1520, 1540, and 1580 Reach Street, Port Perry, Township of Scugog, ON

Traffic Impact Study

Paradigm Transportation Solutions Limited

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Project Summary

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1520, 1540, and 1580 Reach Street Port Perry, Township of Scugog, ON Traffic Impact Study



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Executive Summary

Content

Wannop Properties retained Paradigm Transportation Solutions Limited (Paradigm) to prepare this Traffic Impact Study (TIS) for the proposed development of 1520, 1540, and 1580 Reach Street in the Township of Scugog in support of sought Zoning By-law Amendment (ZBA), and Draft Plan of Subdivision (DPOS) applications.

The purpose of this report is to identify and assess potential traffic impacts, if any, resulting from the development.

Development Concept

The subject lands comprise the municipal addresses of 1520, 1540, and 1580 Reach Street in the Township of Scugog. The lands are located on the south side of Reach Street, generally between North Port Road and Sherrington Drive. A new residential community and employment area are proposed.

The property owner is proposing to develop approximately one third of the overall lands as employment, and the remainder of the lands as residential.

The employment lands are anticipated to include “Prestige Industrial” and “General Industrial” land uses, comprising approximately 6.00 hectares and 8.98 hectares, respectively. For assessment purposes. it is assumed that 50% of the employment lands will be developable, resulting in approximately 3.00 hectares (322,917 ft²) of Prestige Industrial development, and 4.49 hectares (483,300 ft²) of General Industrial development.

The residential lands are proposed to include a medium density, medium/high density mixed-use development comprising up to 285 residential units, and 5,000-15,000 ft^2 retail area, a long-term care facility with approximately 250 units (with one bed assumed to represent one unit), approximately 382 detached single-family dwellings, and up to 350 condominium townhouse units.

Vehicle access is proposed via three access connections with Reach Street (RR8).

Findings

Based upon the analyses conducted the following is determined:

- **Under 2028 background traffic conditions (without the development)** the study area intersections are forecast to operate at acceptable levels of service and with all movements within capacity.
- **Under 2033 background traffic conditions (without the development)**, the study area intersections are forecast to continue operating at acceptable levels of service and with all movements within capacity under the AM peak hour.

  Under the PM peak hour, while all movements are forecast to be within capacity, it is noted that several movements have been identified as approaching capacity.

  - At the intersection of Regional Highway 7/12 and Reach Street, the southbound left turn movement is forecast to operate at LOS E, but with an acceptable v/c ratio of 0.85.

    The westbound shared left/through/right movement is forecast to operate with a v/c ratio of 0.96.

  - At the intersection of Old Simcoe Road and Reach Street, the eastbound shared through/right movement is forecast to operate at LOS E, with a v/c ratio of 0.95.

    The westbound left turn movement is forecast to operate at LOS E, but with an acceptable v/c ratio of 0.73.

- **The following mitigation measures were determined to address the critical movements identified under 2033 background conditions (without the development):**

  Regional Highway 7/12 and Reach Street:

  - Provision of a warranted westbound left-turn lane.
  - An eastbound left-turn lane is not technically warranted based on projected traffic volumes. However, for logical design consistency and intersection symmetry, the provision of an opposing eastbound left-turn lane is recommended.

  Old Simcoe Road and Reach Street:

  - The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.
  - No geometric modifications are required under background conditions, as acceptable operations can be achieved through signal timing optimization.

- **Under 2028 and 2033 total traffic conditions (with the development)** several critical movements are identified at the study area intersections.
- **The following mitigation measures were determined to address the critical movements identified under 2028 and 2033 total traffic conditions (with the development), above and beyond those previously identified under background conditions:**

  Regional Highway 7/12 and Reach Street:

  - Provision of a warranted westbound left-turn lane under 2028 total traffic conditions.
  - An eastbound left-turn lane is not technically warranted based on projected traffic volumes. However, for logical design consistency and intersection symmetry, the provision of an opposing eastbound left-turn lane is recommended.

