	0	2	0	120	0	70
Future Volume (vph)	23	613	2	0	221	61	0	2	0	120	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.601										0.757	
Satd. Flow (perm)	1155	1884	0	0	1847	1372	0	1921	0	0	1359	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						65						74
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	24	652	2	0	235	65	0	2	0	128	0	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	654	0	0	235	65	0	2	0	0	128	74
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm		NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

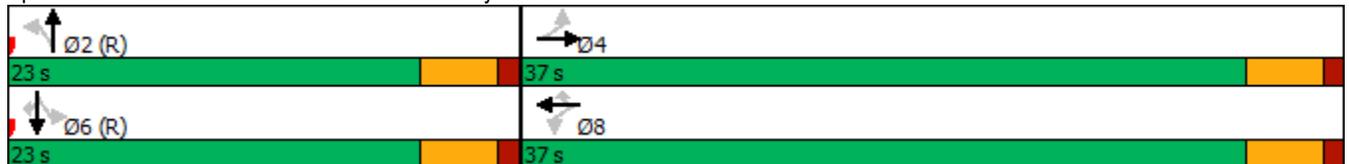
2025 AM Future Background

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	37.0	37.0		37.0	37.0	37.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	61.7%	61.7%		61.7%	61.7%	61.7%	38.3%	38.3%		38.3%	38.3%	38.3%
Maximum Green (s)	32.5	32.5		32.5	32.5	32.5	18.5	18.5		18.5	18.5	18.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.5	4.5			4.5	4.5		4.5			4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	26.8	26.8			26.8	26.8		24.2			24.2	24.2
Actuated g/C Ratio	0.45	0.45			0.45	0.45		0.40			0.40	0.40
v/c Ratio	0.05	0.78			0.29	0.10		0.00			0.23	0.12
Control Delay	7.5	20.6			10.4	2.6		14.0			15.5	5.1
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	7.5	20.6			10.4	2.6		14.0			15.5	5.1
LOS	A	C			B	A		B			B	A
Approach Delay		20.1			8.7			14.0			11.7	
Approach LOS		C			A			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 15.8 Intersection LOS: B
 Intersection Capacity Utilization 53.2% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: Avonmore Road & County Road 2



Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	26.5	14.4	1.3
Average Queue (m)	11.6	3.0	0.0
95th Queue (m)	23.3	10.3	0.9
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	12.8	24.4	6.6	9.0
Average Queue (m)	7.3	12.1	0.3	0.4
95th Queue (m)	11.4	20.9	3.0	3.9
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	17.6	18.0	1.6	5.3
Average Queue (m)	3.1	7.7	0.1	0.2
95th Queue (m)	11.4	15.2	1.1	2.5
Link Distance (m)	87.5	216.6	57.6	140.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Avonmore Road & County Road 29/Pieur Road

Movement	EB	NB
Directions Served	LTR	LTR
Maximum Queue (m)	18.5	7.4
Average Queue (m)	8.0	0.4
95th Queue (m)	16.6	3.1
Link Distance (m)	300.4	878.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	16.7	113.8	37.5	18.9	8.3	38.1	22.4
Average Queue (m)	4.8	51.3	14.2	4.0	0.5	13.9	8.7
95th Queue (m)	12.5	89.7	28.6	12.1	3.7	28.8	20.9
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)		1				8	2
Queuing Penalty (veh)		0				6	2

Network Summary

Network wide Queuing Penalty: 8

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2025 AM Future Background (unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	613	2	0	221	61	0	2	0	120	0	70
Future Volume (vph)	23	613	2	0	221	61	0	2	0	120	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	24	652	2	0	235	65	0	2	0	128	0	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	654	0	0	235	65	0	2	0	0	128	74
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	52.4%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2025 AM Future Background (unsignalized)
 5: Avonmore Road & County Road 2

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	613	2	0	221	61	0	2	0	120	0	70
Future Volume (Veh/h)	23	613	2	0	221	61	0	2	0	120	0	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	24	652	2	0	235	65	0	2	0	128	0	74
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												2
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	300			654			973	1001	653	936	937	235
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	300			654			973	1001	653	936	937	235
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.5
p0 queue free %	98			100			100	99	100	46	100	90
cM capacity (veh/h)	1273			943			208	240	471	235	262	764
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	24	654	235	65	2	202						
Volume Left	24	0	0	0	0	128						
Volume Right	0	2	0	65	0	74						
cSH	1273	1700	943	1700	240	371						
Volume to Capacity	0.02	0.38	0.00	0.04	0.01	0.54						
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.2	23.7						
Control Delay (s)	7.9	0.0	0.0	0.0	20.1	27.3						
Lane LOS	A				C	D						
Approach Delay (s)	0.3		0.0		20.1	27.3						
Approach LOS					C	D						
Intersection Summary												
Average Delay			4.9									
Intersection Capacity Utilization			52.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	NB	SB	SB
Directions Served	L	LTR	LT	R
Maximum Queue (m)	8.4	8.3	108.0	22.6
Average Queue (m)	2.0	0.6	43.3	15.5
95th Queue (m)	6.9	4.1	93.3	29.2
Link Distance (m)		51.8	387.5	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	80.0			15.0
Storage Blk Time (%)			52	4
Queuing Penalty (veh)			36	5

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2025 PM Future Background



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	25	40	104	108	27
Future Volume (vph)	21	25	40	104	108	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.927			0.973		
Flt Protected	0.978			0.986		
Satd. Flow (prot)	1513	0	0	1879	1851	0
Flt Permitted	0.978			0.986		
Satd. Flow (perm)	1513	0	0	1879	1851	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	20%	11%	3%	0%	0%	5%
Adj. Flow (vph)	23	27	43	112	116	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	155	145	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.3% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2025 PM Future Background



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	25	40	104	108	27
Future Volume (Veh/h)	21	25	40	104	108	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	23	27	43	112	116	29
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	328	130	145			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	328	130	145			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.2			
p0 queue free %	96	97	97			
cM capacity (veh/h)	612	896	1431			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	50	155	145			
Volume Left	23	43	0			
Volume Right	27	0	29			
cSH	738	1431	1700			
Volume to Capacity	0.07	0.03	0.09			
Queue Length 95th (m)	1.7	0.7	0.0			
Control Delay (s)	10.2	2.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.2	2.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	2.5					
Intersection Capacity Utilization	28.3%			ICU Level of Service	A	
Analysis Period (min)	15					

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	45	57	41	24	38	73	14	16	38	6
Future Volume (vph)	5	1	45	57	41	24	38	73	14	16	38	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.880			0.974			0.985			0.986	
Flt Protected		0.995			0.977			0.985			0.987	
Satd. Flow (prot)	0	1531	0	0	1786	0	0	1752	0	0	1633	0
Flt Permitted		0.995			0.977			0.985			0.987	
Satd. Flow (perm)	0	1531	0	0	1786	0	0	1752	0	0	1633	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	67%	0%	4%	0%	7%	0%	0%	11%	0%	55%	0%	0%
Adj. Flow (vph)	6	1	57	72	52	30	48	92	18	20	48	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	154	0	0	158	0	0	76	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	29.6%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2025 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	45	57	41	24	38	73	14	16	38	6
Future Volume (Veh/h)	5	1	45	57	41	24	38	73	14	16	38	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	6	1	57	72	52	30	48	92	18	20	48	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	345	298	52	346	293	101	56			110		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345	298	52	346	293	101	56			110		
tC, single (s)	7.8	6.5	6.2	7.1	6.6	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	4.1	4.0	3.3	3.5	4.1	3.3	2.2			2.7		
p0 queue free %	99	100	94	87	91	97	97			98		
cM capacity (veh/h)	439	588	1010	556	581	960	1562			1207		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	64	154	158	76								
Volume Left	6	72	48	20								
Volume Right	57	30	18	8								
cSH	891	615	1562	1207								
Volume to Capacity	0.07	0.25	0.03	0.02								
Queue Length 95th (m)	1.8	7.5	0.7	0.4								
Control Delay (s)	9.4	12.8	2.4	2.2								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.4	12.8	2.4	2.2								
Approach LOS	A	B										
Intersection Summary												
Average Delay			6.9									
Intersection Capacity Utilization			29.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2025 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	2	43	0	7	0	41	60	4	21	0
Future Volume (vph)	0	0	2	43	0	7	0	41	60	4	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.981			0.920				
Fl _t Protected					0.959						0.992	
Satd. Flow (prot)	0	1662	0	0	1531	0	0	1659	0	0	1906	0
Fl _t Permitted					0.959						0.992	
Satd. Flow (perm)	0	1662	0	0	1531	0	0	1659	0	0	1906	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	21%	0%	0%	0%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	0	3	61	0	10	0	59	86	6	30	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	71	0	0	145	0	0	36	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	22.0%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2025 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	43	0	7	0	41	60	4	21	0
Future Volume (Veh/h)	0	0	2	43	0	7	0	41	60	4	21	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	3	61	0	10	0	59	86	6	30	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	154	187	30	147	144	102	30			145		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	154	187	30	147	144	102	30			145		
tC, single (s)	7.1	6.5	6.2	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	92	100	99	100			100		
cM capacity (veh/h)	806	708	1050	775	748	959	1596			1450		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	3	71	145	36								
Volume Left	0	61	0	6								
Volume Right	3	10	86	0								
cSH	1050	797	1596	1450								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.1	2.2	0.0	0.1								
Control Delay (s)	8.4	10.0	0.0	1.3								
Lane LOS	A	A		A								
Approach Delay (s)	8.4	10.0	0.0	1.3								
Approach LOS	A	A										
Intersection Summary												
Average Delay			3.1									
Intersection Capacity Utilization			22.0%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Avonmore Road & County Road 29/Pieur Road

2025 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	1	16	2	0	0	14	135	0	0	91	26
Future Volume (vph)	45	1	16	2	0	0	14	135	0	0	91	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.965										0.970
Fl _t Protected		0.965			0.950			0.995				
Satd. Flow (prot)	0	1565	0	0	1825	0	0	1725	0	0	1665	0
Fl _t Permitted		0.965			0.950			0.995				
Satd. Flow (perm)	0	1565	0	0	1825	0	0	1725	0	0	1665	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			886.9			247.2	
Travel Time (s)		13.9			4.8			39.9			11.1	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	10%	0%	27%	0%	0%	0%	9%	11%	0%	0%	11%	15%
Adj. Flow (vph)	56	1	20	2	0	0	17	167	0	0	112	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	0	0	2	0	0	184	0	0	144	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	24.5%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 4: Avonmore Road & County Road 29/Pieur Road

2025 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1	16	2	0	0	14	135	0	0	91	26
Future Volume (Veh/h)	45	1	16	2	0	0	14	135	0	0	91	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	56	1	20	2	0	0	17	167	0	0	112	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	329	329	128	350	345	167	144			167		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	329	329	128	350	345	167	144			167		
tC, single (s)	7.2	6.5	6.5	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	91	100	98	100	100	100	99			100		
cM capacity (veh/h)	604	586	859	588	574	882	1397			1423		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	77	2	184	144								
Volume Left	56	2	17	0								
Volume Right	20	0	0	32								
cSH	654	588	1397	1423								
Volume to Capacity	0.12	0.00	0.01	0.00								
Queue Length 95th (m)	3.0	0.1	0.3	0.0								
Control Delay (s)	11.2	11.1	0.8	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.2	11.1	0.8	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			24.5%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2025 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	416	2	0	639	180	2	0	4	78	1	103
Future Volume (vph)	56	416	2	0	639	180	2	0	4	78	1	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.910				0.850
Flt Protected	0.950							0.984			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1720	0	0	1745	1633
Flt Permitted	0.180							0.959			0.768	
Satd. Flow (perm)	323	1864	0	0	1902	1570	0	1677	0	0	1406	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				191		27				110
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	60	443	2	0	680	191	2	0	4	83	1	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	445	0	0	680	191	0	6	0	0	84	110
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	20.5	12.7	1.2
Average Queue (m)	8.6	1.4	0.0
95th Queue (m)	17.6	6.9	0.8
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	19.3	23.3	9.4	13.6
Average Queue (m)	7.2	12.0	0.6	0.7
95th Queue (m)	14.2	19.6	4.7	6.3
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (m)	6.5	19.8
Average Queue (m)	0.3	8.0
95th Queue (m)	3.0	17.3
Link Distance (m)	87.5	216.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Avonmore Road & County Road 29/Pieur Road

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	23.1	8.9	4.5
Average Queue (m)	9.7	0.6	0.2
95th Queue (m)	18.3	4.1	2.6
Link Distance (m)	300.4	60.6	878.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	41.1	59.4	76.5	21.2	6.7	36.7	21.6
Average Queue (m)	12.7	25.2	42.8	7.5	0.8	12.3	10.8
95th Queue (m)	29.1	47.0	70.6	16.0	4.8	27.4	21.4
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)			2			6	5
Queuing Penalty (veh)			3			6	4

Network Summary

Network wide Queuing Penalty: 13

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2025 PM Future Background (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	416	2	0	639	180	2	0	4	78	1	103
Future Volume (vph)	56	416	2	0	639	180	2	0	4	78	1	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.910				0.850
Flt Protected	0.950							0.984			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1720	0	0	1745	1633
Flt Permitted	0.950							0.984			0.953	
Satd. Flow (perm)	1706	1864	0	0	1902	1570	0	1720	0	0	1745	1633
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	60	443	2	0	680	191	2	0	4	83	1	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	445	0	0	680	191	0	6	0	0	84	110
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	64.0%						ICU Level of Service C					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2025 PM Future Background (Unsignalized)
 5: Avonmore Road & County Road 2

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	416	2	0	639	180	2	0	4	78	1	103
Future Volume (Veh/h)	56	416	2	0	639	180	2	0	4	78	1	103
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	60	443	2	0	680	191	2	0	4	83	1	110
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												2
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	871			445			1300	1435	444	1247	1245	680
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	871			445			1300	1435	444	1247	1245	680
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			100			98	100	99	40	99	76
cM capacity (veh/h)	753			1126			99	124	618	138	162	454
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	60	445	680	191	6	194						
Volume Left	60	0	0	0	2	83						
Volume Right	0	2	0	191	4	110						
cSH	753	1700	1126	1700	225	289						
Volume to Capacity	0.08	0.26	0.00	0.11	0.03	0.67						
Queue Length 95th (m)	2.0	0.0	0.0	0.0	0.6	33.8						
Control Delay (s)	10.2	0.0	0.0	0.0	21.5	39.4						
Lane LOS	B				C	E						
Approach Delay (s)	1.2		0.0		21.5	39.4						
Approach LOS					C	E						
Intersection Summary												
Average Delay			5.3									
Intersection Capacity Utilization			64.0%		ICU Level of Service				C			
Analysis Period (min)			15									

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	LT	R	LTR	LT	R
Maximum Queue (m)	28.5	0.7	1.5	9.5	194.0	22.6
Average Queue (m)	7.7	0.0	0.0	1.9	84.8	17.5
95th Queue (m)	18.6	0.5	0.6	7.5	203.4	30.4
Link Distance (m)		189.1		51.8	387.5	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	80.0		60.0			15.0
Storage Blk Time (%)					70	19
Queuing Penalty (veh)					72	15

Lanes, Volumes, Timings
1: Moulinette Road & Hwy 401 EB Ramps

2030 AM Future Background



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	38	75	92	133	47
Future Volume (vph)	25	38	75	92	133	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919			0.965		
Flt Protected	0.981			0.978		
Satd. Flow (prot)	1342	0	0	1854	1795	0
Flt Permitted	0.981			0.978		
Satd. Flow (perm)	1342	0	0	1854	1795	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	55%	12%	3%	0%	3%	4%
Adj. Flow (vph)	29	44	87	107	155	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	0	194	210	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2030 AM Future Background



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	38	75	92	133	47
Future Volume (Veh/h)	25	38	75	92	133	47
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	29	44	87	107	155	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	464	182	210			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	464	182	210			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	93	95	94			
cM capacity (veh/h)	441	835	1355			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	73	194	210			
Volume Left	29	87	0			
Volume Right	44	0	55			
cSH	616	1355	1700			
Volume to Capacity	0.12	0.06	0.12			
Queue Length 95th (m)	3.0	1.6	0.0			
Control Delay (s)	11.6	3.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.6	3.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			32.6%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	5	0	84	55	29	11	27	72	18	20	60	16
Future Volume (vph)	5	0	84	55	29	11	27	72	18	20	60	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.872			0.984			0.979			0.977	
Flt Protected		0.997			0.972			0.989			0.990	
Satd. Flow (prot)	0	1670	0	0	1661	0	0	1655	0	0	1540	0
Flt Permitted		0.997			0.972			0.989			0.990	
Satd. Flow (perm)	0	1670	0	0	1661	0	0	1655	0	0	1540	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	11%	14%	0%	0%	20%	0%	70%	3%	25%
Adj. Flow (vph)	5	0	88	58	31	12	28	76	19	21	63	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	0	101	0	0	123	0	0	101	0
Enter Blocked Intersection	No	No	No									
Lane Alignment	Left	Left	Right									
Median Width(m)		0.0			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2030 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	84	55	29	11	27	72	18	20	60	16
Future Volume (Veh/h)	5	0	84	55	29	11	27	72	18	20	60	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	0	88	58	31	12	28	76	19	21	63	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	282	264	72	343	264	86	80			95		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	282	264	72	343	264	86	80			95		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.2	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.3	2.2			2.8		
p0 queue free %	99	100	91	89	95	99	98			98		
cM capacity (veh/h)	622	621	996	527	599	979	1531			1163		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	93	101	123	101								
Volume Left	5	58	28	21								
Volume Right	88	12	19	17								
cSH	965	580	1531	1163								
Volume to Capacity	0.10	0.17	0.02	0.02								
Queue Length 95th (m)	2.4	4.8	0.4	0.4								
Control Delay (s)	9.1	12.5	1.8	1.8								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.1	12.5	1.8	1.8								
Approach LOS	A	B										
Intersection Summary												
Average Delay			6.0									
Intersection Capacity Utilization			27.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2030 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	10	57	5	3	6	22	59	6	42	0
Future Volume (vph)	0	0	10	57	5	3	6	22	59	6	42	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.994			0.908				
Fl _t Protected					0.958			0.997			0.994	
Satd. Flow (prot)	0	1385	0	0	1591	0	0	1486	0	0	1910	0
Fl _t Permitted					0.958			0.997			0.994	
Satd. Flow (perm)	0	1385	0	0	1591	0	0	1486	0	0	1910	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	20%	17%	0%	0%	0%	0%	25%	0%	0%	0%
Adj. Flow (vph)	0	0	11	60	5	3	6	23	62	6	44	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	68	0	0	91	0	0	50	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	22.9%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2030 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	57	5	3	6	22	59	6	42	0
Future Volume (Veh/h)	0	0	10	57	5	3	6	22	59	6	42	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	11	60	5	3	6	23	62	6	44	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	128	153	44	133	122	54	44			85		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	128	153	44	133	122	54	44			85		
tC, single (s)	7.1	6.5	6.4	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	92	99	100	100			100		
cM capacity (veh/h)	839	737	977	792	766	1019	1577			1524		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	11	68	91	50								
Volume Left	0	60	6	6								
Volume Right	11	3	62	0								
cSH	977	797	1577	1524								
Volume to Capacity	0.01	0.09	0.00	0.00								
Queue Length 95th (m)	0.3	2.1	0.1	0.1								
Control Delay (s)	8.7	9.9	0.5	0.9								
Lane LOS	A	A	A	A								
Approach Delay (s)	8.7	9.9	0.5	0.9								
Approach LOS	A	A										
Intersection Summary												
Average Delay			3.9									
Intersection Capacity Utilization			22.9%		ICU Level of Service		A					
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Avonmore Road & County Road 29/Pieur Road

2030 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	0	9	0	0	0	14	50	0	0	153	38
Future Volume (vph)	50	0	9	0	0	0	14	50	0	0	153	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.979									0.973	
Fl _t Protected		0.959						0.989				
Satd. Flow (prot)	0	1499	0	0	1921	0	0	1666	0	0	1641	0
Fl _t Permitted		0.959						0.989				
Satd. Flow (perm)	0	1499	0	0	1921	0	0	1666	0	0	1641	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			886.9			247.2	
Travel Time (s)		13.9			4.8			39.9			11.1	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	24%	0%	0%	0%	0%	0%	0%	18%	0%	0%	8%	38%
Adj. Flow (vph)	61	0	11	0	0	0	17	61	0	0	187	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	72	0	0	0	0	0	78	0	0	233	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	24.8%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
4: Avonmore Road & County Road 29/Pieur Road

2030 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	0	9	0	0	0	14	50	0	0	153	38
Future Volume (Veh/h)	50	0	9	0	0	0	14	50	0	0	153	38
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	61	0	11	0	0	0	17	61	0	0	187	46
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	305	305	210	316	328	61	233			61		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	305	305	210	316	328	61	233			61		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	100	99	100	100	100	99			100		
cM capacity (veh/h)	601	604	835	626	586	1010	1346			1555		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	0	78	233								
Volume Left	61	0	17	0								
Volume Right	11	0	0	46								
cSH	627	1700	1346	1555								
Volume to Capacity	0.11	0.00	0.01	0.00								
Queue Length 95th (m)	2.9	0.0	0.3	0.0								
Control Delay (s)	11.5	0.0	1.8	0.0								
Lane LOS	B	A	A									
Approach Delay (s)	11.5	0.0	1.8	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			24.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2030 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	676	2	0	244	67	0	2	0	133	0	78
Future Volume (vph)	25	676	2	0	244	67	0	2	0	133	0	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.581										0.757	
Satd. Flow (perm)	1116	1884	0	0	1847	1372	0	1921	0	0	1359	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						71						83
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	27	719	2	0	260	71	0	2	0	141	0	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	721	0	0	260	71	0	2	0	0	141	83
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm		NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	28.2	18.0
Average Queue (m)	12.9	4.5
95th Queue (m)	23.5	13.4
Link Distance (m)	172.0	233.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.7	26.6	11.4	10.9
Average Queue (m)	8.1	12.5	0.5	0.8
95th Queue (m)	12.9	21.6	4.6	6.1
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	13.5	19.2	1.6
Average Queue (m)	3.0	9.2	0.1
95th Queue (m)	10.3	16.8	1.1
Link Distance (m)	87.5	216.6	57.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Avonmore Road & County Road 29/Pieur Road

Movement	EB	NB
Directions Served	LTR	LTR
Maximum Queue (m)	25.6	7.8
Average Queue (m)	10.0	0.5
95th Queue (m)	20.9	3.4
Link Distance (m)	300.4	878.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	15.2	106.2	34.8	15.8	5.0	47.3	22.7
Average Queue (m)	4.1	53.2	14.4	3.9	0.3	16.4	11.0
95th Queue (m)	11.8	89.0	28.9	10.8	2.6	35.0	24.4
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)		2				11	2
Queuing Penalty (veh)		0				8	3

Network Summary

Network wide Queuing Penalty: 12

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2030 AM Future Background (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	676	2	0	244	67	0	2	0	133	0	78
Future Volume (vph)	25	676	2	0	244	67	0	2	0	133	0	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	27	719	2	0	260	71	0	2	0	141	0	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	721	0	0	260	71	0	2	0	0	141	83
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	56.4%						ICU Level of Service B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2030 AM Future Background (Unsignalized)

5: Avonmore Road & County Road 2

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	25	676	2	0	244	67	0	2	0	133	0	78								
Future Volume (Veh/h)	25	676	2	0	244	67	0	2	0	133	0	78								
Sign Control		Free			Free			Stop			Stop									
Grade		0%			0%			0%			0%									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94								
Hourly flow rate (vph)	27	719	2	0	260	71	0	2	0	141	0	83								
Pedestrians																				
Lane Width (m)																				
Walking Speed (m/s)																				
Percent Blockage																				
Right turn flare (veh)												2								
Median type			None			None														
Median storage (veh)																				
Upstream signal (m)																				
pX, platoon unblocked																				
vC, conflicting volume	331				721				1076		1105		720		1034		1035		260	
vC1, stage 1 conf vol																				
vC2, stage 2 conf vol																				
vCu, unblocked vol	331				721				1076		1105		720		1034		1035		260	
tC, single (s)	4.1				4.1				7.1		6.5		6.2		7.2		6.5		6.4	
tC, 2 stage (s)																				
tF (s)	2.2				2.2				3.5		4.0		3.3		3.6		4.0		3.5	
p0 queue free %	98				100				100		99		100		30		100		89	
cM capacity (veh/h)	1240				890				174		208		431		201		229		739	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1														
Volume Total	27	721	260	71	2	224														
Volume Left	27	0	0	0	0	141														
Volume Right	0	2	0	71	0	83														
cSH	1240	1700	890	1700	208	305														
Volume to Capacity	0.02	0.42	0.00	0.04	0.01	0.74														
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.2	41.2														
Control Delay (s)	8.0	0.0	0.0	0.0	22.5	43.6														
Lane LOS	A				C		E													
Approach Delay (s)	0.3		0.0		22.5		43.6													
Approach LOS					C		E													
Intersection Summary																				
Average Delay			7.7																	
Intersection Capacity Utilization			56.4%			ICU Level of Service			B											
Analysis Period (min)			15																	

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	NB	SB	SB
Directions Served	L	LTR	LT	R
Maximum Queue (m)	10.2	6.7	232.1	23.2
Average Queue (m)	2.0	0.6	128.0	16.9
95th Queue (m)	7.3	3.9	285.9	31.5
Link Distance (m)		51.8	387.5	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	80.0			15.0
Storage Blk Time (%)			76	6
Queuing Penalty (veh)			59	8