  Old Simcoe Road and Reach Street:

  - The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.
  - No geometric modifications are required under total conditions, as acceptable operations can be achieved through signal timing optimization.

  Simcoe Street and Reach Street/Coulter Street:

  - The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.
  - No geometric modifications are required under total conditions, as acceptable operations can be achieved through signal timing optimization.

  Driveway 1 (West Access) and Reach Street:

  - The identified critical movements can be mitigated by providing two outbound lanes in the northbound direction.

  Driveway 2 (Central Access) and Reach Street:

  - Mitigated through anticipated traffic redistribution with the signalization of Driveway 3/Driveway 4 (East Access).

  Driveway 3/Driveway 4 (East Access) and Reach Street:

  - The identified critical movements can be mitigated by installing a traffic signal.

- The site access locations on Reach Street were determined to be appropriate satisfying Decision Sight Distance requirements. The minor exception would be for Driveway 2 (Central Access) in the westbound direction, where the Decision Sight Distance is not achieved due to the vertical crest. However, it is noted that Stopping Sight Distance requirement is satisfied.

Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** All study intersections are operating at acceptable levels of service and well within capacity during both AM and PM peak hours.
- **Development Trip Generation:** Development of the site is forecast to generate 779 trips in the AM peak hour and 942 trips in the PM peak hour.
- **Background Traffic Conditions:** Under 2028 background conditions, the study intersections are forecast to operate at acceptable levels of service and well within capacity. No critical movements are forecast.

  Under 2033 background traffic conditions, critical movements were identified at two study intersections. It is noted regardless of whether the proposed development proceeds or not, mitigation measures would need to be considered to address background growth.
- **Total Traffic Conditions:** Under 2028 and 2033 total traffic conditions, it was determined mitigation measures would be required to accommodate the site-generated traffic.
- **Transportation Demand Management Plan:** Applicable initiatives have been identified. These strategies can be implemented to encourage active transportation and public transit use. The proposed TDM strategies aim to reduce single-occupant vehicle use and promote sustainable transportation options to and from the site.
- **Site Access Locations:** The locations of the proposed driveway connections with Reach Street have been determined to be appropriate providing adequate sight distance allowing drivers at minimum to stop safely or to undertake a speed/path/direction change on Reach Street.

Recommendations

The following recommendation is provided based on the study results:

- Township and Regional staff consider the contents of this report.
- From a transportation perspective, the planning applications sought should be approved.
- The applicable roadway jurisdiction should monitor the signalized intersections within the study area in regard to background growth and changes in traffic patterns to determine when mitigation measures would be required, regardless of whether the development proceeds or not.

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1 Introduction

1.1 Overview

Wannop Properties retained Paradigm Transportation Solutions Limited (Paradigm) to prepare this Traffic Impact Study (TIS) for the proposed development of 1520, 1540, and 1580 Reach Street in the Township of Scugog in support of sought Zoning By-law Amendment (ZBA), and Draft Plan of Subdivision (DPOS) applications.

The subject site is a proposed new residential community and employment area located at 1520, 1540, and 1580 Reach Street. The site is located on the south side of Reach Street, generally between North Port Road and Sherrington Drive.

Figure 1.1 illustrates the location of the subject site.

1.2 Purpose and Scope

The purpose of this study is to identify and assess the potential traffic impacts, if any resulting from the proposed development.