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2030 PM Future Background



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	27	44	115	120	30
Future Volume (vph)	23	27	44	115	120	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.927			0.973		
Flt Protected	0.977			0.986		
Satd. Flow (prot)	1511	0	0	1879	1851	0
Flt Permitted	0.977			0.986		
Satd. Flow (perm)	1511	0	0	1879	1851	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	20%	11%	3%	0%	0%	5%
Adj. Flow (vph)	25	29	47	124	129	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	0	0	171	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.0% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2030 PM Future Background



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	27	44	115	120	30
Future Volume (Veh/h)	23	27	44	115	120	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	25	29	47	124	129	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	363	145	161			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	363	145	161			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.2			
p0 queue free %	96	97	97			
cM capacity (veh/h)	582	879	1412			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	54	171	161			
Volume Left	25	47	0			
Volume Right	29	0	32			
cSH	711	1412	1700			
Volume to Capacity	0.08	0.03	0.09			
Queue Length 95th (m)	1.9	0.8	0.0			
Control Delay (s)	10.5	2.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.5	2.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			30.0%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	2	57	63	45	26	42	80	16	18	42	7
Future Volume (vph)	6	2	57	63	45	26	42	80	16	18	42	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.883			0.974			0.984			0.986	
Fl _t Protected		0.995			0.977			0.985			0.987	
Satd. Flow (prot)	0	1535	0	0	1786	0	0	1750	0	0	1627	0
Fl _t Permitted		0.995			0.977			0.985			0.987	
Satd. Flow (perm)	0	1535	0	0	1786	0	0	1750	0	0	1627	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	67%	0%	4%	0%	7%	0%	0%	11%	0%	55%	0%	0%
Adj. Flow (vph)	8	3	72	80	57	33	53	101	20	23	53	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	0	0	170	0	0	174	0	0	85	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2030 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	2	57	63	45	26	42	80	16	18	42	7
Future Volume (Veh/h)	6	2	57	63	45	26	42	80	16	18	42	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	8	3	72	80	57	33	53	101	20	23	53	9
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	382	330	58	394	325	111	62			121		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	382	330	58	394	325	111	62			121		
tC, single (s)	7.8	6.5	6.2	7.1	6.6	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	4.1	4.0	3.3	3.5	4.1	3.3	2.2			2.7		
p0 queue free %	98	99	93	84	90	97	97			98		
cM capacity (veh/h)	405	561	1003	505	554	948	1554			1195		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	83	170	174	85								
Volume Left	8	80	53	23								
Volume Right	72	33	20	9								
cSH	857	574	1554	1195								
Volume to Capacity	0.10	0.30	0.03	0.02								
Queue Length 95th (m)	2.4	9.4	0.8	0.4								
Control Delay (s)	9.7	13.9	2.4	2.3								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.7	13.9	2.4	2.3								
Approach LOS	A	B										
Intersection Summary												
Average Delay			7.4									
Intersection Capacity Utilization			31.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
3: Moulinette Road & Private Driveway/County Road 29

2030 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	2	54	0	9	0	45	66	5	23	0
Future Volume (vph)	0	0	2	54	0	9	0	45	66	5	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.980			0.920				
Fl _t Protected					0.959						0.991	
Satd. Flow (prot)	0	1662	0	0	1531	0	0	1659	0	0	1904	0
Fl _t Permitted					0.959						0.991	
Satd. Flow (perm)	0	1662	0	0	1531	0	0	1659	0	0	1904	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	21%	0%	0%	0%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	0	3	77	0	13	0	64	94	7	33	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	90	0	0	158	0	0	40	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2030 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	54	0	9	0	45	66	5	23	0
Future Volume (Veh/h)	0	0	2	54	0	9	0	45	66	5	23	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	3	77	0	13	0	64	94	7	33	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	171	205	33	161	158	111	33			158		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	171	205	33	161	158	111	33			158		
tC, single (s)	7.1	6.5	6.2	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	90	100	99	100			100		
cM capacity (veh/h)	783	692	1046	758	734	948	1592			1434		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	3	90	158	40								
Volume Left	0	77	0	7								
Volume Right	3	13	94	0								
cSH	1046	781	1592	1434								
Volume to Capacity	0.00	0.12	0.00	0.00								
Queue Length 95th (m)	0.1	3.0	0.0	0.1								
Control Delay (s)	8.5	10.2	0.0	1.3								
Lane LOS	A	B		A								
Approach Delay (s)	8.5	10.2	0.0	1.3								
Approach LOS	A	B										
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			23.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Avonmore Road & County Road 29/Pieur Road

2030 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	2	20	2	0	0	16	149	0	0	100	29
Future Volume (vph)	57	2	20	2	0	0	16	149	0	0	100	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.965										0.969
Fl _t Protected		0.965			0.950			0.995				
Satd. Flow (prot)	0	1567	0	0	1825	0	0	1725	0	0	1664	0
Fl _t Permitted		0.965			0.950			0.995				
Satd. Flow (perm)	0	1567	0	0	1825	0	0	1725	0	0	1664	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			886.9			247.2	
Travel Time (s)		13.9			4.8			39.9			11.1	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	10%	0%	27%	0%	0%	0%	9%	11%	0%	0%	11%	15%
Adj. Flow (vph)	70	2	25	2	0	0	20	184	0	0	123	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	97	0	0	2	0	0	204	0	0	159	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	29.8%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
4: Avonmore Road & County Road 29/Pieur Road

2030 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	2	20	2	0	0	16	149	0	0	100	29
Future Volume (Veh/h)	57	2	20	2	0	0	16	149	0	0	100	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	70	2	25	2	0	0	20	184	0	0	123	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	365	365	141	391	383	184	159			184		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	365	365	141	391	383	184	159			184		
tC, single (s)	7.2	6.5	6.5	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	88	100	97	100	100	100	99			100		
cM capacity (veh/h)	570	558	845	547	545	864	1379			1403		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	97	2	204	159								
Volume Left	70	2	20	0								
Volume Right	25	0	0	36								
cSH	622	547	1379	1403								
Volume to Capacity	0.16	0.00	0.01	0.00								
Queue Length 95th (m)	4.2	0.1	0.3	0.0								
Control Delay (s)	11.9	11.6	0.9	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.9	11.6	0.9	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.9									
Intersection Capacity Utilization			29.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2030 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	459	2	0	705	198	2	0	5	86	1	114
Future Volume (vph)	62	459	2	0	705	198	2	0	5	86	1	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.904				0.850
Flt Protected	0.950							0.986			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1712	0	0	1745	1633
Flt Permitted	0.147							0.961			0.758	
Satd. Flow (perm)	264	1864	0	0	1902	1570	0	1669	0	0	1388	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				211		27				121
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	66	488	2	0	750	211	2	0	5	91	1	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	490	0	0	750	211	0	7	0	0	92	121
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	26.5	14.6
Average Queue (m)	9.3	2.6
95th Queue (m)	20.1	9.8
Link Distance (m)	172.0	233.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	18.7	25.9	9.7	12.5
Average Queue (m)	8.1	13.0	0.7	0.6
95th Queue (m)	15.2	21.2	4.8	4.9
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	8.4	23.4	3.6
Average Queue (m)	0.4	8.9	0.1
95th Queue (m)	3.3	18.4	1.8
Link Distance (m)	87.5	216.6	140.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Avonmore Road & County Road 29/Pieur Road

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	23.9	8.8	7.3
Average Queue (m)	10.0	0.9	0.3
95th Queue (m)	18.1	5.4	2.7
Link Distance (m)	300.4	60.6	878.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	56.3	78.6	103.8	52.9	11.0	43.7	22.5
Average Queue (m)	21.5	28.1	47.2	10.8	1.3	14.8	12.8
95th Queue (m)	51.3	58.8	88.2	36.7	6.6	32.1	23.7
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)	1	0	4			6	7
Queuing Penalty (veh)	5	0	7			7	6

Network Summary

Network wide Queuing Penalty: 26

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2030 PM Future Background (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	459	2	0	705	198	2	0	5	86	1	114
Future Volume (vph)	62	459	2	0	705	198	2	0	5	86	1	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.904				0.850
Flt Protected	0.950							0.986			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1712	0	0	1745	1633
Flt Permitted	0.950							0.986			0.953	
Satd. Flow (perm)	1706	1864	0	0	1902	1570	0	1712	0	0	1745	1633
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	66	488	2	0	750	211	2	0	5	91	1	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	490	0	0	750	211	0	7	0	0	92	121
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	69.7%						ICU Level of Service C					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2030 PM Future Background (Unsignalized) 5: Avonmore Road & County Road 2

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	459	2	0	705	198	2	0	5	86	1	114
Future Volume (Veh/h)	62	459	2	0	705	198	2	0	5	86	1	114
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	66	488	2	0	750	211	2	0	5	91	1	121
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												2
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	961			490			1432	1582	489	1375	1372	750
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	961			490			1432	1582	489	1375	1372	750
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			97	100	99	18	99	71
cM capacity (veh/h)	696			1084			74	99	583	111	133	415
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	66	490	750	211	7	213						
Volume Left	66	0	0	0	2	91						
Volume Right	0	2	0	211	5	121						
cSH	696	1700	1084	1700	196	224						
Volume to Capacity	0.09	0.29	0.00	0.12	0.04	0.95						
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.8	62.9						
Control Delay (s)	10.7	0.0	0.0	0.0	24.0	93.6						
Lane LOS	B				C	F						
Approach Delay (s)	1.3		0.0		24.0	93.6						
Approach LOS					C	F						
Intersection Summary												
Average Delay			12.0									
Intersection Capacity Utilization			69.7%		ICU Level of Service				C			
Analysis Period (min)			15									

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	WB	NB	SB	SB
Directions Served	L	R	LTR	LT	R
Maximum Queue (m)	27.9	3.2	13.4	340.7	22.6
Average Queue (m)	8.9	0.2	2.5	264.7	17.2
95th Queue (m)	20.8	2.8	9.2	452.3	32.5
Link Distance (m)			51.8	387.5	
Upstream Blk Time (%)				18	
Queuing Penalty (veh)				0	
Storage Bay Dist (m)	80.0	60.0			15.0
Storage Blk Time (%)				90	29
Queuing Penalty (veh)				103	25

Lanes, Volumes, Timings
1: Moulinette Road & Hwy 401 EB Ramps

2035 AM Future Background



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	42	83	102	146	51
Future Volume (vph)	28	42	83	102	146	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919				0.965	
Flt Protected	0.980			0.978		
Satd. Flow (prot)	1338	0	0	1854	1795	0
Flt Permitted	0.980			0.978		
Satd. Flow (perm)	1338	0	0	1854	1795	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	55%	12%	3%	0%	3%	4%
Adj. Flow (vph)	33	49	97	119	170	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	0	0	216	229	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2035 AM Future Background



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	42	83	102	146	51
Future Volume (Veh/h)	28	42	83	102	146	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	33	49	97	119	170	59
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	512	200	229			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	512	200	229			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	92	94	93			
cM capacity (veh/h)	407	817	1333			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	82	216	229			
Volume Left	33	97	0			
Volume Right	49	0	59			
cSH	582	1333	1700			
Volume to Capacity	0.14	0.07	0.13			
Queue Length 95th (m)	3.7	1.8	0.0			
Control Delay (s)	12.2	3.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.2	3.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			34.9%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	0	107	61	32	12	30	79	20	22	66	17
Future Volume (vph)	6	0	107	61	32	12	30	79	20	22	66	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.872			0.984			0.979			0.978	
Flt Protected		0.997			0.972			0.988			0.990	
Satd. Flow (prot)	0	1670	0	0	1661	0	0	1656	0	0	1542	0
Flt Permitted		0.997			0.972			0.988			0.990	
Satd. Flow (perm)	0	1670	0	0	1661	0	0	1656	0	0	1542	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	11%	14%	0%	0%	20%	0%	70%	3%	25%
Adj. Flow (vph)	6	0	113	64	34	13	32	83	21	23	69	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	119	0	0	111	0	0	136	0	0	110	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	28.9%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2035 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	107	61	32	12	30	79	20	22	66	17
Future Volume (Veh/h)	6	0	107	61	32	12	30	79	20	22	66	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	6	0	113	64	34	13	32	83	21	23	69	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	312	292	78	394	290	94	87			104		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	312	292	78	394	290	94	87			104		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.2	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.3	2.2			2.8		
p0 queue free %	99	100	89	86	94	99	98			98		
cM capacity (veh/h)	589	597	988	471	576	969	1522			1153		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	119	111	136	110								
Volume Left	6	64	32	23								
Volume Right	113	13	21	18								
cSH	956	533	1522	1153								
Volume to Capacity	0.12	0.21	0.02	0.02								
Queue Length 95th (m)	3.2	5.9	0.5	0.5								
Control Delay (s)	9.3	13.5	1.9	1.8								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.3	13.5	1.9	1.8								
Approach LOS	A	B										
Intersection Summary												
Average Delay			6.4									
Intersection Capacity Utilization			28.9%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
3: Moulinette Road & Private Driveway/County Road 29

2035 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	11	73	6	4	7	24	65	7	46	0
Future Volume (vph)	0	0	11	73	6	4	7	24	65	7	46	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.994			0.908				
Flt Protected					0.958			0.997			0.994	
Satd. Flow (prot)	0	1385	0	0	1590	0	0	1486	0	0	1910	0
Flt Permitted					0.958			0.997			0.994	
Satd. Flow (perm)	0	1385	0	0	1590	0	0	1486	0	0	1910	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	20%	17%	0%	0%	0%	0%	25%	0%	0%	0%
Adj. Flow (vph)	0	0	12	77	6	4	7	25	68	7	48	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	87	0	0	100	0	0	55	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	24.5%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2035 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	11	73	6	4	7	24	65	7	46	0
Future Volume (Veh/h)	0	0	11	73	6	4	7	24	65	7	46	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	12	77	6	4	7	25	68	7	48	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	142	169	48	147	135	59	48			93		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	142	169	48	147	135	59	48			93		
tC, single (s)	7.1	6.5	6.4	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	90	99	100	100			100		
cM capacity (veh/h)	818	721	972	773	753	1012	1572			1514		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	87	100	55								
Volume Left	0	77	7	7								
Volume Right	12	4	68	0								
cSH	972	780	1572	1514								
Volume to Capacity	0.01	0.11	0.00	0.00								
Queue Length 95th (m)	0.3	2.8	0.1	0.1								
Control Delay (s)	8.7	10.2	0.5	1.0								
Lane LOS	A	B	A	A								
Approach Delay (s)	8.7	10.2	0.5	1.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			24.5%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Avonmore Road & County Road 29/Pieur Road

2035 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	0	12	0	0	0	16	55	0	0	169	42
Future Volume (vph)	63	0	12	0	0	0	16	55	0	0	169	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.978									0.973	
Fl _t Protected		0.960						0.989				
Satd. Flow (prot)	0	1502	0	0	1921	0	0	1669	0	0	1640	0
Fl _t Permitted		0.960						0.989				
Satd. Flow (perm)	0	1502	0	0	1921	0	0	1669	0	0	1640	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			886.9			247.2	
Travel Time (s)		13.9			4.8			39.9			11.1	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	24%	0%	0%	0%	0%	0%	0%	18%	0%	0%	8%	38%
Adj. Flow (vph)	77	0	15	0	0	0	20	67	0	0	206	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	0	0	0	0	87	0	0	257	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	27.7%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
4: Avonmore Road & County Road 29/Pieur Road

2035 AM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	0	12	0	0	0	16	55	0	0	169	42
Future Volume (Veh/h)	63	0	12	0	0	0	16	55	0	0	169	42
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	77	0	15	0	0	0	20	67	0	0	206	51
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	338	338	232	354	364	67	257			67		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	338	338	232	354	364	67	257			67		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	98	100	100	100	98			100		
cM capacity (veh/h)	569	577	813	587	559	1002	1320			1547		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	92	0	87	257								
Volume Left	77	0	20	0								
Volume Right	15	0	0	51								
cSH	598	1700	1320	1547								
Volume to Capacity	0.15	0.00	0.02	0.00								
Queue Length 95th (m)	4.1	0.0	0.4	0.0								
Control Delay (s)	12.1	0.0	1.9	0.0								
Lane LOS	B	A	A									
Approach Delay (s)	12.1	0.0	1.9	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.9									
Intersection Capacity Utilization			27.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2035 AM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	747	3	0	269	74	0	3	0	146	0	86
Future Volume (vph)	28	747	3	0	269	74	0	3	0	146	0	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1882	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.561										0.756	
Satd. Flow (perm)	1078	1882	0	0	1847	1372	0	1921	0	0	1357	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						79						91
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	30	795	3	0	286	79	0	3	0	155	0	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	798	0	0	286	79	0	3	0	0	155	91
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm		NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	31.0	19.3	1.3
Average Queue (m)	14.0	5.1	0.0
95th Queue (m)	25.8	14.2	0.9
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.4	32.6	8.5	18.0
Average Queue (m)	8.5	13.0	0.8	1.6
95th Queue (m)	11.2	23.7	4.8	9.1
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.2	20.9	3.0	8.7
Average Queue (m)	3.4	9.9	0.1	0.4
95th Queue (m)	11.1	17.0	1.5	3.4
Link Distance (m)	87.5	216.6	57.6	140.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Avonmore Road & County Road 29/Pieur Road

Movement	EB	NB
Directions Served	LTR	LTR
Maximum Queue (m)	21.5	6.0
Average Queue (m)	10.8	0.5
95th Queue (m)	19.4	3.4
Link Distance (m)	300.4	878.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	56.7	142.7	42.3	14.9	8.3	48.2	22.8
Average Queue (m)	8.2	65.9	16.8	4.2	0.6	19.9	12.0
95th Queue (m)	39.6	114.3	34.7	11.6	4.0	39.2	24.7
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)		0					
Queuing Penalty (veh)		0					
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)		5				13	2
Queuing Penalty (veh)		1				11	3

Network Summary

Network wide Queuing Penalty: 16

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2035 AM Future Background (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	747	3	0	269	74	0	3	0	146	0	86
Future Volume (vph)	28	747	3	0	269	74	0	3	0	146	0	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1882	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1825	1882	0	0	1847	1372	0	1921	0	0	1706	1372
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	30	795	3	0	286	79	0	3	0	155	0	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	798	0	0	286	79	0	3	0	0	155	91
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	60.9%						ICU Level of Service B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2035 AM Future Background (Unsignalized)
 5: Avonmore Road & County Road 2

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	747	3	0	269	74	0	3	0	146	0	86
Future Volume (Veh/h)	28	747	3	0	269	74	0	3	0	146	0	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	30	795	3	0	286	79	0	3	0	155	0	91
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
2												
Median type												
None None												
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume												
365 798 1188 1222 796 1142 1144 286												
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol												
365 798 1188 1222 796 1142 1144 286												
tC, single (s)												
4.1 4.1 7.1 6.5 6.2 7.2 6.5 6.4												
tC, 2 stage (s)												
tF (s)												
2.2 2.2 3.5 4.0 3.3 3.6 4.0 3.5												
p0 queue free %												
98 100 100 98 100 8 100 87												
cM capacity (veh/h)												
1205 833 143 177 390 168 197 714												
Direction, Lane #												
EB 1 EB 2 WB 1 WB 2 NB 1 SB 1												
Volume Total												
30 798 286 79 3 246												
Volume Left												
30 0 0 0 0 155												
Volume Right												
0 3 0 79 0 91												
cSH												
1205 1700 833 1700 177 245												
Volume to Capacity												
0.02 0.47 0.00 0.05 0.02 1.00												
Queue Length 95th (m)												
0.6 0.0 0.0 0.0 0.4 73.5												
Control Delay (s)												
8.1 0.0 0.0 0.0 25.7 102.3												
Lane LOS												
A D F												
Approach Delay (s)												
0.3 0.0 25.7 102.3												
Approach LOS												
D F												
Intersection Summary												
Average Delay												
17.7												
Intersection Capacity Utilization												
60.9% ICU Level of Service												
B												
Analysis Period (min)												
15												

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	WB	NB	SB	SB
Directions Served	L	R	LTR	LT	R
Maximum Queue (m)	12.8	1.6	8.3	401.5	22.8
Average Queue (m)	2.6	0.1	0.9	285.1	16.3
95th Queue (m)	8.7	1.2	5.0	483.4	32.7
Link Distance (m)			51.8	387.5	
Upstream Blk Time (%)				35	
Queuing Penalty (veh)				0	
Storage Bay Dist (m)	80.0	60.0			15.0
Storage Blk Time (%)				95	7
Queuing Penalty (veh)				82	10

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2035 PM Future Background



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	30	49	127	132	33
Future Volume (vph)	25	30	49	127	132	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.927			0.973		
Flt Protected	0.978			0.986		
Satd. Flow (prot)	1513	0	0	1878	1851	0
Flt Permitted	0.978			0.986		
Satd. Flow (perm)	1513	0	0	1878	1851	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	20%	11%	3%	0%	0%	5%
Adj. Flow (vph)	27	32	53	137	142	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	0	190	177	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.7% ICU Level of Service A
Analysis Period (min)	15

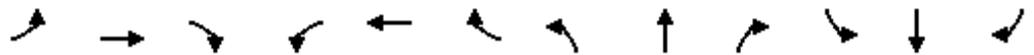
HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2035 PM Future Background



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	30	49	127	132	33
Future Volume (Veh/h)	25	30	49	127	132	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	27	32	53	137	142	35
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	402	160	177			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	402	160	177			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.2			
p0 queue free %	95	96	96			
cM capacity (veh/h)	549	863	1393			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	59	190	177			
Volume Left	27	53	0			
Volume Right	32	0	35			
cSH	684	1393	1700			
Volume to Capacity	0.09	0.04	0.10			
Queue Length 95th (m)	2.1	0.9	0.0			
Control Delay (s)	10.8	2.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.8	2.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			31.7%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	8	2	73	70	50	29	46	88	17	20	46	8
Future Volume (vph)	8	2	73	70	50	29	46	88	17	20	46	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.882			0.974			0.984			0.985	
Flt Protected		0.995			0.977			0.985			0.987	
Satd. Flow (prot)	0	1534	0	0	1786	0	0	1750	0	0	1627	0
Flt Permitted		0.995			0.977			0.985			0.987	
Satd. Flow (perm)	0	1534	0	0	1786	0	0	1750	0	0	1627	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	67%	0%	4%	0%	7%	0%	0%	11%	0%	55%	0%	0%
Adj. Flow (vph)	10	3	92	89	63	37	58	111	22	25	58	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	189	0	0	191	0	0	93	0
Enter Blocked Intersection	No	No	No									
Lane Alignment	Left	Left	Right									
Median Width(m)		0.0			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2035 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	2	73	70	50	29	46	88	17	20	46	8
Future Volume (Veh/h)	8	2	73	70	50	29	46	88	17	20	46	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	10	3	92	89	63	37	58	111	22	25	58	10
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	420	362	63	444	356	122	68			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	420	362	63	444	356	122	68			133		
tC, single (s)	7.8	6.5	6.2	7.1	6.6	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	4.1	4.0	3.3	3.5	4.1	3.3	2.2			2.7		
p0 queue free %	97	99	91	80	88	96	96			98		
cM capacity (veh/h)	373	536	996	455	529	935	1546			1182		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	105	189	191	93								
Volume Left	10	89	58	25								
Volume Right	92	37	22	10								
cSH	841	534	1546	1182								
Volume to Capacity	0.12	0.35	0.04	0.02								
Queue Length 95th (m)	3.2	12.1	0.9	0.5								
Control Delay (s)	9.9	15.4	2.5	2.3								
Lane LOS	A	C	A	A								
Approach Delay (s)	9.9	15.4	2.5	2.3								
Approach LOS	A	C										
Intersection Summary												
Average Delay			8.0									
Intersection Capacity Utilization			33.0%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2035 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	69	0	12	0	50	73	5	25	0
Future Volume (vph)	0	0	3	69	0	12	0	50	73	5	25	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.980			0.920				
Fl _t Protected					0.959						0.992	
Satd. Flow (prot)	0	1662	0	0	1531	0	0	1659	0	0	1906	0
Fl _t Permitted					0.959						0.992	
Satd. Flow (perm)	0	1662	0	0	1531	0	0	1659	0	0	1906	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	21%	0%	0%	0%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	0	4	99	0	17	0	71	104	7	36	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	116	0	0	175	0	0	43	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
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
 3: Moulinette Road & Private Driveway/County Road 29

2035 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	3	69	0	12	0	50	73	5	25	0
Future Volume (Veh/h)	0	0	3	69	0	12	0	50	73	5	25	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	4	99	0	17	0	71	104	7	36	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	190	225	36	177	173	123	36			175		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	190	225	36	177	173	123	36			175		
tC, single (s)	7.1	6.5	6.2	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	100	98	100			100		
cM capacity (veh/h)	757	674	1042	739	720	933	1588			1414		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	116	175	43								
Volume Left	0	99	0	7								
Volume Right	4	17	104	0								
cSH	1042	762	1588	1414								
Volume to Capacity	0.00	0.15	0.00	0.00								
Queue Length 95th (m)	0.1	4.1	0.0	0.1								
Control Delay (s)	8.5	10.6	0.0	1.3								
Lane LOS	A	B		A								
Approach Delay (s)	8.5	10.6	0.0	1.3								
Approach LOS	A	B										
Intersection Summary												
Average Delay			3.9									
Intersection Capacity Utilization			25.0%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Avonmore Road & County Road 29/Pieur Road

2035 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	2	26	3	0	0	17	165	0	0	111	32
Future Volume (vph)	73	2	26	3	0	0	17	165	0	0	111	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.965										0.969
Fl _t Protected		0.965			0.950			0.995				
Satd. Flow (prot)	0	1566	0	0	1825	0	0	1725	0	0	1664	0
Fl _t Permitted		0.965			0.950			0.995				
Satd. Flow (perm)	0	1566	0	0	1825	0	0	1725	0	0	1664	0
Link Speed (k/h)		80			50			80				80
Link Distance (m)		309.2			66.2			886.9				247.2
Travel Time (s)		13.9			4.8			39.9				11.1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	10%	0%	27%	0%	0%	0%	9%	11%	0%	0%	11%	15%
Adj. Flow (vph)	90	2	32	4	0	0	21	204	0	0	137	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	4	0	0	225	0	0	177	0
Enter Blocked Intersection	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)		4.9			1.6			4.9				4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free				Free
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.6%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
4: Avonmore Road & County Road 29/Pieur Road

2035 PM Future Background

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	2	26	3	0	0	17	165	0	0	111	32
Future Volume (Veh/h)	73	2	26	3	0	0	17	165	0	0	111	32
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	90	2	32	4	0	0	21	204	0	0	137	40
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	403	157	436	423	204	177			204		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	403	403	157	436	423	204	177			204		
tC, single (s)	7.2	6.5	6.5	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	83	100	96	99	100	100	98			100		
cM capacity (veh/h)	537	531	827	506	517	842	1358			1380		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	124	4	225	177								
Volume Left	90	4	21	0								
Volume Right	32	0	0	40								
cSH	591	506	1358	1380								
Volume to Capacity	0.21	0.01	0.02	0.00								
Queue Length 95th (m)	6.0	0.2	0.4	0.0								
Control Delay (s)	12.7	12.2	0.8	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	12.7	12.2	0.8	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			32.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2035 PM Future Background

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	507	3	0	778	219	3	0	5	95	1	125
Future Volume (vph)	69	507	3	0	778	219	3	0	5	95	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.916				0.850
Flt Protected	0.950							0.982			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1728	0	0	1744	1633
Flt Permitted	0.132							0.943			0.746	
Satd. Flow (perm)	237	1864	0	0	1902	1570	0	1659	0	0	1366	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				233		27				133
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	73	539	3	0	828	233	3	0	5	101	1	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	542	0	0	828	233	0	8	0	0	102	133
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

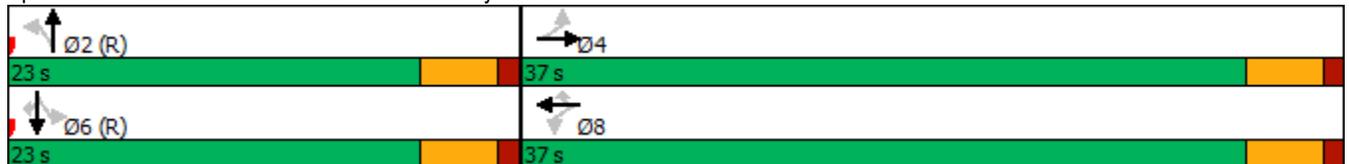
2035 PM Future Background

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	37.0	37.0		37.0	37.0	37.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	61.7%	61.7%		61.7%	61.7%	61.7%	38.3%	38.3%		38.3%	38.3%	38.3%
Maximum Green (s)	32.5	32.5		32.5	32.5	32.5	18.5	18.5		18.5	18.5	18.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.5	4.5			4.5	4.5		4.5			4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	30.4	30.4			30.4	30.4		20.6			20.6	20.6
Actuated g/C Ratio	0.51	0.51			0.51	0.51		0.34			0.34	0.34
v/c Ratio	0.61	0.57			0.86	0.26		0.01			0.22	0.21
Control Delay	36.3	12.6			23.5	2.0		2.1			17.0	4.4
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	36.3	12.6			23.5	2.0		2.1			17.0	4.4
LOS	D	B			C	A		A			B	A
Approach Delay		15.5			18.8			2.1			9.9	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 16.5 Intersection LOS: B
 Intersection Capacity Utilization 76.8% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 5: Avonmore Road & County Road 2



Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	25.8	17.5	1.2
Average Queue (m)	10.2	2.7	0.0
95th Queue (m)	20.3	10.8	0.8
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	18.8	28.6	10.3	9.1
Average Queue (m)	9.7	14.0	0.8	0.6
95th Queue (m)	16.8	23.2	5.7	4.3
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	6.6	23.5	3.3
Average Queue (m)	0.4	10.4	0.1
95th Queue (m)	3.5	18.9	1.7
Link Distance (m)	87.5	216.6	140.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Avonmore Road & County Road 29/Pieur Road

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	21.2	8.9	7.3
Average Queue (m)	10.9	0.9	0.6
95th Queue (m)	18.6	5.5	4.2
Link Distance (m)	300.4	60.6	878.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	83.0	97.4	157.2	99.9	8.3	36.2	22.4
Average Queue (m)	38.6	35.8	61.0	16.4	1.5	17.5	15.2
95th Queue (m)	88.3	79.9	113.3	59.5	6.6	34.3	25.3
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)			0				
Queuing Penalty (veh)			0				
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)	9	0	8			9	9
Queuing Penalty (veh)	46	0	18			11	9

Network Summary

Network wide Queuing Penalty: 84

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2035 PM Future Background (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	507	3	0	778	219	3	0	5	95	1	125
Future Volume (vph)	69	507	3	0	778	219	3	0	5	95	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.916				0.850
Flt Protected	0.950							0.982			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1728	0	0	1744	1633
Flt Permitted	0.950							0.982			0.953	
Satd. Flow (perm)	1706	1864	0	0	1902	1570	0	1728	0	0	1744	1633
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	73	539	3	0	828	233	3	0	5	101	1	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	542	0	0	828	233	0	8	0	0	102	133
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	76.0%						ICU Level of Service D					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2035 PM Future Background (Unsignalized)

5: Avonmore Road & County Road 2

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	69	507	3	0	778	219	3	0	5	95	1	125		
Future Volume (Veh/h)	69	507	3	0	778	219	3	0	5	95	1	125		
Sign Control		Free			Free			Stop			Stop			
Grade		0%			0%			0%			0%			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94		
Hourly flow rate (vph)	73	539	3	0	828	233	3	0	5	101	1	133		
Pedestrians														
Lane Width (m)														
Walking Speed (m/s)														
Percent Blockage														
Right turn flare (veh)												2		
Median type			None			None								
Median storage (veh)														
Upstream signal (m)														
pX, platoon unblocked														
vC, conflicting volume	1061		542		1582		1748		540		1518		1516	828
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	1061		542		1582		1748		540		1518		1516	828
tC, single (s)	4.2		4.1		7.1		6.5		6.2		7.1		6.5	6.2
tC, 2 stage (s)														
tF (s)	2.3		2.2		3.5		4.0		3.3		3.5		4.0	3.3
p0 queue free %	89		100		94		100		99		0		99	64
cM capacity (veh/h)	638		1037		52		77		545		87		107	374
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1								
Volume Total	73	542	828	233	8	235								
Volume Left	73	0	0	0	3	101								
Volume Right	0	3	0	233	5	133								
cSH	638	1700	1037	1700	120	165								
Volume to Capacity	0.11	0.32	0.00	0.14	0.07	1.42								
Queue Length 95th (m)	2.9	0.0	0.0	0.0	1.6	111.7								
Control Delay (s)	11.4	0.0	0.0	0.0	37.2	272.9								
Lane LOS	B				E		F							
Approach Delay (s)	1.3		0.0		37.2		272.9							
Approach LOS					E		F							
Intersection Summary														
Average Delay			34.0											
Intersection Capacity Utilization			76.0%			ICU Level of Service			D					
Analysis Period (min)			15											

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	WB	NB	SB	SB
Directions Served	L	R	LTR	LT	R
Maximum Queue (m)	31.9	4.1	13.5	402.1	22.6
Average Queue (m)	10.4	0.2	3.3	368.4	15.0
95th Queue (m)	23.2	2.3	10.8	461.1	32.0
Link Distance (m)			51.8	387.5	
Upstream Blk Time (%)				78	
Queuing Penalty (veh)				0	
Storage Bay Dist (m)	80.0	60.0			15.0
Storage Blk Time (%)				95	21
Queuing Penalty (veh)				118	20

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2025 AM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	35	68	83	120	46
Future Volume (vph)	27	35	68	83	120	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.923			0.963		
Flt Protected	0.979			0.978		
Satd. Flow (prot)	1330	0	0	1854	1791	0
Flt Permitted	0.979			0.978		
Satd. Flow (perm)	1330	0	0	1854	1791	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	55%	12%	3%	0%	3%	4%
Adj. Flow (vph)	31	41	79	97	140	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	0	0	176	193	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.9% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2025 AM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	35	68	83	120	46
Future Volume (Veh/h)	27	35	68	83	120	46
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	31	41	79	97	140	53
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	422	166	193			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	422	166	193			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	93	95	94			
cM capacity (veh/h)	471	852	1374			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	72	176	193			
Volume Left	31	79	0			
Volume Right	41	0	53			
cSH	632	1374	1700			
Volume to Capacity	0.11	0.06	0.11			
Queue Length 95th (m)	2.9	1.4	0.0			
Control Delay (s)	11.4	3.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.4	3.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			30.9%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	66	50	26	13	25	69	16	23	58	14
Future Volume (vph)	4	0	66	50	26	13	25	69	16	23	58	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.872			0.980			0.980			0.980	
Flt Protected		0.997			0.973			0.989			0.988	
Satd. Flow (prot)	0	1670	0	0	1662	0	0	1654	0	0	1520	0
Flt Permitted		0.997			0.973			0.989			0.988	
Satd. Flow (perm)	0	1670	0	0	1662	0	0	1654	0	0	1520	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	11%	14%	0%	0%	20%	0%	70%	3%	25%
Adj. Flow (vph)	4	0	69	53	27	14	26	73	17	24	61	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	94	0	0	116	0	0	100	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.1%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2025 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	66	50	26	13	25	69	16	23	58	14
Future Volume (Veh/h)	4	0	66	50	26	13	25	69	16	23	58	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	4	0	69	53	27	14	26	73	17	24	61	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	278	258	68	319	258	82	76			90		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	278	258	68	319	258	82	76			90		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.2	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.3	2.2			2.8		
p0 queue free %	99	100	93	90	96	99	98			98		
cM capacity (veh/h)	628	625	1000	558	603	984	1536			1169		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	73	94	116	100								
Volume Left	4	53	26	24								
Volume Right	69	14	17	15								
cSH	969	610	1536	1169								
Volume to Capacity	0.08	0.15	0.02	0.02								
Queue Length 95th (m)	1.9	4.1	0.4	0.5								
Control Delay (s)	9.0	12.0	1.8	2.1								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.0	12.0	1.8	2.1								
Approach LOS	A	B										
Intersection Summary												
Average Delay			5.7									
Intersection Capacity Utilization			26.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2025 AM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	54	4	2	5	19	60	5	38	0
Future Volume (vph)	0	0	9	54	4	2	5	19	60	5	38	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.996			0.903				
Fl _t Protected					0.957			0.997			0.994	
Satd. Flow (prot)	0	1385	0	0	1587	0	0	1467	0	0	1910	0
Fl _t Permitted					0.957			0.997			0.994	
Satd. Flow (perm)	0	1385	0	0	1587	0	0	1467	0	0	1910	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	20%	17%	0%	0%	0%	0%	25%	0%	0%	0%
Adj. Flow (vph)	0	0	9	57	4	2	5	20	63	5	40	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	63	0	0	88	0	0	45	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.4% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2025 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	9	54	4	2	5	19	60	5	38	0
Future Volume (Veh/h)	0	0	9	54	4	2	5	19	60	5	38	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	9	57	4	2	5	20	63	5	40	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	116	143	40	120	112	52	40			83		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	116	143	40	120	112	52	40			83		
tC, single (s)	7.1	6.5	6.4	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	93	99	100	100			100		
cM capacity (veh/h)	857	747	982	809	777	1022	1583			1527		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	9	63	88	45								
Volume Left	0	57	5	5								
Volume Right	9	2	63	0								
cSH	982	813	1583	1527								
Volume to Capacity	0.01	0.08	0.00	0.00								
Queue Length 95th (m)	0.2	1.9	0.1	0.1								
Control Delay (s)	8.7	9.8	0.4	0.8								
Lane LOS	A	A	A	A								
Approach Delay (s)	8.7	9.8	0.4	0.8								
Approach LOS	A	A										
Intersection Summary												
Average Delay			3.8									
Intersection Capacity Utilization			22.4%		ICU Level of Service				A			
Analysis Period (min)			15									

4: Avonmore Road/Avonmore Road & County Road 29/Pieur Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	0	14	0	0	0	22	47	0	0	141	35
Future Volume (vph)	39	0	14	0	0	0	22	47	0	0	141	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.965										0.973
Flt Protected		0.964						0.984				
Satd. Flow (prot)	0	1518	0	0	1921	0	0	1685	0	0	1640	0
Flt Permitted		0.964						0.984				
Satd. Flow (perm)	0	1518	0	0	1921	0	0	1685	0	0	1640	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			1773.8			247.2	
Travel Time (s)		13.9			4.8			79.8			11.1	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	24%	0%	0%	0%	0%	0%	0%	18%	0%	0%	8%	38%
Adj. Flow (vph)	48	0	17	0	0	0	27	57	0	0	172	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	0	0	0	84	0	0	215	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

2025 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	0	14	0	0	0	22	47	0	0	141	35
Future Volume (Veh/h)	39	0	14	0	0	0	22	47	0	0	141	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	48	0	17	0	0	0	27	57	0	0	172	43
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	304	304	194	322	326	57	215			57		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	304	304	194	322	326	57	215			57		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	98	100	100	100	98			100		
cM capacity (veh/h)	598	600	853	613	584	1015	1367			1560		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	65	0	84	215								
Volume Left	48	0	27	0								
Volume Right	17	0	0	43								
cSH	648	1700	1367	1560								
Volume to Capacity	0.10	0.00	0.02	0.00								
Queue Length 95th (m)	2.5	0.0	0.5	0.0								
Control Delay (s)	11.2	0.0	2.6	0.0								
Lane LOS	B	A	A									
Approach Delay (s)	11.2	0.0	2.6	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.6									
Intersection Capacity Utilization			26.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2025 AM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	613	2	0	221	66	0	2	0	125	0	70
Future Volume (vph)	23	613	2	0	221	66	0	2	0	125	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.601										0.757	
Satd. Flow (perm)	1155	1884	0	0	1847	1372	0	1921	0	0	1359	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						70						74
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	24	652	2	0	235	70	0	2	0	133	0	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	654	0	0	235	70	0	2	0	0	133	74
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm		NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings
8: Avonmore Road & Site Access

2025 AM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	6	6	91	195	9
Future Volume (vph)	11	6	6	91	195	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.951			0.994		
Flt Protected	0.969			0.997		
Satd. Flow (prot)	1313	0	0	1779	1750	0
Flt Permitted	0.969			0.997		
Satd. Flow (perm)	1313	0	0	1779	1750	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	186.4			200.6	1773.8	
Travel Time (s)	13.4			9.0	79.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	45%	17%	17%	7%	7%	56%
Adj. Flow (vph)	14	8	8	114	244	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	122	255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
8: Avonmore Road & Site Access

2025 AM Future Total

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	6	6	91	195	9
Future Volume (Veh/h)	11	6	6	91	195	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	14	8	8	114	244	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	380	250	255			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	380	250	255			
tC, single (s)	6.8	6.4	4.3			
tC, 2 stage (s)						
tF (s)	3.9	3.5	2.4			
p0 queue free %	97	99	99			
cM capacity (veh/h)	543	754	1227			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	122	255			
Volume Left	14	8	0			
Volume Right	8	0	11			
cSH	604	1227	1700			
Volume to Capacity	0.04	0.01	0.15			
Queue Length 95th (m)	0.9	0.1	0.0			
Control Delay (s)	11.2	0.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.2	0.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			20.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	27.5	13.1	3.1
Average Queue (m)	12.2	3.0	0.1
95th Queue (m)	23.9	10.2	1.6
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.2	27.4	12.9	13.8
Average Queue (m)	7.2	11.3	1.0	1.2
95th Queue (m)	11.9	21.4	6.2	7.3
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.5	22.0	1.5	4.9
Average Queue (m)	2.3	9.1	0.0	0.3
95th Queue (m)	9.4	18.0	1.0	3.4
Link Distance (m)	87.5	216.6	57.6	140.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	20.2	9.0	1.3
Average Queue (m)	8.7	0.8	0.0
95th Queue (m)	17.1	4.9	0.9
Link Distance (m)	300.4	1758.1	238.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	15.4	91.0	39.3	14.8	1.7	38.0	22.7
Average Queue (m)	3.5	48.7	14.3	3.5	0.1	14.8	10.5
95th Queue (m)	10.5	81.1	30.7	10.2	1.6	31.0	23.5
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)		1				7	2
Queuing Penalty (veh)		0				5	3

Intersection: 8: Avonmore Road & Site Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	20.6	4.0
Average Queue (m)	5.3	0.1
95th Queue (m)	16.8	2.1
Link Distance (m)	180.8	196.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 8

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2025 AM Future Total (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	613	2	0	221	66	0	2	0	125	0	70
Future Volume (vph)	23	613	2	0	221	66	0	2	0	125	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	24	652	2	0	235	70	0	2	0	133	0	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	654	0	0	235	70	0	2	0	0	133	74
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	52.6%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
5: Avonmore Road & County Road 2

2025 AM Future Total (Unsignalized)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	613	2	0	221	66	0	2	0	125	0	70
Future Volume (Veh/h)	23	613	2	0	221	66	0	2	0	125	0	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	24	652	2	0	235	70	0	2	0	133	0	74
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												2
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	305			654			973	1006	653	936	937	235
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	305			654			973	1006	653	936	937	235
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.5
p0 queue free %	98			100			100	99	100	43	100	90
cM capacity (veh/h)	1267			943			208	238	471	235	262	764
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	24	654	235	70	2	207						
Volume Left	24	0	0	0	0	133						
Volume Right	0	2	0	70	0	74						
cSH	1267	1700	943	1700	238	366						
Volume to Capacity	0.02	0.38	0.00	0.04	0.01	0.57						
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.2	25.4						
Control Delay (s)	7.9	0.0	0.0	0.0	20.2	28.4						
Lane LOS	A				C	D						
Approach Delay (s)	0.3		0.0		20.2	28.4						
Approach LOS					C	D						
Intersection Summary												
Average Delay			5.1									
Intersection Capacity Utilization			52.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	NB	SB	SB
Directions Served	L	LTR	LT	R
Maximum Queue (m)	8.4	6.7	122.1	23.0
Average Queue (m)	1.5	0.7	45.8	16.1
95th Queue (m)	6.1	4.5	106.3	29.7
Link Distance (m)		51.8	387.5	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	80.0			15.0
Storage Blk Time (%)			52	4
Queuing Penalty (veh)			36	5

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2025 PM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	25	40	104	108	30
Future Volume (vph)	25	25	40	104	108	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.932			0.971		
Fl _t Protected	0.976			0.986		
Satd. Flow (prot)	1513	0	0	1879	1845	0
Fl _t Permitted	0.976			0.986		
Satd. Flow (perm)	1513	0	0	1879	1845	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	20%	11%	3%	0%	0%	5%
Adj. Flow (vph)	27	27	43	112	116	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	0	0	155	148	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.5%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2025 PM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	25	40	104	108	30
Future Volume (Veh/h)	25	25	40	104	108	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	27	27	43	112	116	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	330	132	148			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	330	132	148			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.2			
p0 queue free %	96	97	97			
cM capacity (veh/h)	610	894	1427			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	54	155	148			
Volume Left	27	43	0			
Volume Right	27	0	32			
cSH	725	1427	1700			
Volume to Capacity	0.07	0.03	0.09			
Queue Length 95th (m)	1.8	0.7	0.0			
Control Delay (s)	10.4	2.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.4	2.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			28.5%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	45	57	41	27	38	77	14	20	41	6
Future Volume (vph)	5	1	45	57	41	27	38	77	14	20	41	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.880			0.971			0.985			0.987	
Flt Protected		0.995			0.978			0.985			0.986	
Satd. Flow (prot)	0	1531	0	0	1783	0	0	1749	0	0	1609	0
Flt Permitted		0.995			0.978			0.985			0.986	
Satd. Flow (perm)	0	1531	0	0	1783	0	0	1749	0	0	1609	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	67%	0%	4%	0%	7%	0%	0%	11%	0%	55%	0%	0%
Adj. Flow (vph)	6	1	57	72	52	34	48	97	18	25	52	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	158	0	0	163	0	0	85	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
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
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2025 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	45	57	41	27	38	77	14	20	41	6
Future Volume (Veh/h)	5	1	45	57	41	27	38	77	14	20	41	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	6	1	57	72	52	34	48	97	18	25	52	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	368	317	56	366	312	106	60			115		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	368	317	56	366	312	106	60			115		
tC, single (s)	7.8	6.5	6.2	7.1	6.6	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	4.1	4.0	3.3	3.5	4.1	3.3	2.2			2.7		
p0 queue free %	99	100	94	87	91	96	97			98		
cM capacity (veh/h)	418	572	1005	538	564	954	1556			1202		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	64	158	163	85								
Volume Left	6	72	48	25								
Volume Right	57	34	18	8								
cSH	879	604	1556	1202								
Volume to Capacity	0.07	0.26	0.03	0.02								
Queue Length 95th (m)	1.8	7.9	0.7	0.5								
Control Delay (s)	9.4	13.1	2.3	2.5								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.4	13.1	2.3	2.5								
Approach LOS	A	B										
Intersection Summary												
Average Delay			6.9									
Intersection Capacity Utilization			29.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2025 PM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	2	50	0	7	0	41	67	4	21	0
Future Volume (vph)	0	0	2	50	0	7	0	41	67	4	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.983			0.916				
Fl _t Protected					0.958						0.992	
Satd. Flow (prot)	0	1662	0	0	1528	0	0	1647	0	0	1906	0
Fl _t Permitted					0.958						0.992	
Satd. Flow (perm)	0	1662	0	0	1528	0	0	1647	0	0	1906	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	21%	0%	0%	0%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	0	3	71	0	10	0	59	96	6	30	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	81	0	0	155	0	0	36	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2025 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	50	0	7	0	41	67	4	21	0
Future Volume (Veh/h)	0	0	2	50	0	7	0	41	67	4	21	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	3	71	0	10	0	59	96	6	30	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	159	197	30	152	149	107	30			155		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	159	197	30	152	149	107	30			155		
tC, single (s)	7.1	6.5	6.2	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	99	100			100		
cM capacity (veh/h)	800	699	1050	769	743	953	1596			1438		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	3	81	155	36								
Volume Left	0	71	0	6								
Volume Right	3	10	96	0								
cSH	1050	788	1596	1438								
Volume to Capacity	0.00	0.10	0.00	0.00								
Queue Length 95th (m)	0.1	2.6	0.0	0.1								
Control Delay (s)	8.4	10.1	0.0	1.3								
Lane LOS	A	B		A								
Approach Delay (s)	8.4	10.1	0.0	1.3								
Approach LOS	A	B										
Intersection Summary												
Average Delay			3.2									
Intersection Capacity Utilization			22.8%		ICU Level of Service				A			
Analysis Period (min)			15									

4: Avonmore Road/Avonmore Road & County Road 29/Pieur Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	1	23	2	0	0	21	137	0	0	93	26
Future Volume (vph)	45	1	23	2	0	0	21	137	0	0	93	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.956										0.971
Fl _t Protected		0.968			0.950			0.993				
Satd. Flow (prot)	0	1539	0	0	1825	0	0	1723	0	0	1667	0
Fl _t Permitted		0.968			0.950			0.993				
Satd. Flow (perm)	0	1539	0	0	1825	0	0	1723	0	0	1667	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			1773.8			247.2	
Travel Time (s)		13.9			4.8			79.8			11.1	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	10%	0%	27%	0%	0%	0%	9%	11%	0%	0%	11%	15%
Adj. Flow (vph)	56	1	28	2	0	0	26	169	0	0	115	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	2	0	0	195	0	0	147	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.3%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

2025 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1	23	2	0	0	21	137	0	0	93	26
Future Volume (Veh/h)	45	1	23	2	0	0	21	137	0	0	93	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	56	1	28	2	0	0	26	169	0	0	115	32
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	352	352	131	380	368	169	147			169		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	352	352	131	380	368	169	147			169		
tC, single (s)	7.2	6.5	6.5	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	90	100	97	100	100	100	98			100		
cM capacity (veh/h)	580	565	856	553	554	880	1393			1421		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	85	2	195	147								
Volume Left	56	2	26	0								
Volume Right	28	0	0	32								
cSH	648	553	1393	1421								
Volume to Capacity	0.13	0.00	0.02	0.00								
Queue Length 95th (m)	3.4	0.1	0.4	0.0								
Control Delay (s)	11.4	11.5	1.2	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.4	11.5	1.2	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			25.3%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2025 PM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	416	2	0	639	185	2	0	4	82	1	103
Future Volume (vph)	56	416	2	0	639	185	2	0	4	82	1	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.910				0.850
Flt Protected	0.950							0.984			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1720	0	0	1745	1633
Flt Permitted	0.180							0.958			0.765	
Satd. Flow (perm)	323	1864	0	0	1902	1570	0	1675	0	0	1400	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				197		27				110
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	60	443	2	0	680	197	2	0	4	87	1	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	445	0	0	680	197	0	6	0	0	88	110
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings
8: Avonmore Road & Site Access

2025 PM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	5	6	241	186	9
Future Volume (vph)	9	5	6	241	186	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952			0.994		
Flt Protected	0.969			0.999		
Satd. Flow (prot)	1237	0	0	1773	1733	0
Flt Permitted	0.969			0.999		
Satd. Flow (perm)	1237	0	0	1773	1733	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	186.4			200.6	1773.8	
Travel Time (s)	13.4			9.0	79.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	56%	20%	17%	8%	8%	56%
Adj. Flow (vph)	11	6	8	301	233	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	309	244	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.5%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
8: Avonmore Road & Site Access