The scope of this study has been developed in consultation with the Region of Durham (the Region). The scope of this study includes:

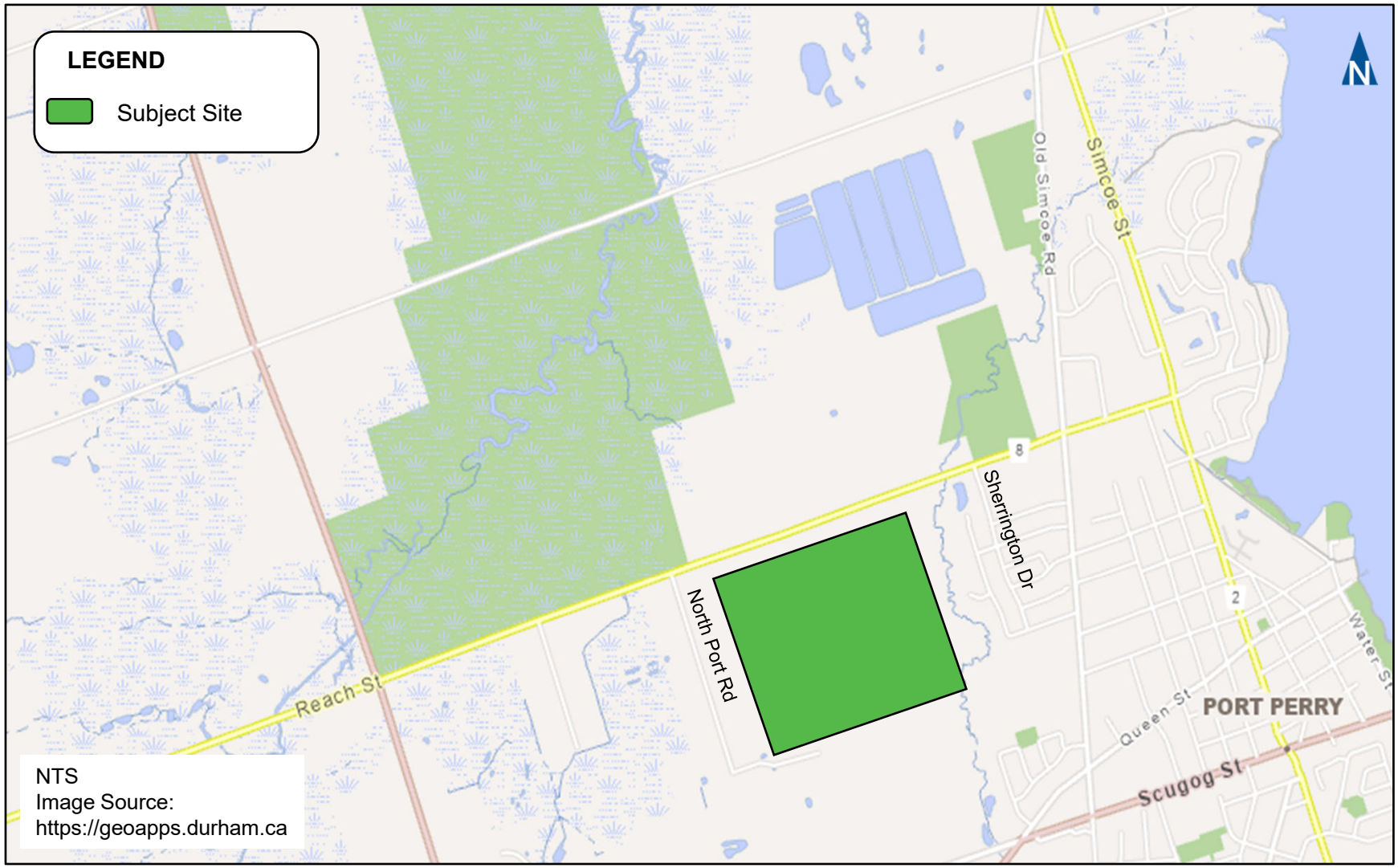
- An assessment of current traffic and site conditions within the following study area:
  - Regional Highway 7/12 and Reach Street (Durham Regional Road 8) (signalized)
  - Old Simcoe Road and Reach Street (Regional Road 8) (signalized)
  - Simcoe Street (Regional Road 2) and Reach Street (Regional Road 8)/Coulter Street (signalized)
  - Proposed Site Access Connections with Reach Street (Regional Road 8) (proposed unsignalized)
- Estimates of background traffic growth for the build-out year of the development, and five years following build-out.
- Estimates of vehicular trips generated by the development.
- Analysis of the impacts to the future traffic on the surrounding road network.
- Identification of mitigation measures/improvements, if required, to mitigate the site generated traffic in a satisfactory manner.