2025 PM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	5	6	241	186	9
Future Volume (Veh/h)	9	5	6	241	186	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	11	6	8	301	232	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	554	238	243			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	554	238	243			
tC, single (s)	7.0	6.4	4.3			
tC, 2 stage (s)						
tF (s)	4.0	3.5	2.4			
p0 queue free %	97	99	99			
cM capacity (veh/h)	410	759	1240			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	17	309	243			
Volume Left	11	8	0			
Volume Right	6	0	11			
cSH	489	1240	1700			
Volume to Capacity	0.03	0.01	0.14			
Queue Length 95th (m)	0.8	0.1	0.0			
Control Delay (s)	12.6	0.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.6	0.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			27.5%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	24.2	11.0	1.3
Average Queue (m)	9.6	1.7	0.0
95th Queue (m)	19.9	7.4	0.9
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.0	24.8	9.6	14.8
Average Queue (m)	6.8	12.1	0.9	1.1
95th Queue (m)	13.6	20.7	5.2	7.3
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	8.4	22.6	3.5
Average Queue (m)	0.6	8.8	0.1
95th Queue (m)	4.1	18.1	1.8
Link Distance (m)	87.5	216.6	140.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	22.9	8.9	7.3
Average Queue (m)	9.7	0.8	0.4
95th Queue (m)	18.2	5.1	3.8
Link Distance (m)	300.4	60.6	1758.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	41.6	63.0	87.2	35.6	10.9	34.0	21.8
Average Queue (m)	14.8	26.9	42.4	7.7	1.2	11.0	9.8
95th Queue (m)	35.2	51.5	72.1	22.1	6.3	25.4	20.2
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)	0	0	2			5	3
Queuing Penalty (veh)	0	0	4			5	3

Intersection: 8: Avonmore Road & Site Access

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	22.8	6.0	2.7
Average Queue (m)	4.8	0.3	0.1
95th Queue (m)	16.3	3.2	1.4
Link Distance (m)	180.8	196.8	1758.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 12

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2025 PM Future Total (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	416	2	0	639	185	2	0	4	82	1	103
Future Volume (vph)	56	416	2	0	639	185	2	0	4	82	1	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.910				0.850
Flt Protected	0.950							0.984			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1720	0	0	1745	1633
Flt Permitted	0.950							0.984			0.953	
Satd. Flow (perm)	1706	1864	0	0	1902	1570	0	1720	0	0	1745	1633
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	60	443	2	0	680	197	2	0	4	87	1	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	445	0	0	680	197	0	6	0	0	88	110
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	64.5%						ICU Level of Service C					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
5: Avonmore Road & County Road 2

2025 PM Future Total (Unsignalized)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	416	2	0	639	185	2	0	4	82	1	103
Future Volume (Veh/h)	56	416	2	0	639	185	2	0	4	82	1	103
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	60	443	2	0	680	197	2	0	4	87	1	110
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
2												
Median type												
None None												
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume												
877 445 1300 1441 444 1247 1245 680												
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol												
877 445 1300 1441 444 1247 1245 680												
tC, single (s)												
4.2 4.1 7.1 6.5 6.2 7.1 6.5 6.2												
tC, 2 stage (s)												
tF (s)												
2.3 2.2 3.5 4.0 3.3 3.5 4.0 3.3												
p0 queue free %												
92 100 98 100 99 37 99 76												
cM capacity (veh/h)												
749 1126 99 123 618 138 161 454												
Direction, Lane #												
EB 1 EB 2 WB 1 WB 2 NB 1 SB 1												
Volume Total												
60 445 680 197 6 198												
Volume Left												
60 0 0 0 2 87												
Volume Right												
0 2 0 197 4 110												
cSH												
749 1700 1126 1700 225 283												
Volume to Capacity												
0.08 0.26 0.00 0.12 0.03 0.70												
Queue Length 95th (m)												
2.0 0.0 0.0 0.0 0.6 36.6												
Control Delay (s)												
10.2 0.0 0.0 0.0 21.5 42.8												
Lane LOS												
B C E												
Approach Delay (s)												
1.2 0.0 21.5 42.8												
Approach LOS												
C E												
Intersection Summary												
Average Delay												
5.8												
Intersection Capacity Utilization												
64.5% ICU Level of Service												
C												
Analysis Period (min)												
15												

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	WB	NB	SB	SB
Directions Served	L	R	LTR	LT	R
Maximum Queue (m)	23.1	0.9	13.3	212.7	22.6
Average Queue (m)	8.0	0.0	2.2	99.6	16.9
95th Queue (m)	17.9	0.5	8.9	244.3	30.9
Link Distance (m)			51.8	387.5	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	80.0	60.0			15.0
Storage Blk Time (%)				72	17
Queuing Penalty (veh)				74	14

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2030 AM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	38	75	92	133	51
Future Volume (vph)	29	38	75	92	133	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924			0.963		
Flt Protected	0.979			0.978		
Satd. Flow (prot)	1329	0	0	1854	1791	0
Flt Permitted	0.979			0.978		
Satd. Flow (perm)	1329	0	0	1854	1791	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	55%	12%	3%	0%	3%	4%
Adj. Flow (vph)	34	44	87	107	155	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	0	0	194	214	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.0% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2030 AM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	38	75	92	133	51
Future Volume (Veh/h)	29	38	75	92	133	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	34	44	87	107	155	59
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	466	184	214			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	466	184	214			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	92	95	94			
cM capacity (veh/h)	439	833	1350			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	78	194	214			
Volume Left	34	87	0			
Volume Right	44	0	59			
cSH	599	1350	1700			
Volume to Capacity	0.13	0.06	0.13			
Queue Length 95th (m)	3.4	1.6	0.0			
Control Delay (s)	11.9	3.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.9	3.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			33.0%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	84	55	29	14	27	76	18	25	64	16
Future Volume (vph)	5	0	84	55	29	14	27	76	18	25	64	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.872			0.981			0.980			0.979	
Fl _t Protected		0.997			0.973			0.989			0.988	
Satd. Flow (prot)	0	1670	0	0	1662	0	0	1654	0	0	1520	0
Fl _t Permitted		0.997			0.973			0.989			0.988	
Satd. Flow (perm)	0	1670	0	0	1662	0	0	1654	0	0	1520	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	11%	14%	0%	0%	20%	0%	70%	3%	25%
Adj. Flow (vph)	5	0	88	58	31	15	28	80	19	26	67	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	0	104	0	0	127	0	0	110	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	27.4%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2030 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	84	55	29	14	27	76	18	25	64	16
Future Volume (Veh/h)	5	0	84	55	29	14	27	76	18	25	64	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	0	88	58	31	15	28	80	19	26	67	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	304	282	76	361	282	90	84			99		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	304	282	76	361	282	90	84			99		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.2	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.3	2.2			2.8		
p0 queue free %	99	100	91	89	95	98	98			98		
cM capacity (veh/h)	598	604	991	511	583	974	1526			1159		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	93	104	127	110								
Volume Left	5	58	28	26								
Volume Right	88	15	19	17								
cSH	958	571	1526	1159								
Volume to Capacity	0.10	0.18	0.02	0.02								
Queue Length 95th (m)	2.4	5.0	0.4	0.5								
Control Delay (s)	9.2	12.7	1.7	2.1								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.2	12.7	1.7	2.1								
Approach LOS	A	B										
Intersection Summary												
Average Delay			6.0									
Intersection Capacity Utilization			27.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2030 AM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	10	66	5	3	6	22	66	6	42	0
Future Volume (vph)	0	0	10	66	5	3	6	22	66	6	42	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.995			0.905				
Fl _t Protected					0.957			0.997			0.994	
Satd. Flow (prot)	0	1385	0	0	1587	0	0	1474	0	0	1910	0
Fl _t Permitted					0.957			0.997			0.994	
Satd. Flow (perm)	0	1385	0	0	1587	0	0	1474	0	0	1910	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	20%	17%	0%	0%	0%	0%	25%	0%	0%	0%
Adj. Flow (vph)	0	0	11	69	5	3	6	23	69	6	44	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	77	0	0	98	0	0	50	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2030 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	66	5	3	6	22	66	6	42	0
Future Volume (Veh/h)	0	0	10	66	5	3	6	22	66	6	42	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	11	69	5	3	6	23	69	6	44	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	131	160	44	136	126	58	44			92		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	131	160	44	136	126	58	44			92		
tC, single (s)	7.1	6.5	6.4	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	91	99	100	100			100		
cM capacity (veh/h)	834	730	977	787	763	1014	1577			1515		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	11	77	98	50								
Volume Left	0	69	6	6								
Volume Right	11	3	69	0								
cSH	977	793	1577	1515								
Volume to Capacity	0.01	0.10	0.00	0.00								
Queue Length 95th (m)	0.3	2.4	0.1	0.1								
Control Delay (s)	8.7	10.0	0.5	0.9								
Lane LOS	A	B	A	A								
Approach Delay (s)	8.7	10.0	0.5	0.9								
Approach LOS	A	B										
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			23.8%		ICU Level of Service					A		
Analysis Period (min)			15									

4: Avonmore Road/Avonmore Road & County Road 29/Pieur Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	0	16	0	0	0	23	52	0	0	155	38
Future Volume (vph)	50	0	16	0	0	0	23	52	0	0	155	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.967										0.974
Fl _t Protected		0.964						0.985				
Satd. Flow (prot)	0	1517	0	0	1921	0	0	1683	0	0	1643	0
Fl _t Permitted		0.964						0.985				
Satd. Flow (perm)	0	1517	0	0	1921	0	0	1683	0	0	1643	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			1773.8			247.2	
Travel Time (s)		13.9			4.8			79.8			11.1	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	24%	0%	0%	0%	0%	0%	0%	18%	0%	0%	8%	38%
Adj. Flow (vph)	61	0	20	0	0	0	28	63	0	0	189	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	0	0	0	0	91	0	0	235	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	28.2%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

2030 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	0	16	0	0	0	23	52	0	0	155	38
Future Volume (Veh/h)	50	0	16	0	0	0	23	52	0	0	155	38
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	61	0	20	0	0	0	28	63	0	0	189	46
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	331	331	212	351	354	63	235			63		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	331	331	212	351	354	63	235			63		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	98	100	100	100	98			100		
cM capacity (veh/h)	573	579	833	584	563	1007	1344			1553		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	81	0	91	235								
Volume Left	61	0	28	0								
Volume Right	20	0	0	46								
cSH	621	1700	1344	1553								
Volume to Capacity	0.13	0.00	0.02	0.00								
Queue Length 95th (m)	3.4	0.0	0.5	0.0								
Control Delay (s)	11.7	0.0	2.5	0.0								
Lane LOS	B	A	A									
Approach Delay (s)	11.7	0.0	2.5	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.9									
Intersection Capacity Utilization			28.2%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2030 AM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	676	2	0	244	72	0	2	0	138	0	78
Future Volume (vph)	25	676	2	0	244	72	0	2	0	138	0	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.581										0.757	
Satd. Flow (perm)	1116	1884	0	0	1847	1372	0	1921	0	0	1359	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						77						83
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	27	719	2	0	260	77	0	2	0	147	0	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	721	0	0	260	77	0	2	0	0	147	83
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm		NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings
8: Avonmore Road & Site Access

2030 AM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	6	6	99	216	9
Future Volume (vph)	11	6	6	99	216	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.951			0.995		
Flt Protected	0.969			0.997		
Satd. Flow (prot)	1313	0	0	1780	1755	0
Flt Permitted	0.969			0.997		
Satd. Flow (perm)	1313	0	0	1780	1755	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	186.4			200.6	1773.8	
Travel Time (s)	13.4			9.0	79.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	45%	17%	17%	7%	7%	56%
Adj. Flow (vph)	14	8	8	124	270	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	132	281	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 8: Avonmore Road & Site Access

2030 AM Future Total

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	6	6	99	216	9
Future Volume (Veh/h)	11	6	6	99	216	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	14	8	8	124	270	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	416	276	281			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	416	276	281			
tC, single (s)	6.8	6.4	4.3			
tC, 2 stage (s)						
tF (s)	3.9	3.5	2.4			
p0 queue free %	97	99	99			
cM capacity (veh/h)	516	729	1200			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	132	281			
Volume Left	14	8	0			
Volume Right	8	0	11			
cSH	577	1200	1700			
Volume to Capacity	0.04	0.01	0.17			
Queue Length 95th (m)	0.9	0.2	0.0			
Control Delay (s)	11.5	0.5	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.5	0.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			21.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	34.8	21.2	1.3
Average Queue (m)	13.5	4.2	0.1
95th Queue (m)	27.0	13.5	1.3
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	17.0	29.2	13.6	12.9
Average Queue (m)	8.1	12.7	1.2	1.2
95th Queue (m)	12.4	23.2	7.3	6.8
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	15.3	21.1	3.5
Average Queue (m)	2.5	9.9	0.1
95th Queue (m)	10.3	18.1	1.9
Link Distance (m)	87.5	216.6	140.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

Movement	EB	NB
Directions Served	LTR	LTR
Maximum Queue (m)	22.8	7.3
Average Queue (m)	9.2	0.6
95th Queue (m)	17.6	3.8
Link Distance (m)	300.4	1758.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	15.3	116.8	49.1	19.7	3.3	38.5	22.5
Average Queue (m)	4.6	57.2	16.1	4.4	0.2	16.1	10.8
95th Queue (m)	12.5	101.0	33.2	12.7	2.3	31.3	23.8
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)		0					
Queuing Penalty (veh)		0					
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)		3	0			10	2
Queuing Penalty (veh)		1	0			8	3

Intersection: 8: Avonmore Road & Site Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	21.3	5.8
Average Queue (m)	5.7	0.3
95th Queue (m)	16.9	2.7
Link Distance (m)	180.8	196.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 12

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2030 AM Future Total (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	676	2	0	244	72	0	2	0	138	0	78
Future Volume (vph)	25	676	2	0	244	72	0	2	0	138	0	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1825	1884	0	0	1847	1372	0	1921	0	0	1706	1372
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	27	719	2	0	260	77	0	2	0	147	0	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	721	0	0	260	77	0	2	0	0	147	83
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	56.7%						ICU Level of Service B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
5: Avonmore Road & County Road 2

2030 AM Future Total (Unsignalized)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	676	2	0	244	72	0	2	0	138	0	78
Future Volume (Veh/h)	25	676	2	0	244	72	0	2	0	138	0	78
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	27	719	2	0	260	77	0	2	0	147	0	83
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												2
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	337			721			1076	1111	720	1034	1035	260
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	337			721			1076	1111	720	1034	1035	260
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.5
p0 queue free %	98			100			100	99	100	27	100	89
cM capacity (veh/h)	1234			890			174	206	431	201	229	739
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	27	721	260	77	2	230						
Volume Left	27	0	0	0	0	147						
Volume Right	0	2	0	77	0	83						
cSH	1234	1700	890	1700	206	300						
Volume to Capacity	0.02	0.42	0.00	0.05	0.01	0.77						
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.2	44.7						
Control Delay (s)	8.0	0.0	0.0	0.0	22.6	47.4						
Lane LOS	A				C	E						
Approach Delay (s)	0.3		0.0		22.6	47.4						
Approach LOS					C	E						
Intersection Summary												
Average Delay			8.5									
Intersection Capacity Utilization			56.7%		ICU Level of Service				B			
Analysis Period (min)			15									

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	NB	SB	SB
Directions Served	L	LTR	LT	R
Maximum Queue (m)	11.6	8.1	239.8	22.6
Average Queue (m)	2.2	0.6	93.2	17.6
95th Queue (m)	7.9	4.0	219.1	31.5
Link Distance (m)		51.8	387.5	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	80.0			15.0
Storage Blk Time (%)			72	5
Queuing Penalty (veh)			57	7

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2030 PM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	27	44	115	120	33
Future Volume (vph)	27	27	44	115	120	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932			0.971		
Flt Protected	0.976			0.986		
Satd. Flow (prot)	1513	0	0	1879	1846	0
Flt Permitted	0.976			0.986		
Satd. Flow (perm)	1513	0	0	1879	1846	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	20%	11%	3%	0%	0%	5%
Adj. Flow (vph)	29	29	47	124	129	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	0	171	164	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2030 PM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	27	44	115	120	33
Future Volume (Veh/h)	27	27	44	115	120	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	29	29	47	124	129	35
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	146	164			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	364	146	164			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.2			
p0 queue free %	95	97	97			
cM capacity (veh/h)	581	877	1408			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	58	171	164			
Volume Left	29	47	0			
Volume Right	29	0	35			
cSH	699	1408	1700			
Volume to Capacity	0.08	0.03	0.10			
Queue Length 95th (m)	2.1	0.8	0.0			
Control Delay (s)	10.6	2.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.6	2.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			30.1%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	2	57	63	45	29	42	84	16	22	45	7
Future Volume (vph)	6	2	57	63	45	29	42	84	16	22	45	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.883			0.971			0.985			0.987	
Flt Protected		0.995			0.978			0.985			0.985	
Satd. Flow (prot)	0	1535	0	0	1783	0	0	1750	0	0	1605	0
Flt Permitted		0.995			0.978			0.985			0.985	
Satd. Flow (perm)	0	1535	0	0	1783	0	0	1750	0	0	1605	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	67%	0%	4%	0%	7%	0%	0%	11%	0%	55%	0%	0%
Adj. Flow (vph)	8	3	72	80	57	37	53	106	20	28	57	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	0	0	174	0	0	179	0	0	94	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	31.2%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2030 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	2	57	63	45	29	42	84	16	22	45	7
Future Volume (Veh/h)	6	2	57	63	45	29	42	84	16	22	45	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	8	3	72	80	57	37	53	106	20	28	57	9
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	350	62	413	344	116	66			126		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	405	350	62	413	344	116	66			126		
tC, single (s)	7.8	6.5	6.2	7.1	6.6	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	4.1	4.0	3.3	3.5	4.1	3.3	2.2			2.7		
p0 queue free %	98	99	93	84	89	96	97			98		
cM capacity (veh/h)	386	545	998	489	538	942	1549			1190		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	83	174	179	94								
Volume Left	8	80	53	28								
Volume Right	72	37	20	9								
cSH	844	563	1549	1190								
Volume to Capacity	0.10	0.31	0.03	0.02								
Queue Length 95th (m)	2.5	9.9	0.8	0.5								
Control Delay (s)	9.7	14.2	2.4	2.6								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.7	14.2	2.4	2.6								
Approach LOS	A	B										
Intersection Summary												
Average Delay			7.5									
Intersection Capacity Utilization			31.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2030 PM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	2	61	0	9	0	45	73	5	23	0
Future Volume (vph)	0	0	2	61	0	9	0	45	73	5	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.982			0.916				
Fl _t Protected					0.958						0.991	
Satd. Flow (prot)	0	1662	0	0	1528	0	0	1648	0	0	1904	0
Fl _t Permitted					0.958						0.991	
Satd. Flow (perm)	0	1662	0	0	1528	0	0	1648	0	0	1904	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	21%	0%	0%	0%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	0	3	87	0	13	0	64	104	7	33	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	100	0	0	168	0	0	40	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2030 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	61	0	9	0	45	73	5	23	0
Future Volume (Veh/h)	0	0	2	61	0	9	0	45	73	5	23	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	3	87	0	13	0	64	104	7	33	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	176	215	33	166	163	116	33			168		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	176	215	33	166	163	116	33			168		
tC, single (s)	7.1	6.5	6.2	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	88	100	99	100			100		
cM capacity (veh/h)	777	683	1046	753	729	942	1592			1422		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	3	100	168	40								
Volume Left	0	87	0	7								
Volume Right	3	13	104	0								
cSH	1046	773	1592	1422								
Volume to Capacity	0.00	0.13	0.00	0.00								
Queue Length 95th (m)	0.1	3.4	0.0	0.1								
Control Delay (s)	8.5	10.4	0.0	1.4								
Lane LOS	A	B		A								
Approach Delay (s)	8.5	10.4	0.0	1.4								
Approach LOS	A	B										
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			24.1%		ICU Level of Service				A			
Analysis Period (min)			15									

4: Avonmore Road/Avonmore Road & County Road 29/Pieur Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	2	27	2	0	0	23	151	0	0	102	29
Future Volume (vph)	57	2	27	2	0	0	23	151	0	0	102	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.958										0.970
Flt Protected		0.968			0.950			0.994				
Satd. Flow (prot)	0	1547	0	0	1825	0	0	1724	0	0	1665	0
Flt Permitted		0.968			0.950			0.994				
Satd. Flow (perm)	0	1547	0	0	1825	0	0	1724	0	0	1665	0
Link Speed (k/h)		80			50			80				80
Link Distance (m)		309.2			66.2			1773.8				247.2
Travel Time (s)		13.9			4.8			79.8				11.1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	10%	0%	27%	0%	0%	0%	9%	11%	0%	0%	11%	15%
Adj. Flow (vph)	70	2	33	2	0	0	28	186	0	0	126	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	2	0	0	214	0	0	162	0
Enter Blocked Intersection	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)		4.9			1.6			4.9				4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free				Free
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
 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

2030 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	2	27	2	0	0	23	151	0	0	102	29
Future Volume (Veh/h)	57	2	27	2	0	0	23	151	0	0	102	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	70	2	33	2	0	0	28	186	0	0	126	36
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	386	386	144	420	404	186	162			186		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	386	386	144	420	404	186	162			186		
tC, single (s)	7.2	6.5	6.5	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	87	100	96	100	100	100	98			100		
cM capacity (veh/h)	550	540	841	516	528	861	1375			1401		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	105	2	214	162								
Volume Left	70	2	28	0								
Volume Right	33	0	0	36								
cSH	617	516	1375	1401								
Volume to Capacity	0.17	0.00	0.02	0.00								
Queue Length 95th (m)	4.6	0.1	0.5	0.0								
Control Delay (s)	12.0	12.0	1.2	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	12.0	12.0	1.2	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			3.2									
Intersection Capacity Utilization			30.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2030 PM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	459	2	0	705	203	2	0	5	90	1	114
Future Volume (vph)	62	459	2	0	705	203	2	0	5	90	1	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.904				0.850
Flt Protected	0.950							0.986			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1712	0	0	1744	1633
Flt Permitted	0.147							0.961			0.755	
Satd. Flow (perm)	264	1864	0	0	1902	1570	0	1669	0	0	1382	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				216		27				121
Link Speed (k/h)		80			80			50				80
Link Distance (m)		188.5			206.1			70.4				401.1
Travel Time (s)		8.5			9.3			5.1				18.0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	66	488	2	0	750	216	2	0	5	96	1	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	490	0	0	750	216	0	7	0	0	97	121
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		15.0			10.0			10.0				5.0
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2				6

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

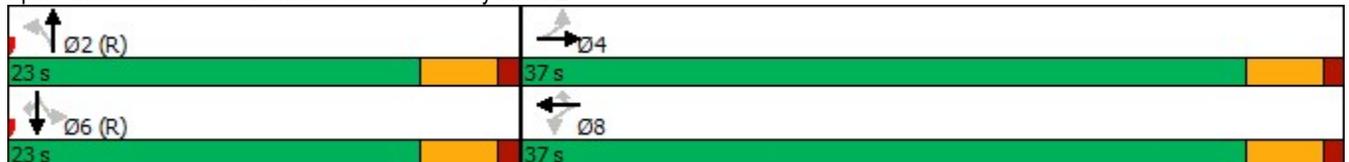
2030 PM Future Total

	↖		→		↗		↖		↗		↘	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	37.0	37.0		37.0	37.0	37.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	61.7%	61.7%		61.7%	61.7%	61.7%	38.3%	38.3%		38.3%	38.3%	38.3%
Maximum Green (s)	32.5	32.5		32.5	32.5	32.5	18.5	18.5		18.5	18.5	18.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.5	4.5			4.5	4.5		4.5			4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	28.9	28.9			28.9	28.9		22.1			22.1	22.1
Actuated g/C Ratio	0.48	0.48			0.48	0.48		0.37			0.37	0.37
v/c Ratio	0.52	0.55			0.82	0.25		0.01			0.19	0.18
Control Delay	26.4	12.8			21.1	2.0		1.6			16.2	4.5
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	26.4	12.8			21.1	2.0		1.6			16.2	4.5
LOS	C	B			C	A		A			B	A
Approach Delay		14.4			16.8			1.6			9.7	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 15.1
 Intersection Capacity Utilization 70.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 5: Avonmore Road & County Road 2



Lanes, Volumes, Timings
8: Avonmore Road & Site Access

2030 PM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	5	6	265	205	9
Future Volume (vph)	9	5	6	265	205	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952			0.994		
Flt Protected	0.969			0.999		
Satd. Flow (prot)	1237	0	0	1774	1736	0
Flt Permitted	0.969			0.999		
Satd. Flow (perm)	1237	0	0	1774	1736	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	186.4			200.6	1773.8	
Travel Time (s)	13.4			9.0	79.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	56%	20%	17%	8%	8%	56%
Adj. Flow (vph)	11	6	8	331	256	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	339	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

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
 8: Avonmore Road & Site Access

2030 PM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	5	6	265	205	9
Future Volume (Veh/h)	9	5	6	265	205	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	11	6	8	331	256	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	608	262	267			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	608	262	267			
tC, single (s)	7.0	6.4	4.3			
tC, 2 stage (s)						
tF (s)	4.0	3.5	2.4			
p0 queue free %	97	99	99			
cM capacity (veh/h)	379	735	1215			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	17	339	267			
Volume Left	11	8	0			
Volume Right	6	0	11			
cSH	457	1215	1700			
Volume to Capacity	0.04	0.01	0.16			
Queue Length 95th (m)	0.9	0.2	0.0			
Control Delay (s)	13.2	0.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.2	0.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			28.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	25.1	13.2	1.3
Average Queue (m)	9.8	2.5	0.0
95th Queue (m)	19.7	9.3	0.9
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	20.4	28.7	14.2	15.8
Average Queue (m)	8.0	13.2	1.4	1.2
95th Queue (m)	15.5	22.2	7.4	7.6
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	6.6	21.3	1.0	3.5
Average Queue (m)	0.4	10.1	0.0	0.2
95th Queue (m)	3.2	19.1	0.7	2.2
Link Distance (m)	87.5	216.6	57.6	140.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	22.0	8.9	12.2
Average Queue (m)	11.1	1.0	0.8
95th Queue (m)	19.3	5.6	5.7
Link Distance (m)	300.4	60.6	1758.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	46.2	69.9	95.7	49.5	8.3	45.0	22.5
Average Queue (m)	16.4	28.7	45.1	8.4	1.3	16.8	12.9
95th Queue (m)	35.6	54.8	75.6	27.2	6.1	37.7	23.8
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)		0	2			8	6
Queuing Penalty (veh)		0	4			9	6

Intersection: 8: Avonmore Road & Site Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	20.9	6.3
Average Queue (m)	4.8	0.3
95th Queue (m)	15.9	3.1
Link Distance (m)	180.8	196.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 19

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2030 PM Future Total (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	459	2	0	705	203	2	0	5	90	1	114
Future Volume (vph)	62	459	2	0	705	203	2	0	5	90	1	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.904				0.850
Flt Protected	0.950							0.986			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1712	0	0	1744	1633
Flt Permitted	0.950							0.986			0.953	
Satd. Flow (perm)	1706	1864	0	0	1902	1570	0	1712	0	0	1744	1633
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	66	488	2	0	750	216	2	0	5	96	1	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	490	0	0	750	216	0	7	0	0	97	121
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	69.9%						ICU Level of Service C					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
5: Avonmore Road & County Road 2

2030 PM Future Total (Unsignalized)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	459	2	0	705	203	2	0	5	90	1	114
Future Volume (Veh/h)	62	459	2	0	705	203	2	0	5	90	1	114
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	66	488	2	0	750	216	2	0	5	96	1	121
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
2												
Median type												
None												
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume												
966												
490												
1432												
1587												
489												
1375												
1372												
750												
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol												
966												
490												
1432												
1587												
489												
1375												
1372												
750												
tC, single (s)												
4.2												
4.1												
7.1												
6.5												
6.2												
7.1												
6.5												
6.2												
tF (s)												
2.3												
2.2												
3.5												
4.0												
3.3												
3.5												
4.0												
3.3												
p0 queue free %												
90												
100												
97												
100												
99												
14												
99												
71												
cM capacity (veh/h)												
693												
1084												
74												
99												
583												
111												
133												
415												
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	66	490	750	216	7	218						
Volume Left	66	0	0	0	2	96						
Volume Right	0	2	0	216	5	121						
cSH	693	1700	1084	1700	196	219						
Volume to Capacity	0.10	0.29	0.00	0.13	0.04	1.00						
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.8	68.4						
Control Delay (s)	10.7	0.0	0.0	0.0	24.0	106.7						
Lane LOS	B				C	F						
Approach Delay (s)	1.3		0.0		24.0	106.7						
Approach LOS					C	F						
Intersection Summary												
Average Delay			13.8									
Intersection Capacity Utilization			69.9%				ICU Level of Service		C			
Analysis Period (min)			15									

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	LT	R	LTR	LT	R
Maximum Queue (m)	29.3	0.6	4.0	9.4	375.9	22.6
Average Queue (m)	9.1	0.0	0.2	2.1	284.7	15.8
95th Queue (m)	21.2	0.4	2.0	7.8	468.2	32.2
Link Distance (m)		189.1		51.8	387.5	
Upstream Blk Time (%)					33	
Queuing Penalty (veh)					0	
Storage Bay Dist (m)	80.0		60.0			15.0
Storage Blk Time (%)					92	20
Queuing Penalty (veh)					105	18

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2035 AM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	42	83	102	146	55
Future Volume (vph)	32	42	83	102	146	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.923			0.963		
Flt Protected	0.979			0.978		
Satd. Flow (prot)	1330	0	0	1854	1791	0
Flt Permitted	0.979			0.978		
Satd. Flow (perm)	1330	0	0	1854	1791	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	55%	12%	3%	0%	3%	4%
Adj. Flow (vph)	37	49	97	119	170	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	0	216	234	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.3% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2035 AM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	42	83	102	146	55
Future Volume (Veh/h)	32	42	83	102	146	55
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	37	49	97	119	170	64
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	515	202	234			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	515	202	234			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	91	94	93			
cM capacity (veh/h)	406	814	1328			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	86	216	234			
Volume Left	37	97	0			
Volume Right	49	0	64			
cSH	568	1328	1700			
Volume to Capacity	0.15	0.07	0.14			
Queue Length 95th (m)	4.0	1.8	0.0			
Control Delay (s)	12.5	3.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.5	3.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			35.3%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	0	107	61	32	15	30	83	20	27	70	17
Future Volume (vph)	6	0	107	61	32	15	30	83	20	27	70	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.872			0.981			0.980			0.980	
Fl _t Protected		0.997			0.973			0.989			0.988	
Satd. Flow (prot)	0	1670	0	0	1662	0	0	1656	0	0	1526	0
Fl _t Permitted		0.997			0.973			0.989			0.988	
Satd. Flow (perm)	0	1670	0	0	1662	0	0	1656	0	0	1526	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	11%	14%	0%	0%	20%	0%	70%	3%	25%
Adj. Flow (vph)	6	0	113	64	34	16	32	87	21	28	74	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	119	0	0	114	0	0	140	0	0	120	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
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
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2035 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	107	61	32	15	30	83	20	27	70	17
Future Volume (Veh/h)	6	0	107	61	32	15	30	83	20	27	70	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	6	0	113	64	34	16	32	87	21	28	74	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	334	311	83	414	310	98	92			108		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	334	311	83	414	310	98	92			108		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.2	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.3	2.2			2.8		
p0 queue free %	99	100	88	86	94	98	98			98		
cM capacity (veh/h)	565	580	982	456	559	964	1515			1149		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	119	114	140	120								
Volume Left	6	64	32	28								
Volume Right	113	16	21	18								
cSH	947	523	1515	1149								
Volume to Capacity	0.13	0.22	0.02	0.02								
Queue Length 95th (m)	3.3	6.2	0.5	0.6								
Control Delay (s)	9.3	13.8	1.8	2.1								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.3	13.8	1.8	2.1								
Approach LOS	A	B										
Intersection Summary												
Average Delay			6.5									
Intersection Capacity Utilization			28.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2035 AM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	11	82	6	4	7	24	72	7	46	0
Future Volume (vph)	0	0	11	82	6	4	7	24	72	7	46	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.994			0.905				
Flt Protected					0.957			0.997			0.994	
Satd. Flow (prot)	0	1385	0	0	1586	0	0	1474	0	0	1910	0
Flt Permitted					0.957			0.997			0.994	
Satd. Flow (perm)	0	1385	0	0	1586	0	0	1474	0	0	1910	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	20%	17%	0%	0%	0%	0%	25%	0%	0%	0%
Adj. Flow (vph)	0	0	12	86	6	4	7	25	76	7	48	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	96	0	0	108	0	0	55	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.5%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 3: Moulinette Road & Private Driveway/County Road 29

2035 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	11	82	6	4	7	24	72	7	46	0
Future Volume (Veh/h)	0	0	11	82	6	4	7	24	72	7	46	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	12	86	6	4	7	25	76	7	48	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	146	177	48	151	139	63	48			101		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146	177	48	151	139	63	48			101		
tC, single (s)	7.1	6.5	6.4	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	89	99	100	100			100		
cM capacity (veh/h)	813	714	972	769	749	1007	1572			1504		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	96	108	55								
Volume Left	0	86	7	7								
Volume Right	12	4	76	0								
cSH	972	775	1572	1504								
Volume to Capacity	0.01	0.12	0.00	0.00								
Queue Length 95th (m)	0.3	3.2	0.1	0.1								
Control Delay (s)	8.7	10.3	0.5	1.0								
Lane LOS	A	B	A	A								
Approach Delay (s)	8.7	10.3	0.5	1.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Utilization			25.5%	ICU Level of Service	A							
Analysis Period (min)			15									

4: Avonmore Road/Avonmore Road & County Road 29/Pieur Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	0	19	0	0	0	25	57	0	0	171	42
Future Volume (vph)	63	0	19	0	0	0	25	57	0	0	171	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.969									0.974	
Fl _t Protected		0.963						0.985				
Satd. Flow (prot)	0	1513	0	0	1921	0	0	1681	0	0	1643	0
Fl _t Permitted		0.963						0.985				
Satd. Flow (perm)	0	1513	0	0	1921	0	0	1681	0	0	1643	0
Link Speed (k/h)		80			50			80			80	
Link Distance (m)		309.2			66.2			1773.8			247.2	
Travel Time (s)		13.9			4.8			79.8			11.1	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	24%	0%	0%	0%	0%	0%	0%	18%	0%	0%	8%	38%
Adj. Flow (vph)	77	0	23	0	0	0	30	70	0	0	209	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	0	0	0	100	0	0	260	0
Enter Blocked Intersection	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)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

2035 AM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	0	19	0	0	0	25	57	0	0	171	42
Future Volume (Veh/h)	63	0	19	0	0	0	25	57	0	0	171	42
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	77	0	23	0	0	0	30	70	0	0	209	51
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	364	364	234	388	390	70	260			70		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	364	364	234	388	390	70	260			70		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	97	100	100	100	98			100		
cM capacity (veh/h)	543	554	810	549	536	998	1316			1544		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	100	0	100	260								
Volume Left	77	0	30	0								
Volume Right	23	0	0	51								
cSH	588	1700	1316	1544								
Volume to Capacity	0.17	0.00	0.02	0.00								
Queue Length 95th (m)	4.6	0.0	0.5	0.0								
Control Delay (s)	12.4	0.0	2.5	0.0								
Lane LOS	B	A	A									
Approach Delay (s)	12.4	0.0	2.5	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			3.2									
Intersection Capacity Utilization			30.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2035 AM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	747	3	0	269	79	0	3	0	151	0	86
Future Volume (vph)	28	747	3	0	269	79	0	3	0	151	0	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1882	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.561										0.756	
Satd. Flow (perm)	1078	1882	0	0	1847	1372	0	1921	0	0	1357	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						84						91
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	30	795	3	0	286	84	0	3	0	161	0	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	798	0	0	286	84	0	3	0	0	161	91
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm		NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings
8: Avonmore Road & Site Access

2035 AM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	6	6	110	237	9
Future Volume (vph)	11	6	6	110	237	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.951			0.995		
Flt Protected	0.969			0.997		
Satd. Flow (prot)	1313	0	0	1781	1758	0
Flt Permitted	0.969			0.997		
Satd. Flow (perm)	1313	0	0	1781	1758	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	186.4			200.6	1773.8	
Travel Time (s)	13.4			9.0	79.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	45%	17%	17%	7%	7%	56%
Adj. Flow (vph)	14	8	8	138	296	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	146	307	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.0% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
8: Avonmore Road & Site Access

2035 AM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	6	6	110	237	9
Future Volume (Veh/h)	11	6	6	110	237	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	14	8	8	138	296	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	456	302	307			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	456	302	307			
tC, single (s)	6.8	6.4	4.3			
tC, 2 stage (s)						
tF (s)	3.9	3.5	2.4			
p0 queue free %	97	99	99			
cM capacity (veh/h)	488	704	1173			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	146	307			
Volume Left	14	8	0			
Volume Right	8	0	11			
cSH	549	1173	1700			
Volume to Capacity	0.04	0.01	0.18			
Queue Length 95th (m)	0.9	0.2	0.0			
Control Delay (s)	11.8	0.5	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.8	0.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			23.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	32.8	17.6	4.4
Average Queue (m)	13.8	4.6	0.2
95th Queue (m)	25.8	12.8	2.9
Link Distance (m)	172.0	233.5	111.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	18.0	31.4	13.5	13.8
Average Queue (m)	8.6	14.6	0.8	1.3
95th Queue (m)	13.6	26.0	6.1	7.6
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	17.4	20.7	3.0	7.0
Average Queue (m)	2.4	10.7	0.1	0.2
95th Queue (m)	10.2	18.3	1.5	2.6
Link Distance (m)	87.5	216.6	57.6	140.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

Movement	EB	NB
Directions Served	LTR	LTR
Maximum Queue (m)	24.8	7.9
Average Queue (m)	11.3	1.1
95th Queue (m)	20.6	5.4
Link Distance (m)	300.4	1758.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	16.5	128.9	48.7	15.6	8.2	48.4	22.8
Average Queue (m)	4.4	59.5	16.8	4.2	0.6	20.2	11.8
95th Queue (m)	11.8	106.3	35.5	11.3	3.9	40.6	24.4
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)		0					
Queuing Penalty (veh)		0					
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)		4	0			12	3
Queuing Penalty (veh)		1	0			11	4

Intersection: 8: Avonmore Road & Site Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	20.6	6.0
Average Queue (m)	4.9	0.3
95th Queue (m)	15.9	3.1
Link Distance (m)	180.8	196.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 16

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2035 AM Future Total (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	747	3	0	269	79	0	3	0	151	0	86
Future Volume (vph)	28	747	3	0	269	79	0	3	0	151	0	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1825	1882	0	0	1847	1372	0	1921	0	0	1706	1372
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1825	1882	0	0	1847	1372	0	1921	0	0	1706	1372
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	4%	19%	0%	0%	0%	7%	0%	19%
Adj. Flow (vph)	30	795	3	0	286	84	0	3	0	161	0	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	798	0	0	286	84	0	3	0	0	161	91
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	61.2%						ICU Level of Service B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
5: Avonmore Road & County Road 2

2035 AM Future Total (Unsignalized)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	747	3	0	269	79	0	3	0	151	0	86
Future Volume (Veh/h)	28	747	3	0	269	79	0	3	0	151	0	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	30	795	3	0	286	84	0	3	0	161	0	91
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
2												
Median type												
None None												
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume												
370 798 1188 1226 796 1142 1144 286												
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol												
370 798 1188 1226 796 1142 1144 286												
tC, single (s)												
4.1 4.1 7.1 6.5 6.2 7.2 6.5 6.4												
tC, 2 stage (s)												
tF (s)												
2.2 2.2 3.5 4.0 3.3 3.6 4.0 3.5												
p0 queue free %												
97 100 100 98 100 4 100 87												
cM capacity (veh/h)												
1200 833 143 176 390 168 196 714												
Direction, Lane #												
EB 1 EB 2 WB 1 WB 2 NB 1 SB 1												
Volume Total												
30 798 286 84 3 252												
Volume Left												
30 0 0 0 0 161												
Volume Right												
0 3 0 84 0 91												
cSH												
1200 1700 833 1700 176 242												
Volume to Capacity												
0.03 0.47 0.00 0.05 0.02 1.04												
Queue Length 95th (m)												
0.6 0.0 0.0 0.0 0.4 78.7												
Control Delay (s)												
8.1 0.0 0.0 0.0 25.9 113.0												
Lane LOS												
A D F												
Approach Delay (s)												
0.3 0.0 25.9 113.0												
Approach LOS												
D F												
Intersection Summary												
Average Delay												
19.8												
Intersection Capacity Utilization												
61.2% ICU Level of Service												
B												
Analysis Period (min)												
15												

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	NB	SB	SB
Directions Served	L	LTR	LT	R
Maximum Queue (m)	8.7	8.3	381.9	22.6
Average Queue (m)	2.1	1.0	261.1	18.8
95th Queue (m)	7.2	5.2	453.8	32.0
Link Distance (m)		51.8	387.5	
Upstream Blk Time (%)			22	
Queuing Penalty (veh)			0	
Storage Bay Dist (m)	80.0			15.0
Storage Blk Time (%)			94	7
Queuing Penalty (veh)			81	10

Lanes, Volumes, Timings
 1: Moulinette Road & Hwy 401 EB Ramps

2035 PM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	30	49	127	132	36
Future Volume (vph)	29	30	49	127	132	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.931			0.971		
Flt Protected	0.976			0.986		
Satd. Flow (prot)	1512	0	0	1878	1846	0
Flt Permitted	0.976			0.986		
Satd. Flow (perm)	1512	0	0	1878	1846	0
Link Speed (k/h)	30			80	80	
Link Distance (m)	181.7			243.4	132.3	
Travel Time (s)	21.8			11.0	6.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	20%	11%	3%	0%	0%	5%
Adj. Flow (vph)	31	32	53	137	142	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	0	190	181	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 1: Moulinette Road & Hwy 401 EB Ramps

2035 PM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	30	49	127	132	36
Future Volume (Veh/h)	29	30	49	127	132	36
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	31	32	53	137	142	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	404	162	181			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	404	162	181			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.2			
p0 queue free %	94	96	96			
cM capacity (veh/h)	547	860	1388			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	63	190	181			
Volume Left	31	53	0			
Volume Right	32	0	39			
cSH	671	1388	1700			
Volume to Capacity	0.09	0.04	0.11			
Queue Length 95th (m)	2.4	0.9	0.0			
Control Delay (s)	10.9	2.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.9	2.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			32.0%	ICU Level of Service	A	
Analysis Period (min)			15			

2: Moulinette Road & County Road 29/Hwy 401 WB ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	2	73	70	50	32	46	92	17	24	49	8
Future Volume (vph)	8	2	73	70	50	32	46	92	17	24	49	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.882			0.971			0.985			0.987	
Flt Protected		0.995			0.977			0.985			0.986	
Satd. Flow (prot)	0	1534	0	0	1782	0	0	1750	0	0	1609	0
Flt Permitted		0.995			0.977			0.985			0.986	
Satd. Flow (perm)	0	1534	0	0	1782	0	0	1750	0	0	1609	0
Link Speed (k/h)		80			30			80			80	
Link Distance (m)		180.3			180.8			60.6			82.0	
Travel Time (s)		8.1			21.7			2.7			3.7	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	67%	0%	4%	0%	7%	0%	0%	11%	0%	55%	0%	0%
Adj. Flow (vph)	10	3	92	89	63	41	58	116	22	30	62	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	193	0	0	196	0	0	102	0
Enter Blocked Intersection	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			8.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.9%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

2035 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	2	73	70	50	32	46	92	17	24	49	8
Future Volume (Veh/h)	8	2	73	70	50	32	46	92	17	24	49	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	10	3	92	89	63	41	58	116	22	30	62	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	442	381	67	464	375	127	72			138		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	442	381	67	464	375	127	72			138		
tC, single (s)	7.8	6.5	6.2	7.1	6.6	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	4.1	4.0	3.3	3.5	4.1	3.3	2.2			2.7		
p0 queue free %	97	99	91	80	88	96	96			97		
cM capacity (veh/h)	355	520	991	441	514	929	1541			1176		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	105	193	196	102								
Volume Left	10	89	58	30								
Volume Right	92	41	22	10								
cSH	828	523	1541	1176								
Volume to Capacity	0.13	0.37	0.04	0.03								
Queue Length 95th (m)	3.3	12.8	0.9	0.6								
Control Delay (s)	10.0	15.8	2.4	2.5								
Lane LOS	A	C	A	A								
Approach Delay (s)	10.0	15.8	2.4	2.5								
Approach LOS	A	C										
Intersection Summary												
Average Delay			8.1									
Intersection Capacity Utilization			32.9%	ICU Level of Service	A							
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Moulinette Road & Private Driveway/County Road 29

2035 PM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	76	0	12	0	50	80	5	25	0
Future Volume (vph)	0	0	3	76	0	12	0	50	80	5	25	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.865			0.982			0.917				
Fl _t Protected					0.959						0.992	
Satd. Flow (prot)	0	1662	0	0	1531	0	0	1650	0	0	1906	0
Fl _t Permitted					0.959						0.992	
Satd. Flow (perm)	0	1662	0	0	1531	0	0	1650	0	0	1906	0
Link Speed (k/h)		50			80			80			50	
Link Distance (m)		94.7			225.1			82.0			149.3	
Travel Time (s)		6.8			10.1			3.7			10.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	21%	0%	0%	0%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	0	4	109	0	17	0	71	114	7	36	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	126	0	0	185	0	0	43	0
Enter Blocked Intersection	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)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

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
 3: Moulinette Road & Private Driveway/County Road 29

2035 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	3	76	0	12	0	50	80	5	25	0
Future Volume (Veh/h)	0	0	3	76	0	12	0	50	80	5	25	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	4	109	0	17	0	71	114	7	36	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	195	235	36	182	178	128	36			185		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	195	235	36	182	178	128	36			185		
tC, single (s)	7.1	6.5	6.2	7.3	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	85	100	98	100			100		
cM capacity (veh/h)	752	666	1042	734	716	927	1588			1402		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	126	185	43								
Volume Left	0	109	0	7								
Volume Right	4	17	114	0								
cSH	1042	755	1588	1402								
Volume to Capacity	0.00	0.17	0.00	0.00								
Queue Length 95th (m)	0.1	4.5	0.0	0.1								
Control Delay (s)	8.5	10.7	0.0	1.3								
Lane LOS	A	B		A								
Approach Delay (s)	8.5	10.7	0.0	1.3								
Approach LOS	A	B										
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			25.8%		ICU Level of Service				A			
Analysis Period (min)			15									

4: Avonmore Road/Avonmore Road & County Road 29/Pieur Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	2	33	3	0	0	24	167	0	0	113	32
Future Volume (vph)	73	2	33	3	0	0	24	167	0	0	113	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.958										0.970
Flt Protected		0.967			0.950			0.994				
Satd. Flow (prot)	0	1546	0	0	1825	0	0	1724	0	0	1665	0
Flt Permitted		0.967			0.950			0.994				
Satd. Flow (perm)	0	1546	0	0	1825	0	0	1724	0	0	1665	0
Link Speed (k/h)		80			50			80				80
Link Distance (m)		309.2			66.2			1773.8				247.2
Travel Time (s)		13.9			4.8			79.8				11.1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	10%	0%	27%	0%	0%	0%	9%	11%	0%	0%	11%	15%
Adj. Flow (vph)	90	2	41	4	0	0	30	206	0	0	140	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	4	0	0	236	0	0	180	0
Enter Blocked Intersection	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)		4.9			1.6			4.9				4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free				Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

2035 PM Future Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	2	33	3	0	0	24	167	0	0	113	32
Future Volume (Veh/h)	73	2	33	3	0	0	24	167	0	0	113	32
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	90	2	41	4	0	0	30	206	0	0	140	40
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	426	426	160	468	446	206	180			206		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	426	426	160	468	446	206	180			206		
tC, single (s)	7.2	6.5	6.5	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	83	100	95	99	100	100	98			100		
cM capacity (veh/h)	516	512	824	474	499	840	1354			1377		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	133	4	236	180								
Volume Left	90	4	30	0								
Volume Right	41	0	0	40								
cSH	583	474	1354	1377								
Volume to Capacity	0.23	0.01	0.02	0.00								
Queue Length 95th (m)	6.6	0.2	0.5	0.0								
Control Delay (s)	13.0	12.7	1.2	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	13.0	12.7	1.2	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			3.7									
Intersection Capacity Utilization			33.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2035 PM Future Total

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	507	3	0	778	224	3	0	5	99	1	125
Future Volume (vph)	69	507	3	0	778	224	3	0	5	99	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.916				0.850
Flt Protected	0.950							0.982			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1728	0	0	1744	1633
Flt Permitted	0.132							0.943			0.744	
Satd. Flow (perm)	237	1864	0	0	1902	1570	0	1659	0	0	1362	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				238		27				133
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	73	539	3	0	828	238	3	0	5	105	1	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	542	0	0	828	238	0	8	0	0	106	133
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings
8: Avonmore Road & Site Access

2035 PM Future Total



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	5	6	293	225	9
Future Volume (vph)	9	5	6	293	225	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952			0.995		
Flt Protected	0.969			0.999		
Satd. Flow (prot)	1237	0	0	1774	1741	0
Flt Permitted	0.969			0.999		
Satd. Flow (perm)	1237	0	0	1774	1741	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	186.4			200.6	1773.8	
Travel Time (s)	13.4			9.0	79.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	56%	20%	17%	8%	8%	56%
Adj. Flow (vph)	11	6	8	366	281	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	374	292	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.2%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
8: Avonmore Road & Site Access

2035 PM Future Total



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	5	6	293	225	9
Future Volume (Veh/h)	9	5	6	293	225	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	11	6	8	366	281	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	668	286	292			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	668	286	292			
tC, single (s)	7.0	6.4	4.3			
tC, 2 stage (s)						
tF (s)	4.0	3.5	2.4			
p0 queue free %	97	99	99			
cM capacity (veh/h)	348	712	1189			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	17	374	292			
Volume Left	11	8	0			
Volume Right	6	0	11			
cSH	424	1189	1700			
Volume to Capacity	0.04	0.01	0.17			
Queue Length 95th (m)	0.9	0.2	0.0			
Control Delay (s)	13.8	0.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.8	0.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	0.5					
Intersection Capacity Utilization	30.2%			ICU Level of Service	A	
Analysis Period (min)	15					

Intersection: 1: Moulinette Road & Hwy 401 EB Ramps

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	23.7	15.8
Average Queue (m)	10.6	3.1
95th Queue (m)	20.2	10.9
Link Distance (m)	172.0	233.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Moulinette Road & County Road 29/Hwy 401 WB ramps

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	20.2	26.1	14.0	13.6
Average Queue (m)	9.5	13.7	1.0	1.1
95th Queue (m)	16.9	22.2	6.8	7.2
Link Distance (m)	171.0	171.7	39.3	57.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Moulinette Road & Private Driveway/County Road 29

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	8.4	21.4	3.4
Average Queue (m)	0.9	11.1	0.1
95th Queue (m)	5.2	18.2	1.7
Link Distance (m)	87.5	216.6	140.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Avonmore Road/Avnomore Road & County Road 29/Pieur Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	23.0	8.9	11.5	2.8
Average Queue (m)	11.4	1.0	0.8	0.1
95th Queue (m)	19.7	5.7	5.9	2.0
Link Distance (m)	300.4	60.6	1758.1	238.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (m)	72.2	77.6	118.7	68.5	8.3	37.3	22.3
Average Queue (m)	27.8	31.8	50.6	11.7	1.5	17.3	14.6
95th Queue (m)	60.7	63.0	91.1	42.4	6.6	32.9	24.4
Link Distance (m)		163.6	189.1		51.8	387.5	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	80.0			60.0			15.0
Storage Blk Time (%)	1	0	4			8	10
Queuing Penalty (veh)	5	0	9			10	10

Intersection: 8: Avonmore Road & Site Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	18.3	5.9
Average Queue (m)	4.3	0.2
95th Queue (m)	14.6	2.4
Link Distance (m)	180.8	196.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 34

Lanes, Volumes, Timings
5: Avonmore Road & County Road 2

2035 PM Future Total (Unsignalized)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	507	3	0	778	224	3	0	5	99	1	125
Future Volume (vph)	69	507	3	0	778	224	3	0	5	99	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	0.0		60.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	40.0			7.6			7.6			7.6		
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		0.999				0.850		0.916				0.850
Flt Protected	0.950							0.982			0.953	
Satd. Flow (prot)	1706	1864	0	0	1902	1570	0	1728	0	0	1744	1633
Flt Permitted	0.950							0.982			0.953	
Satd. Flow (perm)	1706	1864	0	0	1902	1570	0	1728	0	0	1744	1633
Link Speed (k/h)		80			80			50			80	
Link Distance (m)		188.5			206.1			70.4			401.1	
Travel Time (s)		8.5			9.3			5.1			18.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	3%	0%	0%	1%	4%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	73	539	3	0	828	238	3	0	5	105	1	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	542	0	0	828	238	0	8	0	0	106	133
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		15.0			10.0			10.0			5.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	76.2%						ICU Level of Service D					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
5: Avonmore Road & County Road 2

2035 PM Future Total (Unsignalized)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	507	3	0	778	224	3	0	5	99	1	125
Future Volume (Veh/h)	69	507	3	0	778	224	3	0	5	99	1	125
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	73	539	3	0	828	238	3	0	5	105	1	133
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												2
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1066			542			1582	1752	540	1518	1516	828
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1066			542			1582	1752	540	1518	1516	828
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			100			94	100	99	0	99	64
cM capacity (veh/h)	635			1037			52	76	545	87	107	374
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	73	542	828	238	8	239						
Volume Left	73	0	0	0	3	105						
Volume Right	0	3	0	238	5	133						
cSH	635	1700	1037	1700	120	163						
Volume to Capacity	0.11	0.32	0.00	0.14	0.07	1.47						
Queue Length 95th (m)	2.9	0.0	0.0	0.0	1.6	116.8						
Control Delay (s)	11.4	0.0	0.0	0.0	37.3	292.9						
Lane LOS	B				E	F						
Approach Delay (s)	1.4		0.0		37.3	292.9						
Approach LOS					E	F						
Intersection Summary												
Average Delay			36.9									
Intersection Capacity Utilization			76.2%		ICU Level of Service				D			
Analysis Period (min)			15									

Intersection: 5: Avonmore Road & County Road 2

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	LT	R	LTR	LT	R
Maximum Queue (m)	23.6	0.7	1.9	12.0	399.6	22.6
Average Queue (m)	10.0	0.0	0.1	2.8	348.9	13.2
95th Queue (m)	20.7	0.5	1.0	9.7	480.9	30.8
Link Distance (m)		189.1		51.8	387.5	
Upstream Blk Time (%)					69	
Queuing Penalty (veh)					0	
Storage Bay Dist (m)	80.0		60.0			15.0
Storage Blk Time (%)					94	18
Queuing Penalty (veh)					118	18

APPENDIX G

Signal Warrants

Input Data Sheet

[Analysis Sheet](#)

[Results Sheet](#)

[Proposed Collision](#)

GO TO Justification:

What are the intersecting roadways?