- Identification of application Transportation Demand Management (TDM) measures to assist in minimizing vehicular and parking demands, and promote non-auto travel amongst residents and employees.
- An access review of the proposed connections with Reach Street, including a sight distance review.

Appendix A contains the pre-study consultation material and responses provided by the Region and the Township. At the time of writing, the Township's consultant (R.J. Burnside), had not provided comments on the proposed study Terms of Reference.

This study has been completed in general accordance with the Region of Durham *Traffic Impact Study Guidelines*[1] and direction provided by Regional staff during pre-study consultation.

[1] Region of Durham, *Traffic Impact Study Guidelines*, 2011.



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Subject Site Location

2 Existing Conditions

2.1 Roadways

The main roadways within the study area comprise Highway 7/12, Reach Street (Regional Road 8), Simcoe Street (Regional Road 2) and Old Simcoe Road.

- **Reach Street (Regional Road 8)** is an east-west, two-lane "Type B" arterial road with one travel lane per direction.[2] The road is under Region of Durham jurisdiction.

  The posted speed limit is 70 km/h approaching from the west (eastbound travel direction), transitioning to a reduced 50 km/h approaching Port Perry. The transition occurs approximately 870 metres east of North Port Road.

  From the east (westbound travel direction), the speed limit increase from 50 km/h to 70 km/h approximately 870 metres west of Old Simcoe Road.

  No sidewalk infrastructure is provided along Reach Street, the exception is a discontinuous section of sidewalk provided on the south side of the road between Sherrington Drive and Old Simcoe Road. East of Old Simcoe Road an asphalt pedestrian walkway is provided up to Simcoe Street.
- **Highway 7/12** is a north-south, two-lane "Type A" arterial road with one travel lane per direction.[2] The road is under provincial jurisdiction. The posted speed limit is 80 km/h in the study area. There are no sidewalks on either side of the road.

  A signalized intersection is formed with Reach Street, auxiliary left-turn and right-turn lanes are provided on the northbound and southbound Highway 7/12 approaches.
- **Old Simcoe Road** is a north-south, two-lane collector road with one travel lane per direction.[2] The road is under Township of Scugog jurisdiction. The posted speed limit is 40 km/h north of Reach Street, and has a posted speed limit of 50 km/h south of Reach Street within the study area. There are sidewalks on both sides of the road.

  A signalized intersection is formed with Reach Street, auxiliary left-turn lanes are provided on all intersection approaches.
- **Simcoe Street (Regional Road 2)** is a north-south, two-lane "Type A" arterial road with one travel lane per direction.[2] The

[2] Region of Durham, *Official Plan of the Regional Municipality of Durham – Map 3b. Road Network,* 2024.

road is under Region of Durham jurisdiction. The road has a posted speed limit of 50 km/h in the study area. South of Reach Street sidewalk is provided on both sides of the road. North of Reach Street, sidewalks are provided on both side of the road; however, they are discontinuous and end approximately 70 metres north of Reach Street on the east side, and end at Riverview Drive on the west side.

A signalized intersection is formed with Reach Street. Auxiliary left-turn lanes are provided on all intersection approaches. An auxiliary right-turn lanes is also provided on the southbound Simcoe Street approach.

Figure 2.1 illustrates the existing lane configurations and traffic control at the study area intersections.