County Road 2 and County Road 15

What is the direction of the Main Road street?

East-West

When was the data collected?

2021 Existing Conditions

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road?

1

b.- Number of lanes on the Minor Road?

1

c.- How many approaches?

4

d.- What is the operating environment?

Rural

Population < 10,000

AND

Speed >= 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Eastbound Approach			Minor Northbound Approach			Main Westbound Approach			Minor Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	1	107	39	48	1	24	13	210	1	0	0	1	4
8:00	0	140	39	72	0	44	12	342	1	1	0	0	2
9:00	0	157	51	58	0	42	20	329	1	0	2	0	1
10:00	1	179	43	50	1	50	24	295	1	0	1	1	5
16:00	0	392	89	68	5	55	38	369	1	2	3	1	2
17:00	2	446	121	62	2	83	38	343	2	2	1	4	0
18:00	0	414	101	47	0	62	22	278	2	1	1	2	2
19:00	1	255	63	37	0	48	17	233	1	1	2	0	0
Total	5	2,090	546	442	9	408	184	2,399	10	7	10	9	16

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptible to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
1A	480	720	600	900	445	651	660	646	1,023	1,106	930	658		
	COMPLIANCE %				93	100	100	100	100	100	100	100	793	99
1B	120	170	120	170	74	117	102	103	134	154	113	88		
	COMPLIANCE %				62	98	85	86	100	100	94	73	698	87
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fulfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input type="checkbox"/>
													Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
2A	480	720	600	900	371	534	558	543	889	952	817	570		
	COMPLIANCE %				77	100	100	100	100	100	100	100	777	97
2B	50	75	50	75	53	75	61	56	77	66	51	40		
	COMPLIANCE %				100	100	100	100	100	100	100	80	780	98
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fulfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
													Yes <input type="checkbox"/>	No <input type="checkbox"/>

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimum Vehicular Volume	YES <input type="checkbox"/>	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Justification 2	Delay Cross Traffic	YES <input type="checkbox"/>	NO <input type="checkbox"/>	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	16:00	889	128	145	88 %	72 %
	17:00	952	147	129	100 %	
	18:00	817	109	167	65 %	
	19:00	570	85	258	33 %	

Results Sheet

Input Sheet

Analysis Sheet

Proposed Collision

Intersection: County Road 2 and County Road 15

Count Date: 2021 Existing Conditions

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	99	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	87	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	97	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	98	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	87	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B Justification 2	97	%	<input type="checkbox"/>	<input type="checkbox"/>
4. 4-Hr Volume		72	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

What are the intersecting roadways?

Moulinette Road and Hwy. 401 EB ramps

GO TO Justification:

What is the direction of the Main Road street?

North-South

When was the data collected?

2035 Future Total Traffic Volumes

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road?

1

b.- Number of lanes on the Minor Road?

1

c.- How many approaches?

3

d.- What is the operating environment?

Rural

Population < 10,000

AND

Speed >= 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	33	57	0	16	0	18	0	70	23	0	0	0	0
8:00	33	57	0	16	0	18	0	70	23	0	0	0	0
9:00	33	57	0	16	0	18	0	70	23	0	0	0	0
12:00	33	57	0	16	0	18	0	70	23	0	0	0	0
13:00	33	57	0	16	0	18	0	70	23	0	0	0	0
16:00	33	57	0	16	0	18	0	70	23	0	0	0	0
17:00	33	57	0	16	0	18	0	70	23	0	0	0	0
18:00	33	57	0	16	0	18	0	70	23	0	0	0	0
Total	264	456	0	128	0	144	0	560	184	0	0	0	0

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptible to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
1A	480	720	600	900	217	217	217	217	217	217	217	217		
	COMPLIANCE %				45	45	45	45	45	45	45	45	362	45
1B	180	255	180	255	34	34	34	34	34	34	34	34		
	COMPLIANCE %				19	19	19	19	19	19	19	19	151	19
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fulfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
2A	480	720	600	900	183	183	183	183	183	183	183	183		
	COMPLIANCE %				38	38	38	38	38	38	38	38	305	38
2B	50	75	50	75	16	16	16	16	16	16	16	16		
	COMPLIANCE %				32	32	32	32	32	32	32	32	256	32
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fulfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More			
Justification 1	Minimum Vehicular Volume	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	NOT JUSTIFIED		
Justification 2	Delay Cross Traffic	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>				

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	7:00	183	34	458	7 %	7 %
	8:00	183	34	458	7 %	
	9:00	183	34	458	7 %	
	12:00	183	34	458	7 %	

Results Sheet

Input Sheet

Analysis Sheet

Proposed Collision

Intersection: Moulinette Road and Hwy. 401 EB ramps

Count Date: 2035 Future Total Traffic Volumes

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	45	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	19	%		
2. Delay to Cross Traffic	A Main Road	38	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	32	%		
3. Combination	A Justificaton 1	19	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	32	%		
4. 4-Hr Volume		7	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met			

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

What are the intersecting roadways?

CR 15 and Hwy. 401 WB ramps / CR 29

GO TO Justification:

What is the direction of the Main Road street?

North-South

When was the data collected?

2035 Future Total Traffic Volumes

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road?

1

b.- Number of lanes on the Minor Road?

1

c.- How many approaches?

4

d.- What is the operating environment?

Rural

Population < 10,000

AND

Speed >= 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	19	44	9	4	1	45	13	30	6	33	21	12	0
8:00	19	44	9	4	1	45	13	30	6	33	21	12	0
9:00	19	44	9	4	1	45	13	30	6	33	21	12	0
12:00	19	44	9	4	1	45	13	30	6	33	21	12	0
13:00	19	44	9	4	1	45	13	30	6	33	21	12	0
16:00	19	44	9	4	1	45	13	30	6	33	21	12	0
17:00	19	44	9	4	1	45	13	30	6	33	21	12	0
18:00	19	44	9	4	1	45	13	30	6	33	21	12	0
Total	152	352	72	32	8	360	104	240	48	264	168	96	0

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptible to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
1A	480	720	600	900	237	237	237	237	237	237	237	237	395	49
COMPLIANCE %				49	49	49	49	49	49	49	49	49		
1B	120	170	120	170	116	116	116	116	116	116	116	116	773	97
COMPLIANCE %				97	97	97	97	97	97	97	97	97		
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fulfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
2A	480	720	600	900	121	121	121	121	121	121	121	121	202	25
COMPLIANCE %				25	25	25	25	25	25	25	25	25		
2B	50	75	50	75	58	58	58	58	58	58	58	58	800	100
COMPLIANCE %				100	100	100	100	100	100	100	100	100		
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fulfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More			
Justification 1	Minimum Vehicular Volume	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>		
Justification 2	Delay Cross Traffic	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	NOT JUSTIFIED			

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	7:00	121	66	497	13 %	13 %
	8:00	121	66	497	13 %	
	9:00	121	66	497	13 %	
	12:00	121	66	497	13 %	

Results Sheet

Input Sheet

Analysis Sheet

Proposed Collision

Intersection: CR 15 and Hwy. 401 WB ramps / CR 29

Count Date: 2035 Future Total Traffic Volumes

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	49	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	97	%		
2. Delay to Cross Traffic	A Main Road	25	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100	%		
3. Combination	A Justificaton 1	49	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	25	%		
4. 4-Hr Volume		13	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Moulinette Road and County Road 29

What is the direction of the Main Road street?

North-South

When was the data collected?

2035 Future Total Traffic Volumes

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road?

1

b.- Number of lanes on the Minor Road?

1

c.- How many approaches?

4

d.- What is the operating environment?

Rural

Population < 10,000

AND

Speed >= 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	2	19	39	0	0	4	3	18	0	40	2	4	0
8:00	2	19	39	0	0	4	3	18	0	40	2	4	0
9:00	2	19	39	0	0	4	3	18	0	40	2	4	0
12:00	2	19	39	0	0	4	3	18	0	40	2	4	0
13:00	2	19	39	0	0	4	3	18	0	40	2	4	0
16:00	2	19	39	0	0	4	3	18	0	40	2	4	0
17:00	2	19	39	0	0	4	3	18	0	40	2	4	0
18:00	2	19	39	0	0	4	3	18	0	40	2	4	0
Total	16	152	312	0	0	32	24	144	0	320	16	32	0

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptible to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
1A	480	720	600	900	131	131	131	131	131	131	131	131	218	27
COMPLIANCE %				27	27	27	27	27	27	27	27	27		
1B	120	170	120	170	50	50	50	50	50	50	50	50	333	42
COMPLIANCE %				42	42	42	42	42	42	42	42	42		
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
2A	480	720	600	900	81	81	81	81	81	81	81	81	135	17
COMPLIANCE %				17	17	17	17	17	17	17	17	17		
2B	50	75	50	75	42	42	42	42	42	42	42	42	672	84
COMPLIANCE %				84	84	84	84	84	84	84	84	84		
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More			
Justification 1	Minimum Vehicular Volume	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	NOT JUSTIFIED		
Justification 2	Delay Cross Traffic	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>				

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	7:00	81	46	523	9 %	9 %
	8:00	81	46	523	9 %	
	9:00	81	46	523	9 %	
	12:00	81	46	523	9 %	

Results Sheet

Input Sheet

Analysis Sheet

Proposed Collision

Intersection: Moulinette Road and County Road 29

Count Date: 2035 Future Total Traffic Volumes

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	27	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	42	%		
2. Delay to Cross Traffic	A Main Road	17	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	84	%		
3. Combination	A Justificaton 1	27	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	17	%		
4. 4-Hr Volume		9	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
-------------------------	---	---	--------------------------	-------------------------------------

6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met			

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

What are the intersecting roadways?

Avonmore Road and CR 29 / Prieur Road

GO TO Justification:

What is the direction of the Main Road street?

North-South

When was the data collected?

2035 Future Total Traffic Volumes

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road?

1

b.- Number of lanes on the Minor Road?

1

c.- How many approaches?

4

d.- What is the operating environment?

Rural

Population < 10,000

AND

Speed >= 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	13	56	0	34	1	14	0	71	19	1	0	0	0
8:00	13	56	0	34	1	14	0	71	19	1	0	0	0
9:00	13	56	0	34	1	14	0	71	19	1	0	0	0
12:00	13	56	0	34	1	14	0	71	19	1	0	0	0
13:00	13	56	0	34	1	14	0	71	19	1	0	0	0
16:00	13	56	0	34	1	14	0	71	19	1	0	0	0
17:00	13	56	0	34	1	14	0	71	19	1	0	0	0
18:00	13	56	0	34	1	14	0	71	19	1	0	0	0
Total	104	448	0	272	8	112	0	568	152	8	0	0	0

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptible to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
1A	480	720	600	900	209	209	209	209	209	209	209	209		
	COMPLIANCE %				44	44	44	44	44	44	44	44	348	44
1B	120	170	120	170	50	50	50	50	50	50	50	50		
	COMPLIANCE %				42	42	42	42	42	42	42	42	333	42
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
2A	480	720	600	900	159	159	159	159	159	159	159	159		
	COMPLIANCE %				33	33	33	33	33	33	33	33	265	33
2B	50	75	50	75	36	36	36	36	36	36	36	36		
	COMPLIANCE %				72	72	72	72	72	72	72	72	576	72
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More			
Justification 1	Minimum Vehicular Volume	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	NOT JUSTIFIED		
Justification 2	Delay Cross Traffic	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>				

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	7:00	159	49	473	10 %	10 %
	8:00	159	49	473	10 %	
	9:00	159	49	473	10 %	
	12:00	159	49	473	10 %	

Results Sheet

Input Sheet

Analysis Sheet

Proposed Collision

Intersection: Avonmore Road and CR 29 / Prieur Road

Count Date: 2035 Future Total Traffic Volumes

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	44	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	42	%		
2. Delay to Cross Traffic	A Main Road	33	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	72	%		
3. Combination	A Justificaton 1	42	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	33	%		
4. 4-Hr Volume		10	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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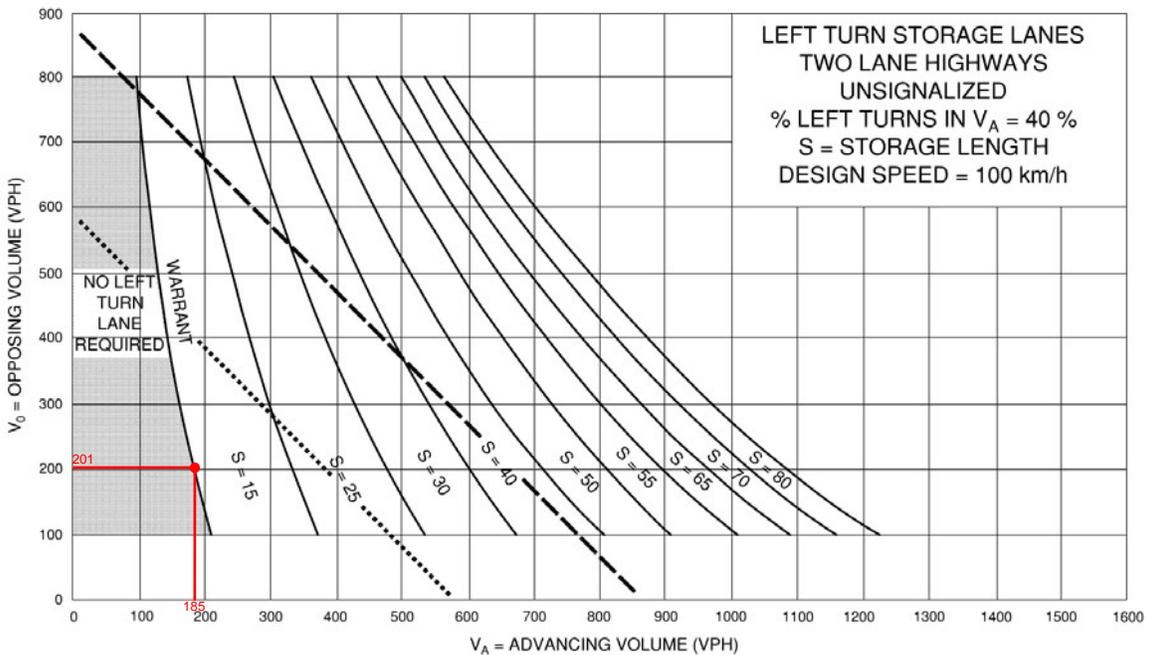
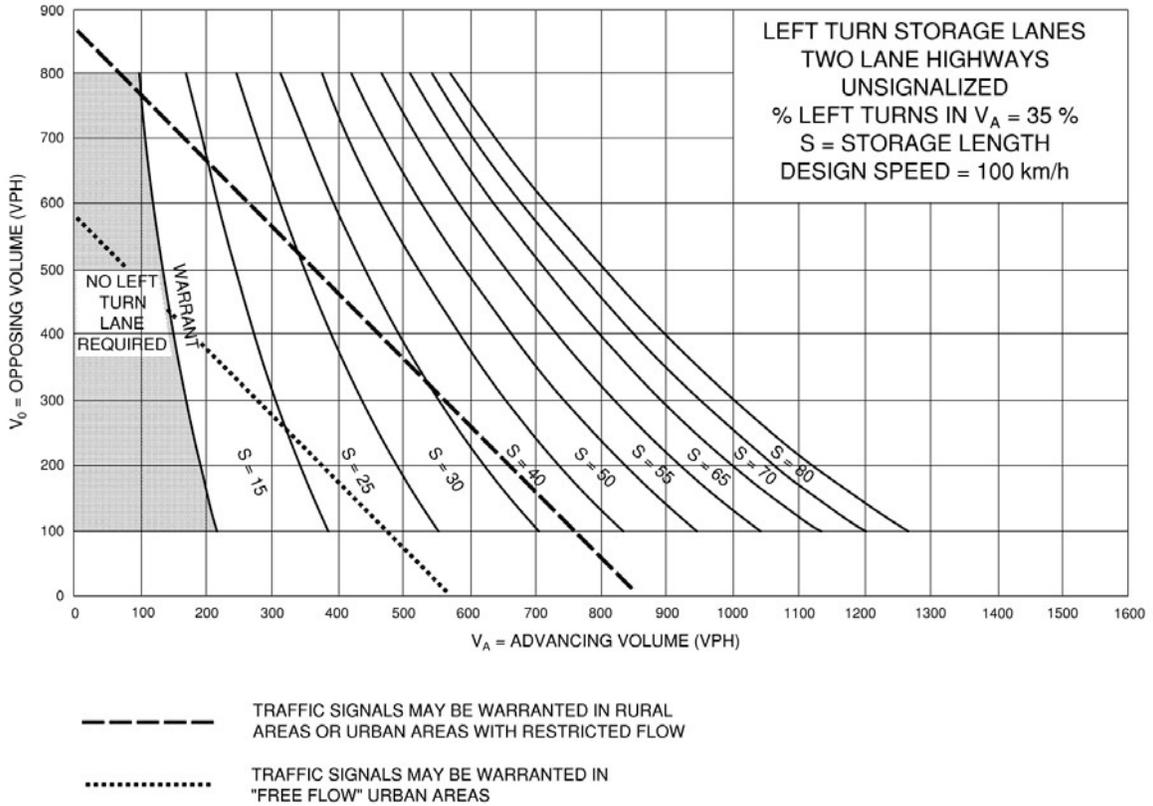
6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met			

APPENDIX H

Left Turn Warrants

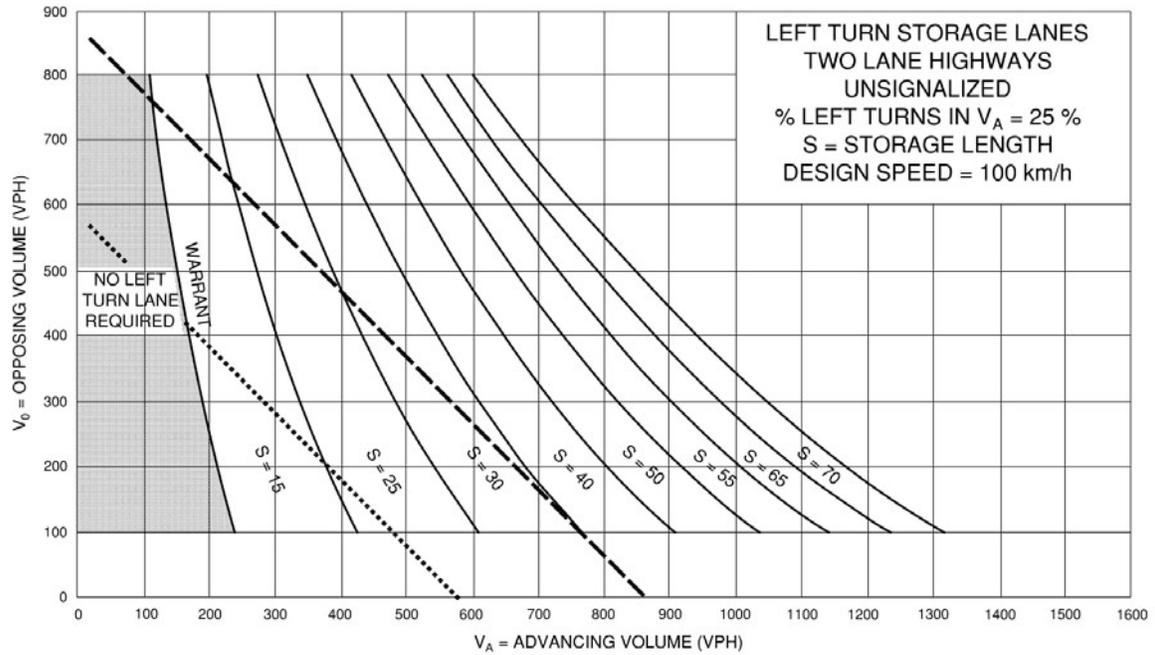
Intersection of Moulinette Road / CR35 and Highway 401 EB ramps (NBL)
 2035 Future Total - A.M. Peak Hour

Exhibit 9A-26



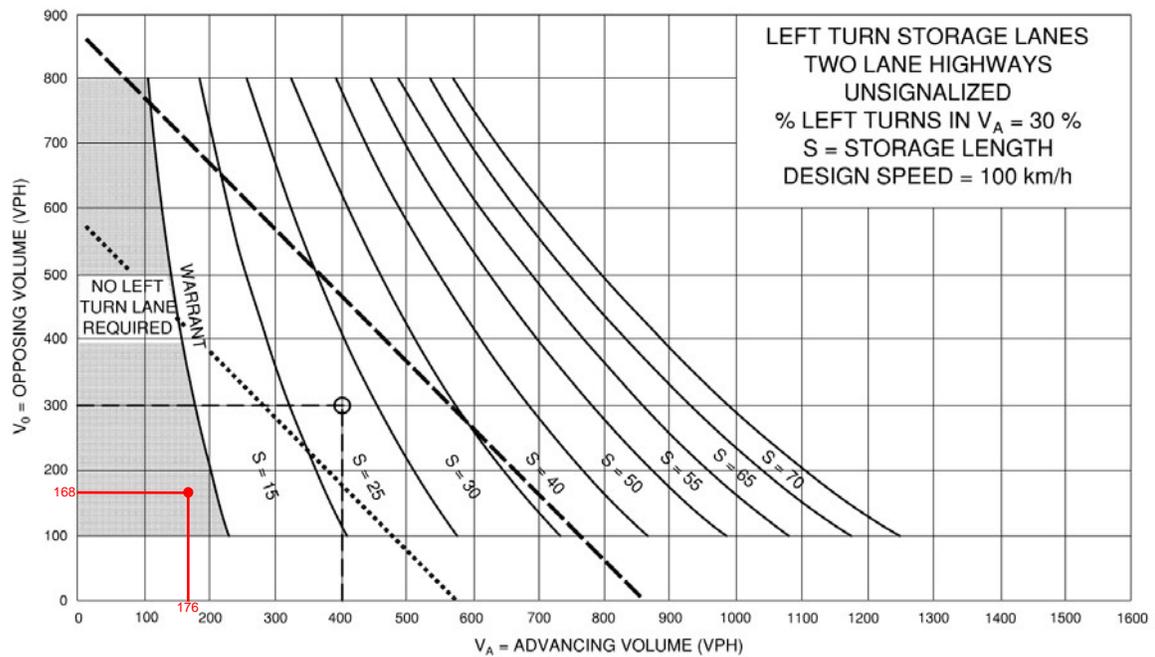
Intersection of Moulinette Road / CR35 and Highway 401 EB ramps (NBL)
 2035 Future Total - P.M. Peak Hour

Exhibit 9A-25



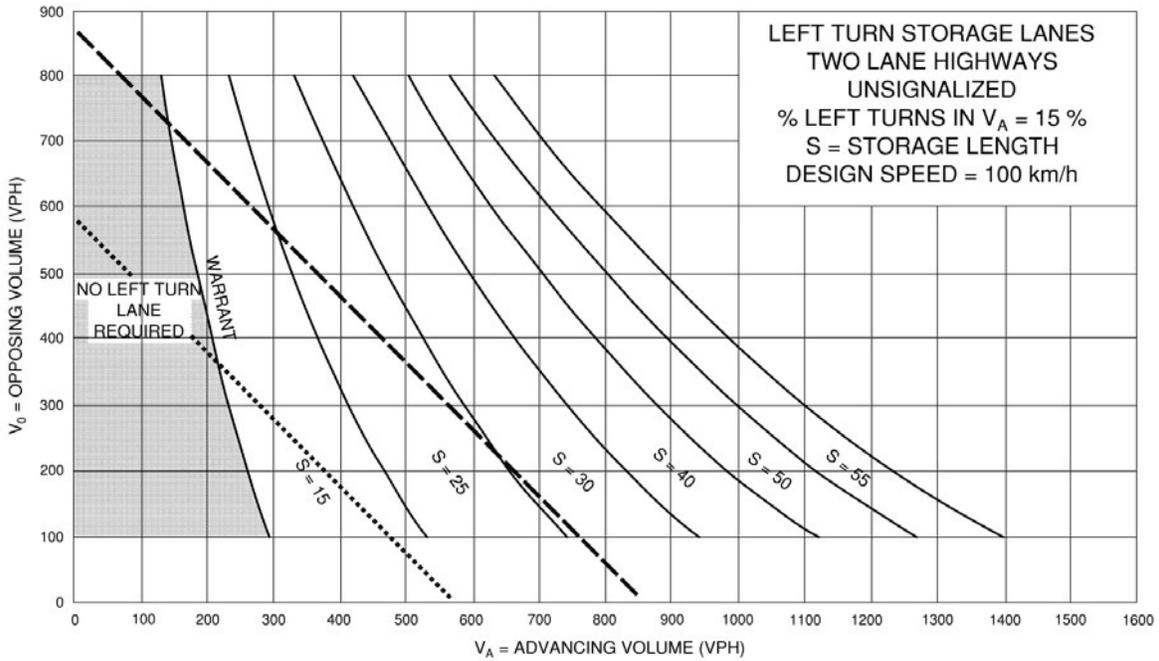
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..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

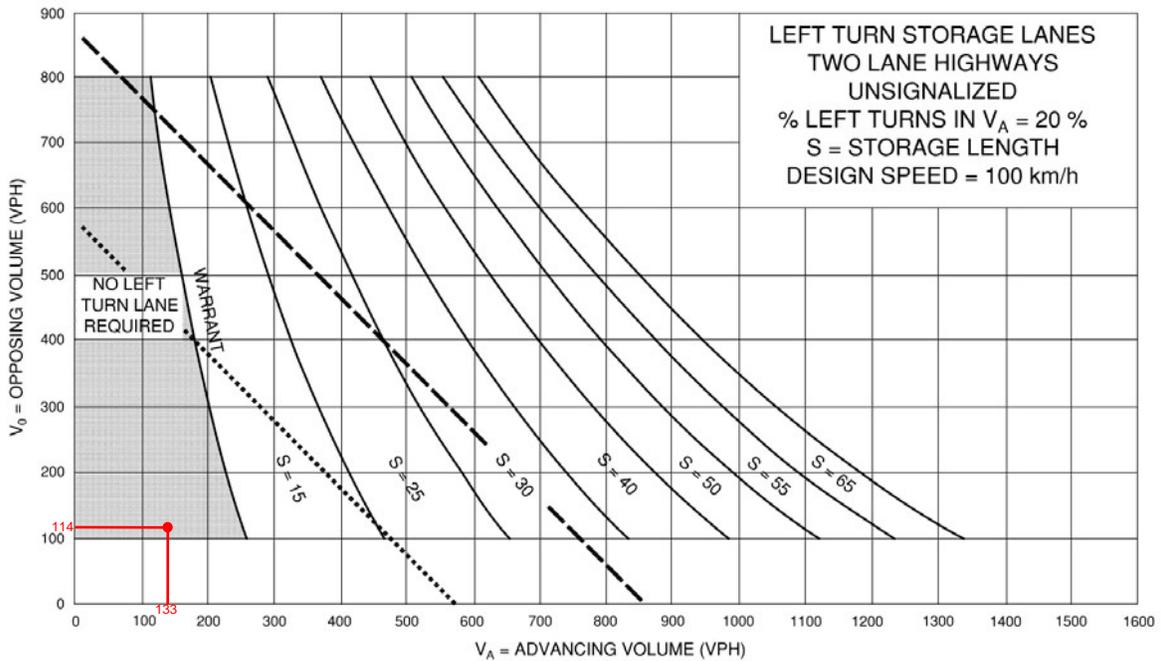


Intersection of Moulinette Road / CR35 and Highway 401 WB ramps (NBL)
 2035 Future Total - A.M. Peak Hour

Exhibit 9A-24

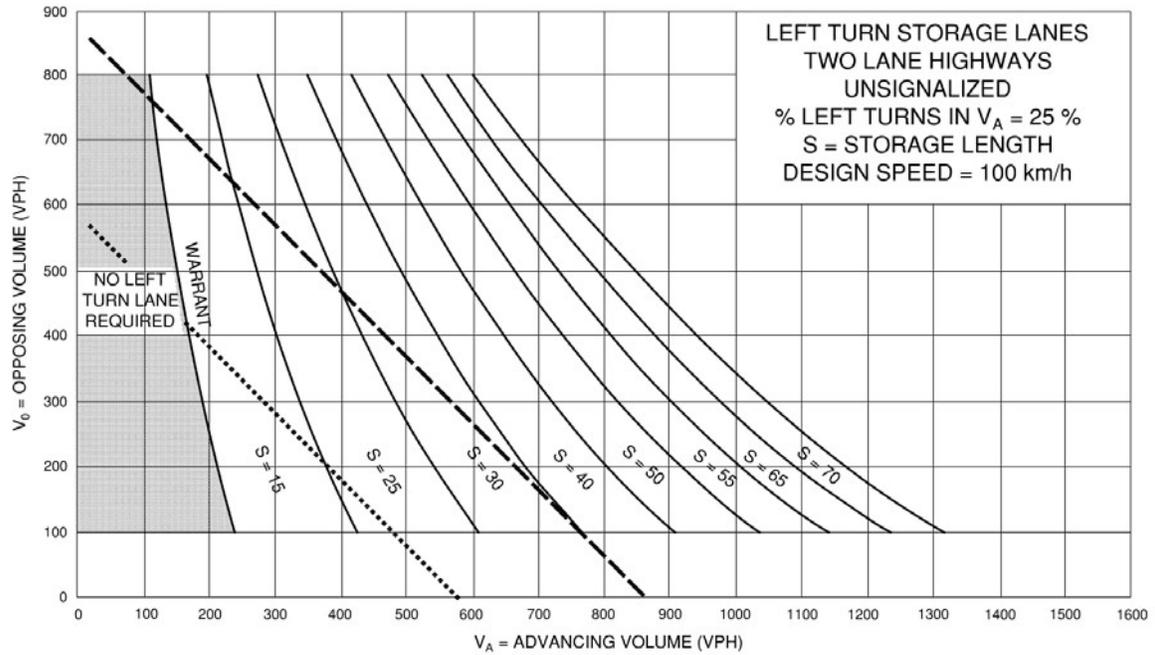


- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
- TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



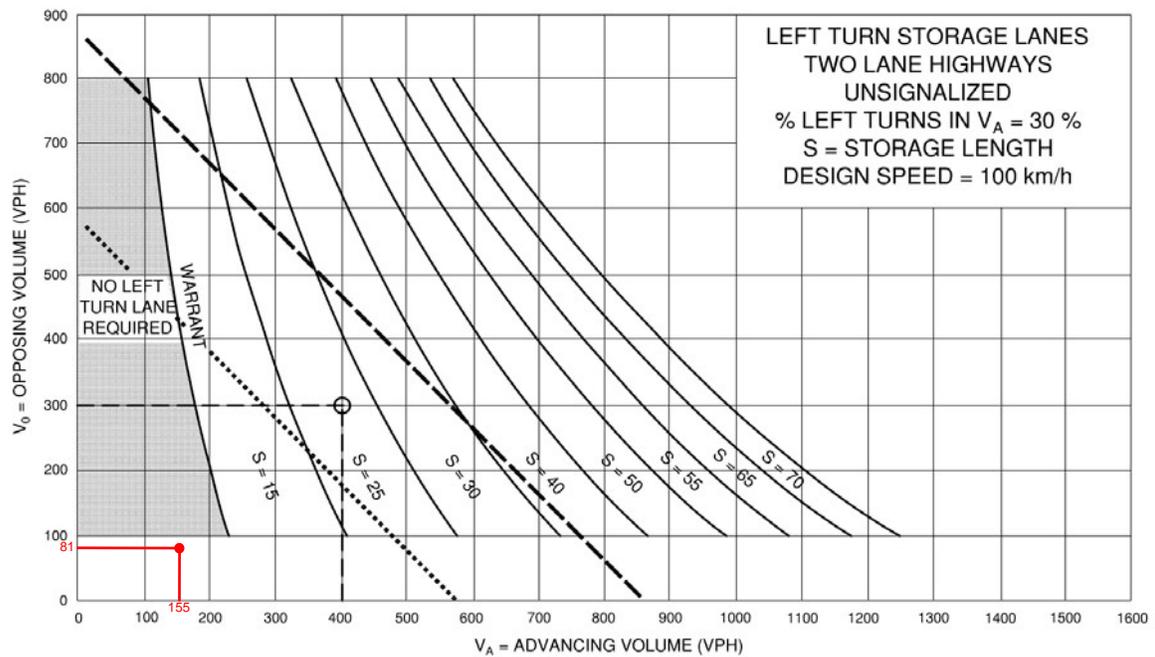
Intersection of Moulinette Road / CR35 and Highway 401 WB ramps (NBL)
 2035 Future Total - P.M. Peak Hour

Exhibit 9A-25



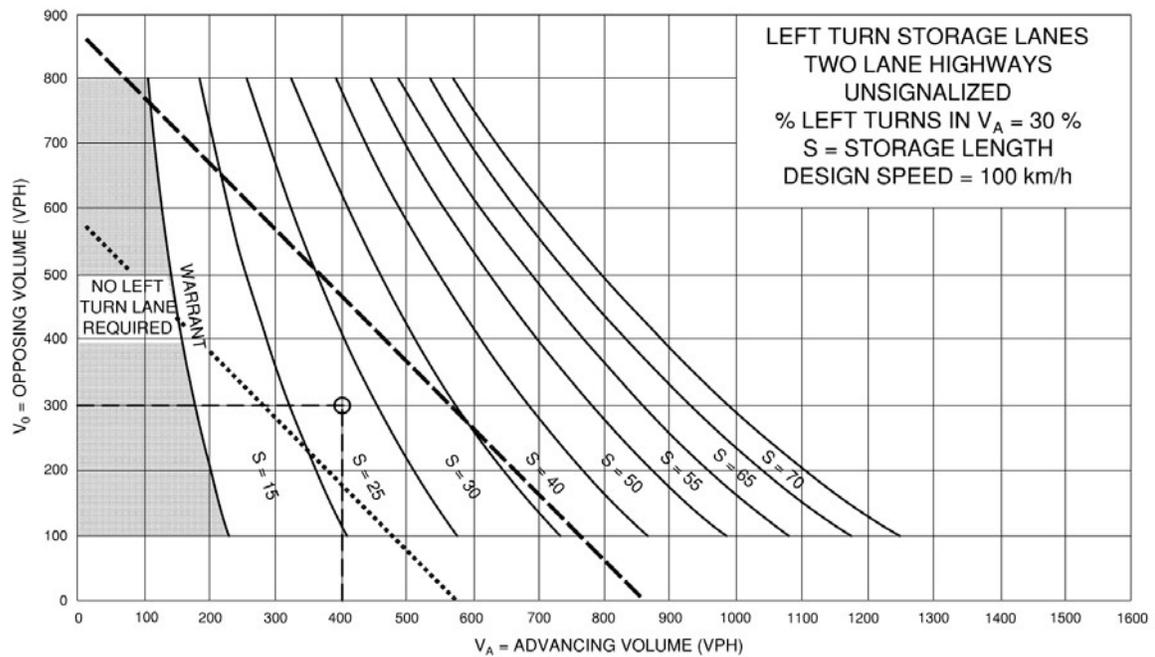
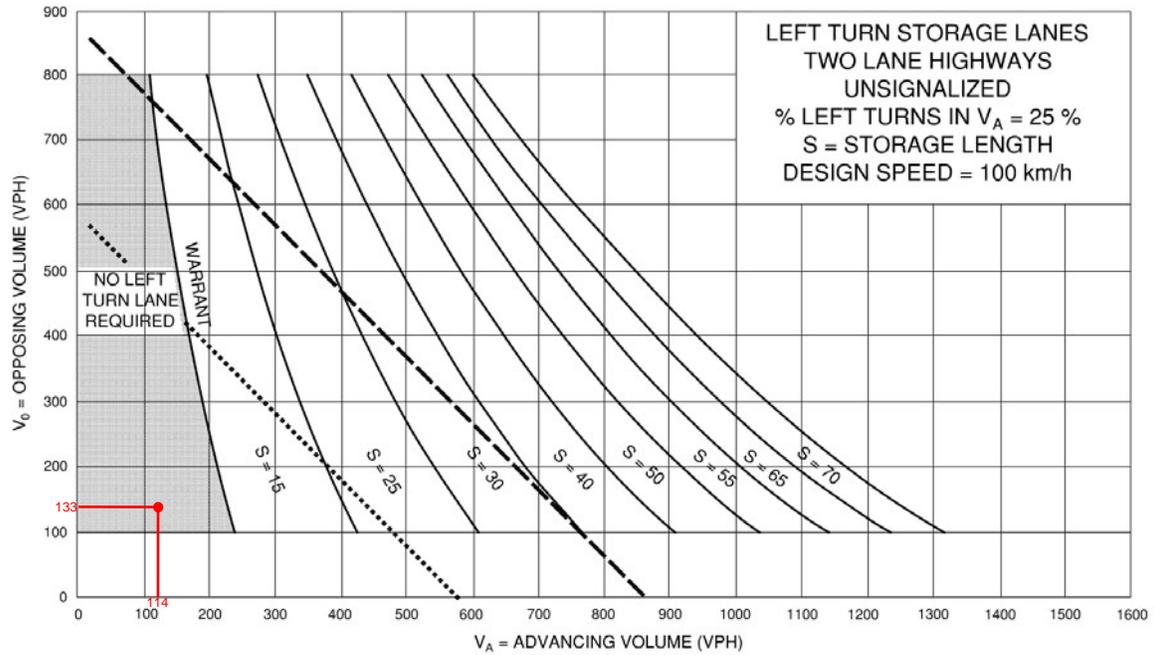
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..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



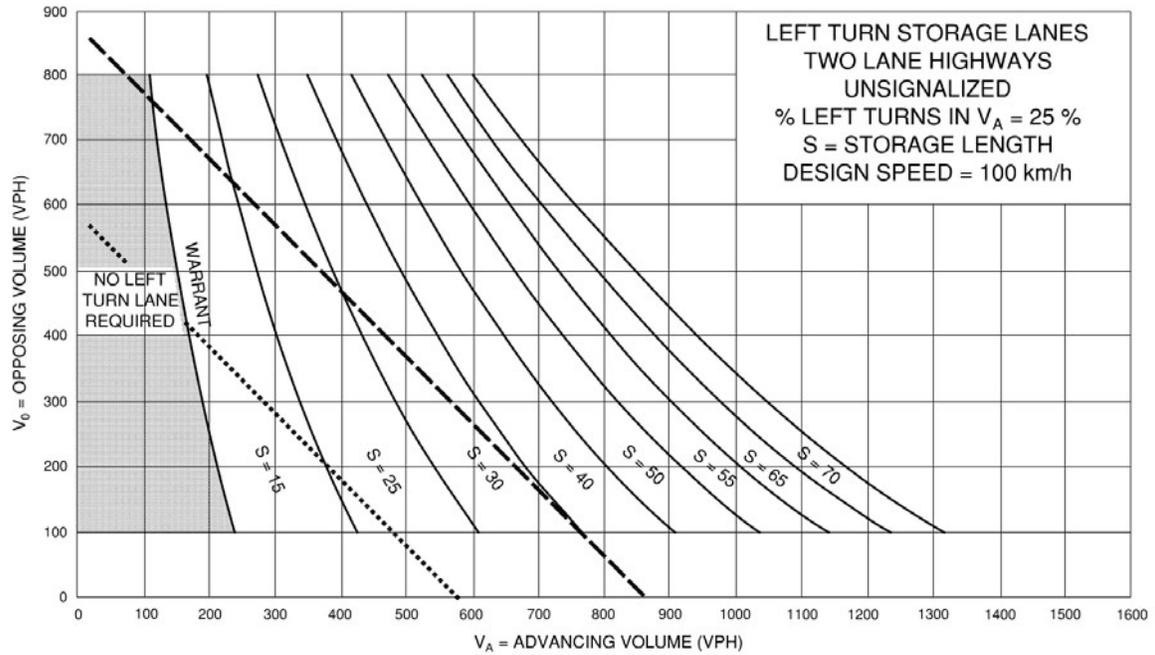
Intersection of Moulinette Road / RR35 and Highway 401 WB ramps (SBL)
 2035 Future Total - A.M. Peak Hour

Exhibit 9A-25

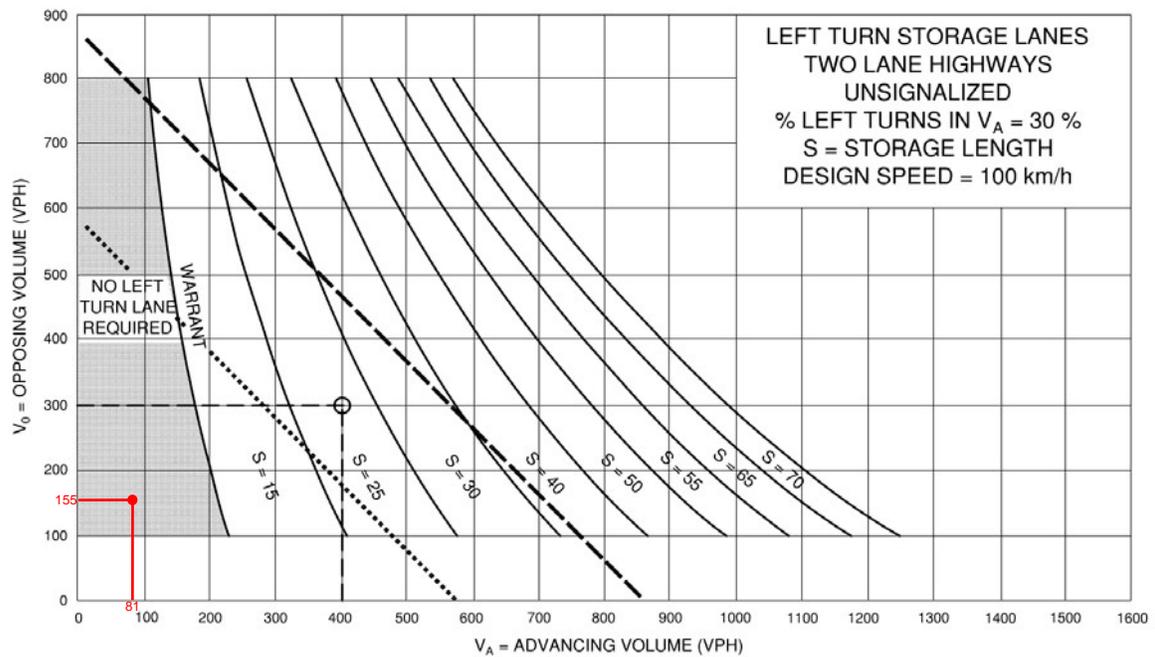


Intersection of Moulinette Road / CR35 and Highway 401 WB ramps (SBL)
 2035 Future Total - P.M. Peak Hour

Exhibit 9A-25

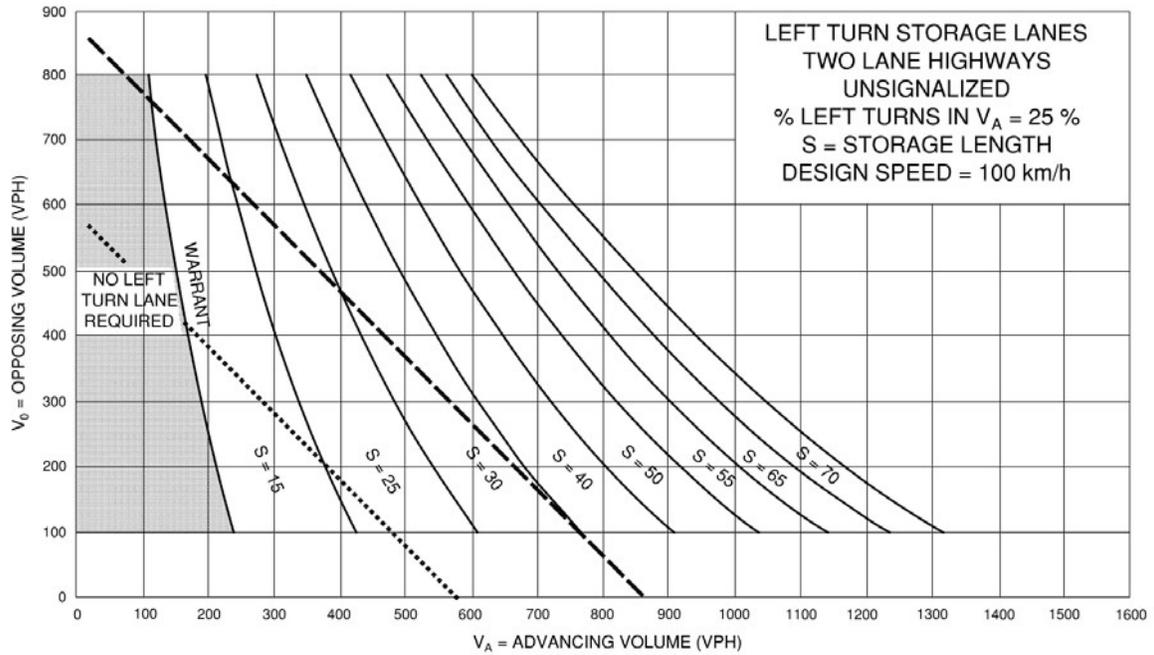


- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
- TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



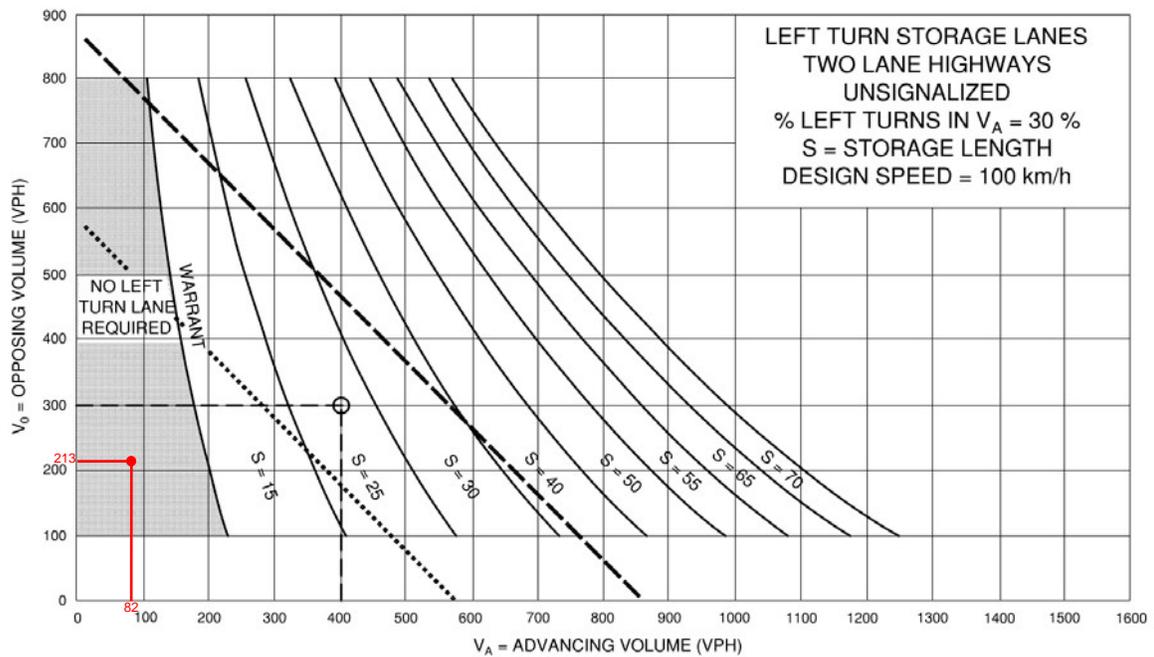
Intersection of Avonmore Road / CR15 and CR29 / Prieur Road (NBL)
 2035 Future Total - A.M. Peak Hour