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Existing Lane Configurations and Traffic Control

2.2 Transit Network

Durham Region Transit (DRT) operates one bus transit route within the study area, as noted below:

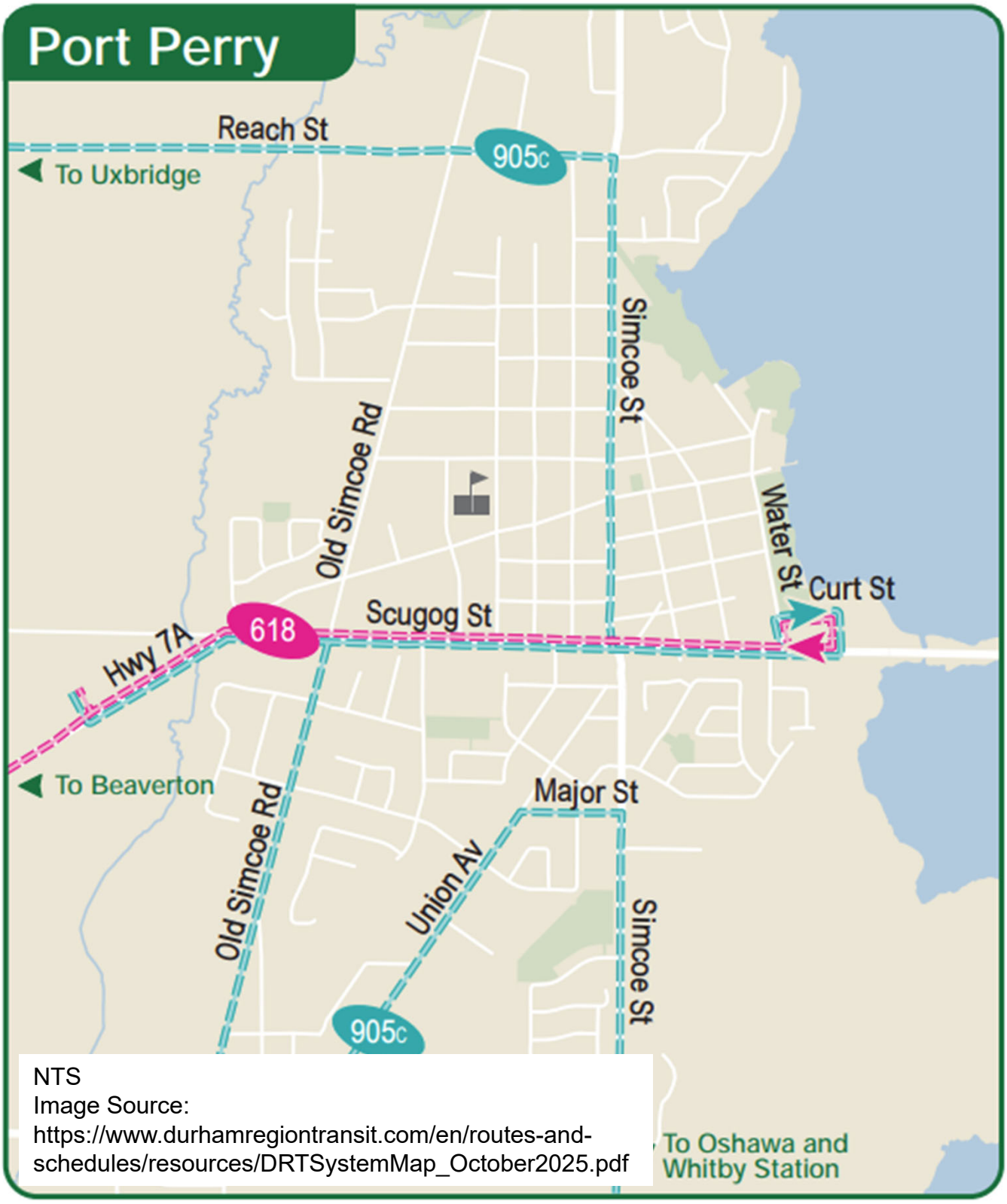
- **Route 905** is split into Branches A and C, with 905C operating within the study area. Route 905C operates between the intersection of Railway Street/Albert Street and the Whitby Station in a predominantly north-south direction.