Exhibit 9A-25



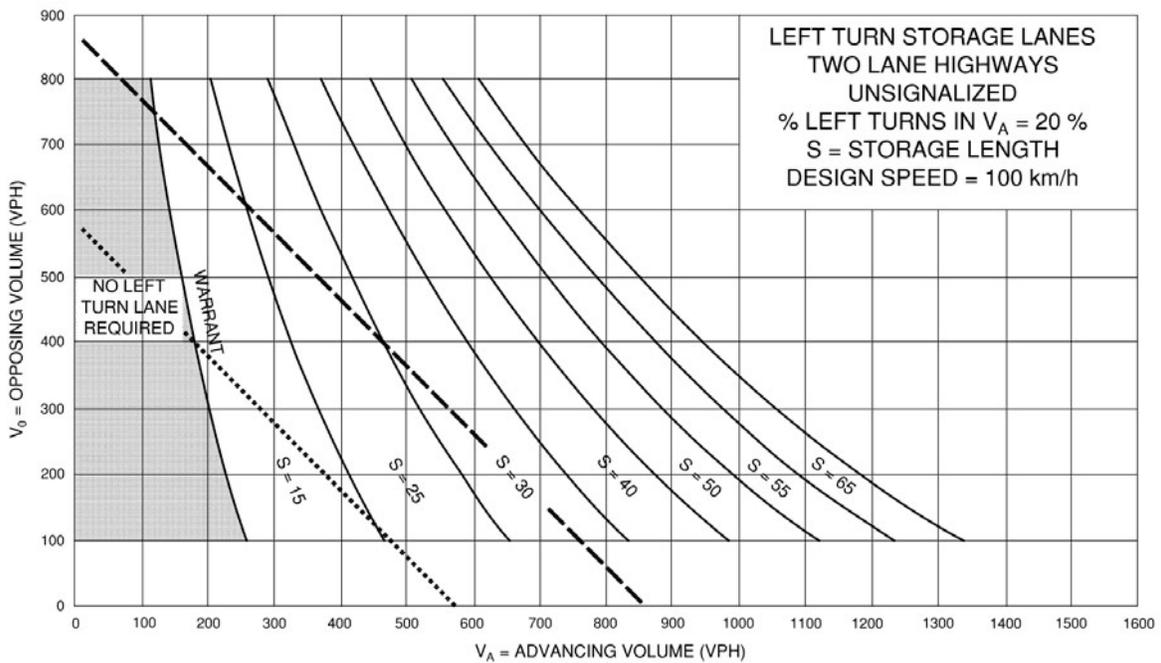
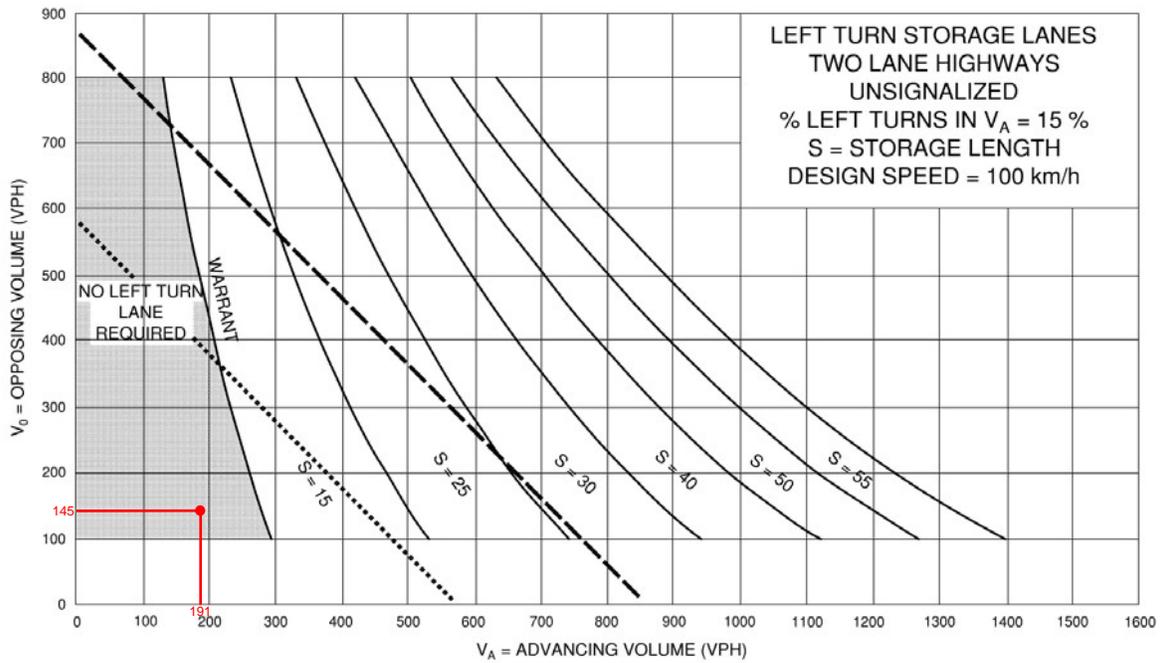
--- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



Intersection of Avonmore Road / CR15 and CR29 / Prieur Road (NBL)
2035 Future Total - P.M. Peak Hour

Exhibit 9A-24



FIGURES



SITE
LOCATION

Legend
 = SUBJECT LANDS

Project
LONG SAULT PHASE A INDUSTRIAL PARK

Drawing
SITE LOCATION



211 YONGE STREET
SUITE 301
TORONTO, ON, M5B 1M4
416-477-3392 T
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Drawn By	R.L.	Design By	A.H.	Project	1909-5629	
Scale	N.T.S.	Date	10/22/2021	Check By	A.H.	
					Drawing	FIG 1A

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

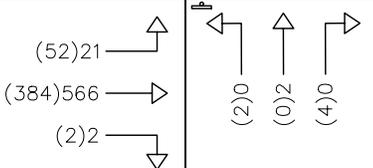
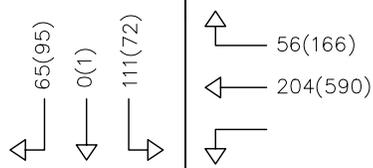
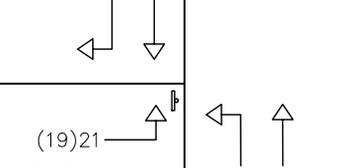
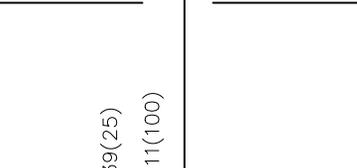
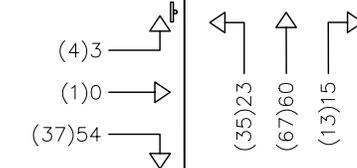
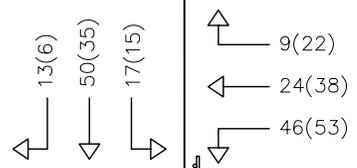
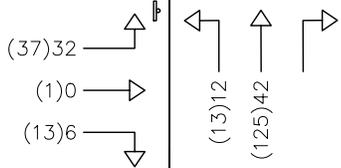
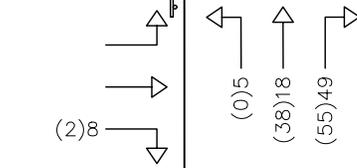
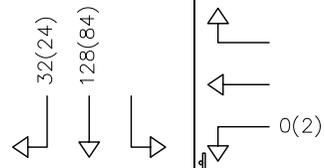
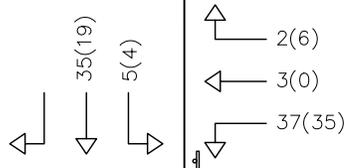
COUNTY
ROAD 29

HIGHWAY 401

HIGHWAY 2

MOULINETTE
ROAD

AVONMORE
BEACH



NOTE: THIS FIGURE IS FOR SCHEMATIC
PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK
Drawing	2021 ADJUSTED EXISTING TRAFFIC VOLUMES

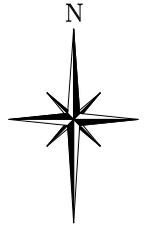
CROZIER
CONSULTING ENGINEERS

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Drawn By	R.L.	Design By	A.H.	Project	1909-5629
Scale	N.T.S.	Date	10/22/2021	Check By	A.H.
					Drawing FIG 2

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

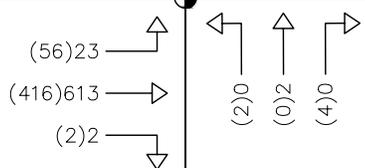
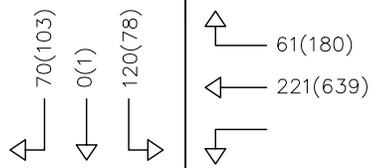
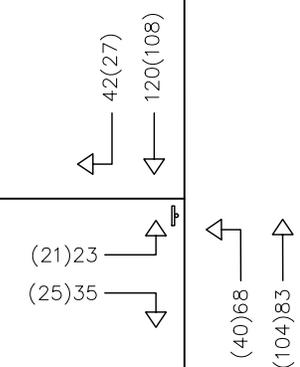
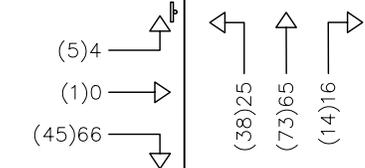
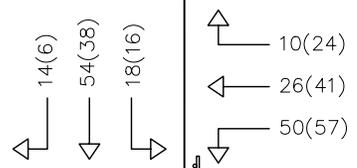
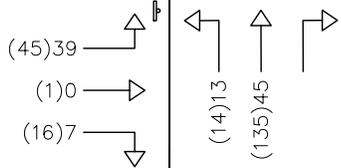
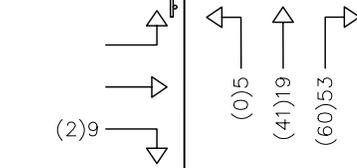
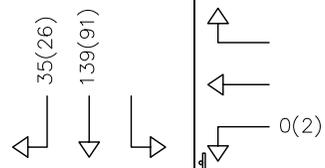
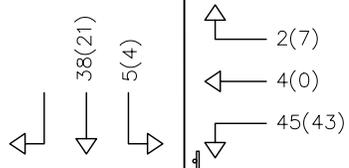
COUNTY
ROAD 29

HIGHWAY 401

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH



NOTE: THIS FIGURE IS FOR SCHEMATIC
PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK	
Drawing	2025 FUTURE BACKGROUND TRAFFIC VOLUMES	

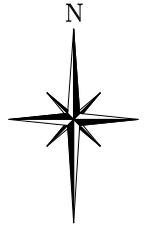


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Drawn By	R.L.	Design By	A.H.	Project	1909-5629	
Scale	N.T.S.	Date	10/22/2021	Check By	A.H.	
					Drawing	FIG 3

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

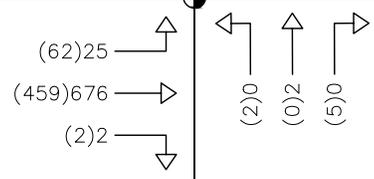
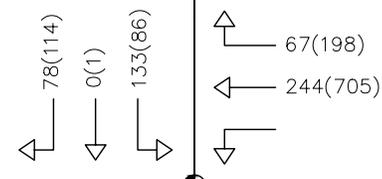
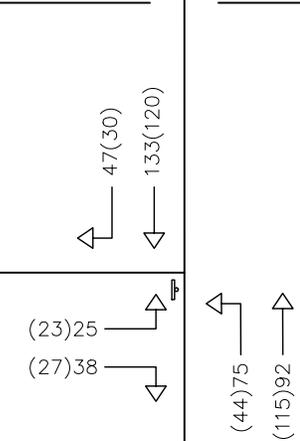
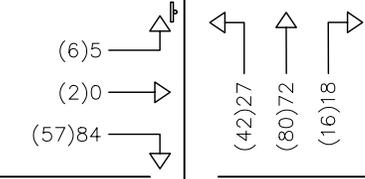
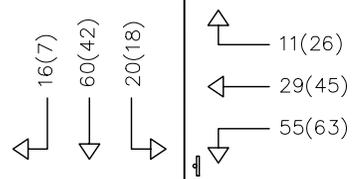
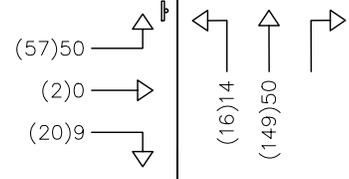
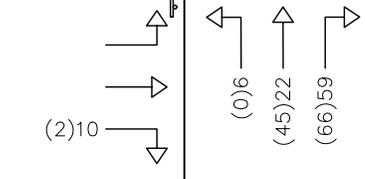
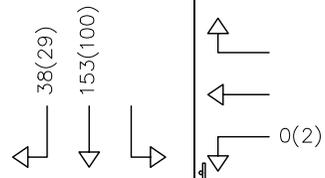
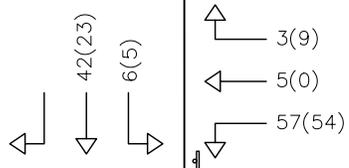
COUNTY
ROAD 29

HIGHWAY 401

HIGHWAY 2

MOULINETTE
ROAD

AVONMORE
BEACH



NOTE: THIS FIGURE IS FOR SCHEMATIC
PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK	
Drawing	2030 FUTURE BACKGROUND TRAFFIC VOLUMES	

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Scale	N.T.S.	Date	10/22/2021	Check By	A.H.
					Drawing FIG 4

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

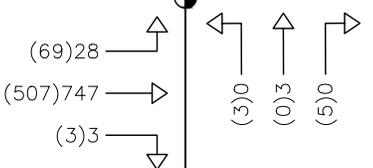
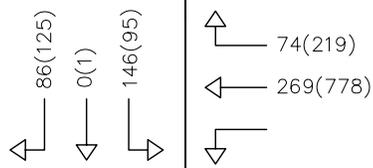
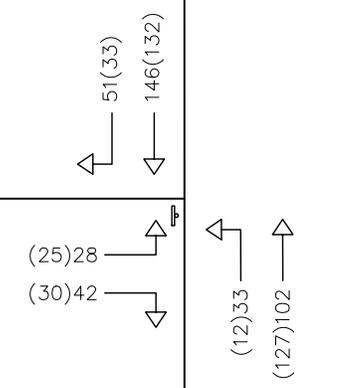
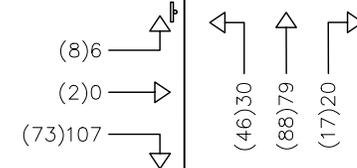
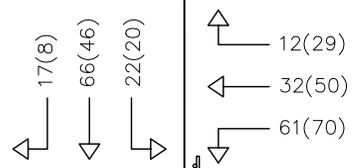
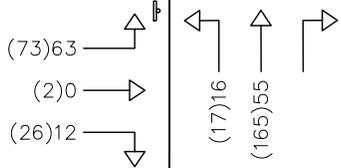
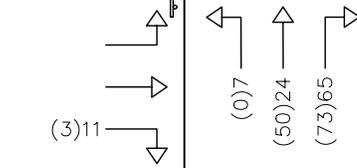
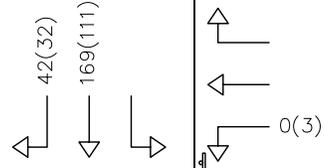
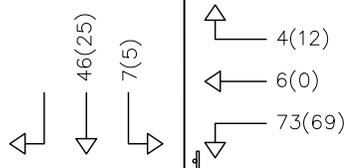
COUNTY
ROAD 29

HIGHWAY 401

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH



NOTE: THIS FIGURE IS FOR SCHEMATIC
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	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK	
Drawing	2035 FUTURE BACKGROUND TRAFFIC VOLUMES	

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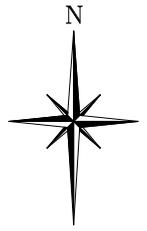
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Drawing FIG 5

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

COUNTY
ROAD 29

HIGHWAY 401

SITE
ACCESS

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH

NOTE: THIS FIGURE IS FOR SCHEMATIC
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Legend	
	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK	
Drawing	SITE TRIP DISTRIBUTION: VEHICLES	

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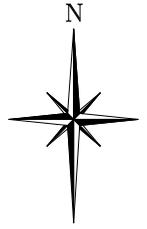
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Drawing FIG 6

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

COUNTY
ROAD 29

HIGHWAY 401

SITE
ACCESS

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH

NOTE: THIS FIGURE IS FOR SCHEMATIC
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	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK
Drawing	SITE TRIP DISTRIBUTION: TRUCKS



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Scale	N.T.S.	Date	10/22/2021	Check By	A.H.	
					Drawing	FIG 7

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

COUNTY
ROAD 29

HIGHWAY 401

SITE
ACCESS

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH

NOTE: THIS FIGURE IS FOR SCHEMATIC
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	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK	
Drawing	SITE TRIP ASSIGNMENT: VEHICLES	

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Scale	N.T.S.	Date	10/22/2021	Check By	A.H.

FIG 8

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

COUNTY
ROAD 29

HIGHWAY 401

SITE
ACCESS

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH

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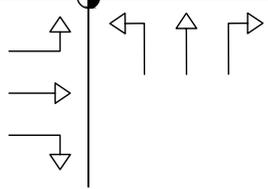
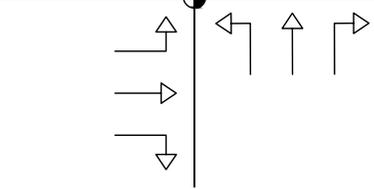
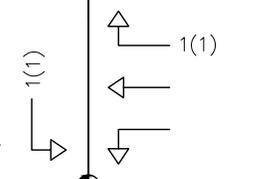
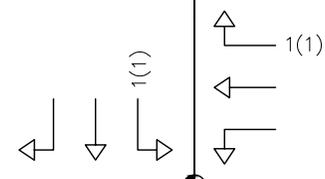
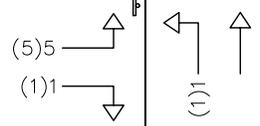
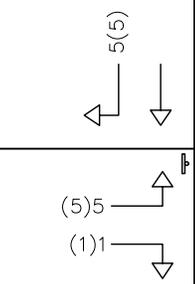
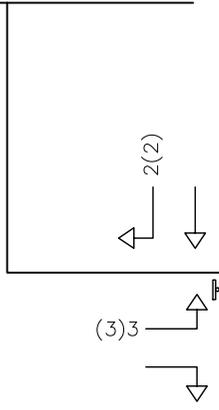
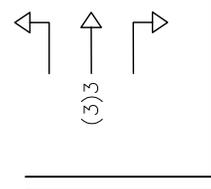
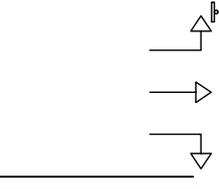
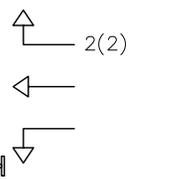
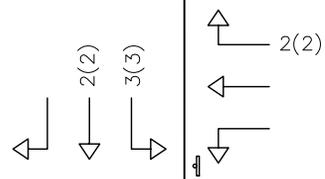
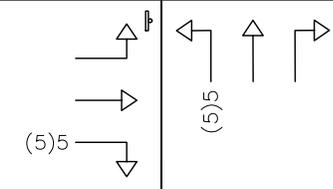
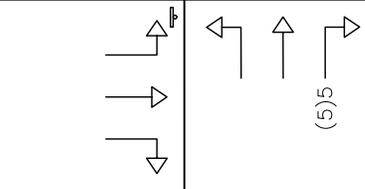
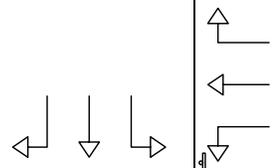
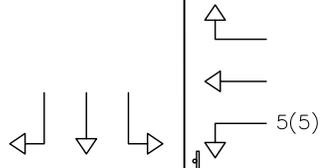
	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK	
Drawing	SITE TRIP ASSIGNMENT: TRUCKS	

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Scale	N.T.S.	Date	10/22/2021	Check By	A.H.
					Drawing FIG 9



CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

COUNTY
ROAD 29

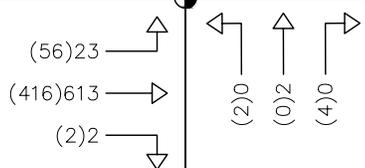
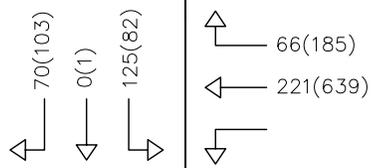
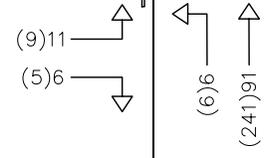
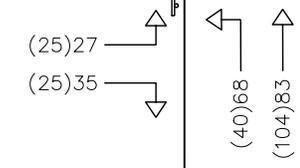
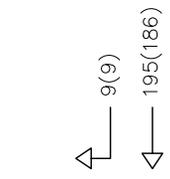
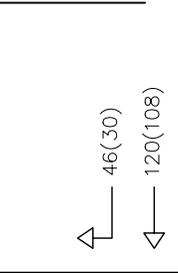
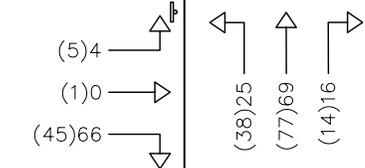
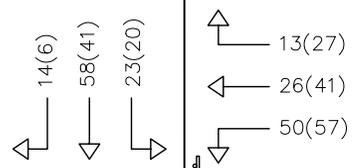
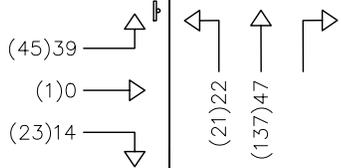
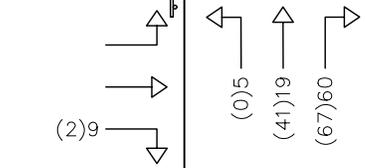
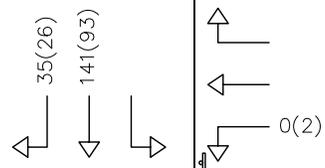
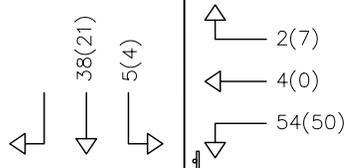
HIGHWAY 401

SITE
ACCESS

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH



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	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK	
Drawing	2025 FUTURE TOTAL TRAFFIC VOLUMES	



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					Drawing	FIG 10

CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

COUNTY
ROAD 29

HIGHWAY 401

SITE
ACCESS

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH

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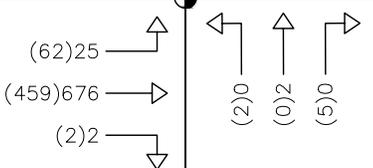
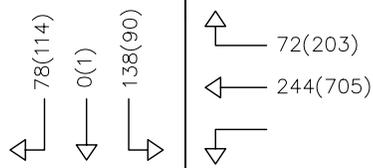
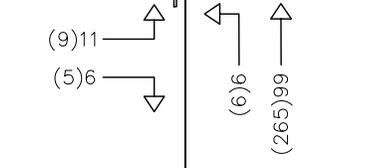
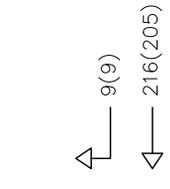
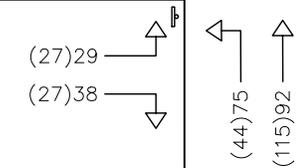
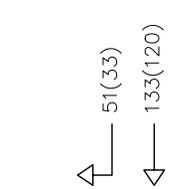
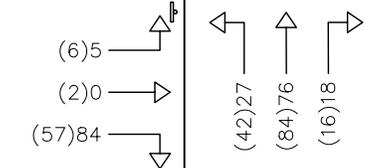
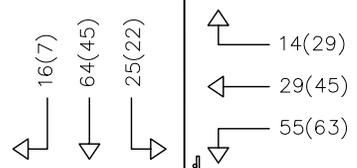
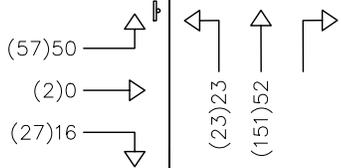
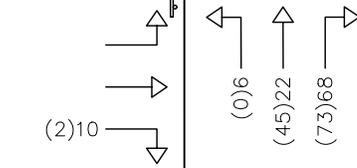
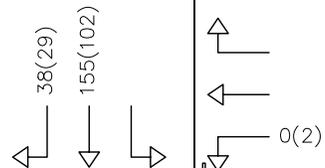
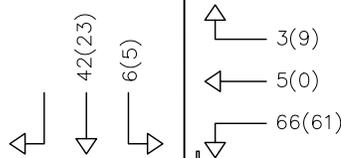
	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK	
Drawing	2030 FUTURE TOTAL TRAFFIC VOLUMES	



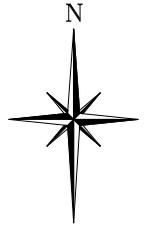
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					Drawing	FIG 11



CORNWALL TOWNSHIP
42 ROAD

AVONMORE ROAD
CR 15



PRIVATE
ACCESS

CR 29

PRIEUR
ROAD

COUNTY
ROAD 29

HIGHWAY 401

SITE
ACCESS

MOULINETTE
ROAD

HIGHWAY 2

AVONMORE
BEACH

NOTE: THIS FIGURE IS FOR SCHEMATIC
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	SIGNAL CONTROL
	STOP CONTROL
xx(yy)	WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project	LONG SAULT PHASE A INDUSTRIAL PARK
Drawing	2035 FUTURE TOTAL TRAFFIC VOLUMES



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					Drawing	FIG 12