  The bus operates from 5:35 AM to 11:52 PM on weekdays with a 90-minute headway. Weekend service operates with a 90-minute headway from 5:55 AM to 10:33 PM.[3]

The transit stops are located at the Reach Street intersection of North Port Road and Sherrington Drive.

Figure 2.2 illustrates the service route.

[3] Durham Region Transit. *Routes and Schedules,* 2026.



NTS
Image Source:
https://www.durhamregiontransit.com/en/routes-and-schedules/resources/DRTSystemMap_October2025.pdf

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Durham Region Transit Map (Within Study Area)

2.3 Active Transportation

2.3.1 Walking

Pedestrian access and mobility are important to provide safe and effective access to and from the site for non-vehicle users. The 2021 Township of Scugog *Active Transportation and Transportation Master Plans (AT and TMP)* identify Reach Street as active transportation route candidate.[4]

Currently a small portion of sidewalk is provided on the south side of Reach Street between Sherrington Drive and Old Simcoe Road, as well as a paved Multi-use Path (MUP) between Old Simcoe Road and Simcoe Street. These pedestrian facilities allow for east-west connectivity for active transportation users.

However, there are currently no continuous sidewalk connections with the proposed development to the existing municipal network. Pedestrian movement is generally accommodated within paved or unpaved roadway shoulders where available.

The site is located at a fair distance from any major employment, educational, retail, cultural, and recreational destinations, thus reducing potential demand for walking trips. Given the rural context and limited pedestrian infrastructure, the demand for walking trips to and from the proposed development is expected to be low.

All signalized intersections within the study area provide delineated crosswalk pavement markings and pedestrian signal heads. Pedestrian push buttons are provided at the intersections to actuate pedestrian phases. There are curb depressions with curb cuts at pedestrian crossings to accommodate accessibility for individuals with mobility challenges.

Figure 2.3 depicts the existing pedestrian network, as illustrated in the 2021 AT and TMP.

2.3.2 Cycling

The Township of Scugog promotes healthy living through active transportation. The provision of cycling infrastructure allows trips to be made via the cycling mode rather than automobile. The 2021 AT and TMP identifies the key cycling infrastructure within the Township.

Cycling activity within the study area is accommodated primarily through shared roadway use with motor vehicles. There are paved

[4] Township of Scugog, *Active Transportation and Transportation Master Plans,* 2021.

road shoulders along Reach Street, which accommodate movement of cyclists. There are no dedicated cycling facilities along Reach Street or the adjacent roadway network within the study area.

The site is located relatively far from any major employment, retail, cultural and recreational opportunities, thus reducing potential demand for commuter cycling trips.

Figure 2.4 depicts the Township's existing cycling network, as illustrated in the 2021 AT and TMP.

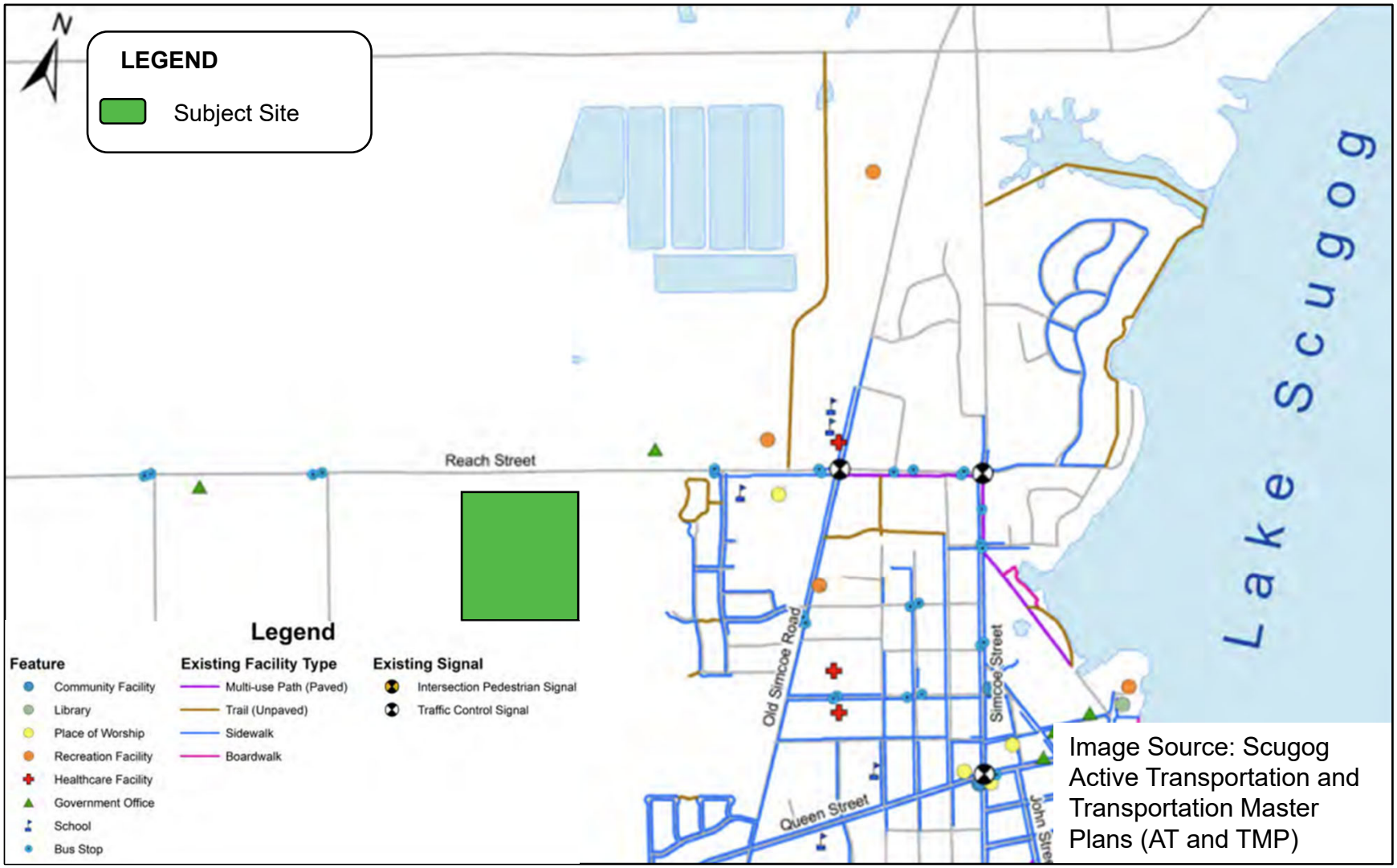


Image Source: Scugog Active Transportation and Transportation Master Plans (AT and TMP)

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Township of Scugog
Existing Pedestrian Network

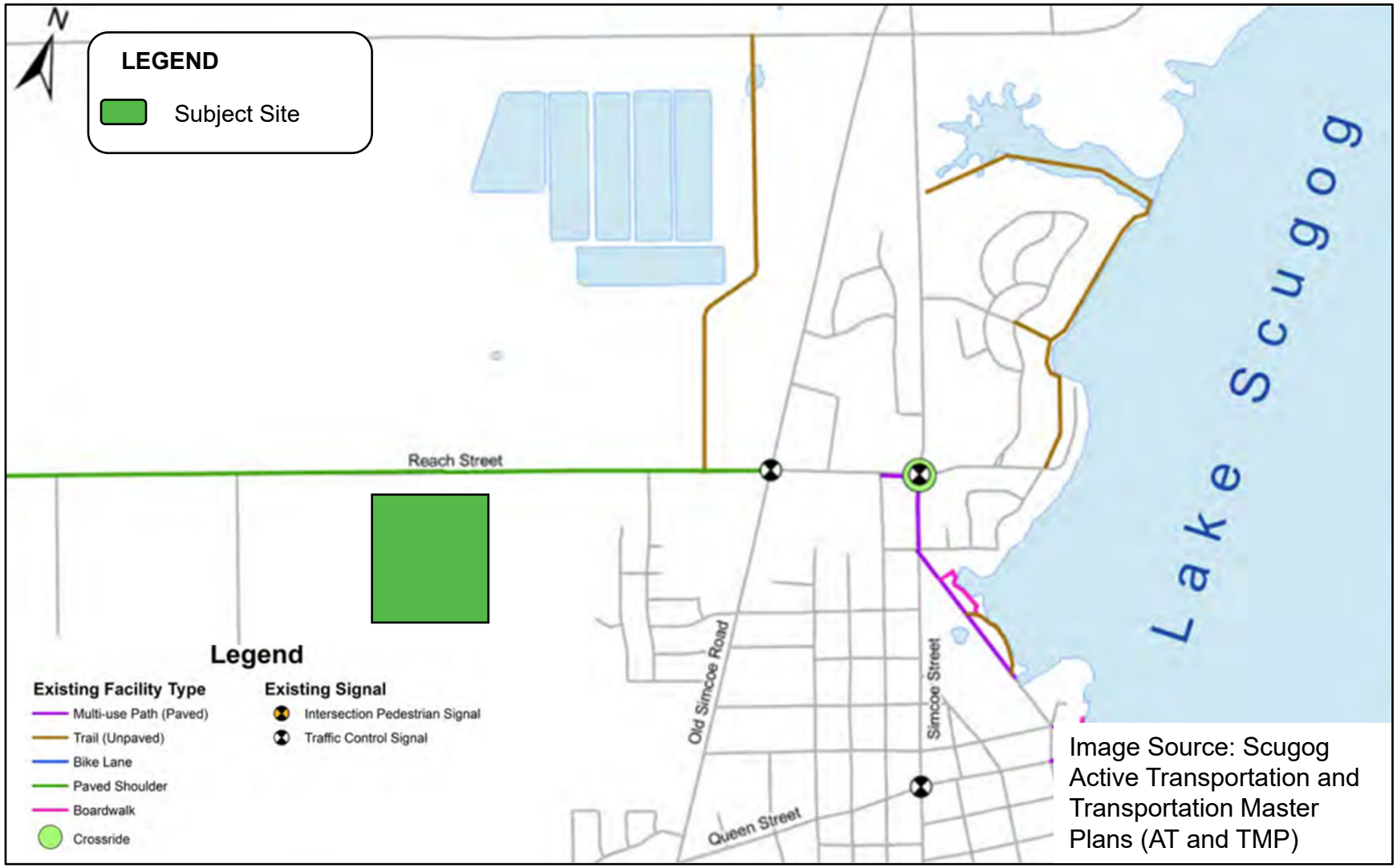


Image Source: Scugog Active Transportation and Transportation Master Plans (AT and TMP)

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Township of Scugog
Existing Cycling Network

2.4 Traffic Volumes

Analysis of intersection operations relies on turning movement counts (TMCs), which quantify the movement of vehicles through an intersection. These volumes form the foundation for operational analyses. The counts are usually conducted during the peak periods at a study intersection to complete the level of service analysis under its worst-case operating condition(s).

Traffic counts for study intersections were obtained from Durham Region *Traffic Volume Counts* database[5] as follows:

- Regional Highway 7/12 and Reach Street (RR8): Tuesday, June 20, 2023.
- Old Simcoe Road and Reach Street (RR8): Wednesday, September 20, 2023.
- Simcoe Street (RR2) and Reach Street (RR8)/Coulter Street: Wednesday May 8, 2024.
- Reach Industrial Park Road and Reach Street (RR8): Tuesday, July 8, 2025.

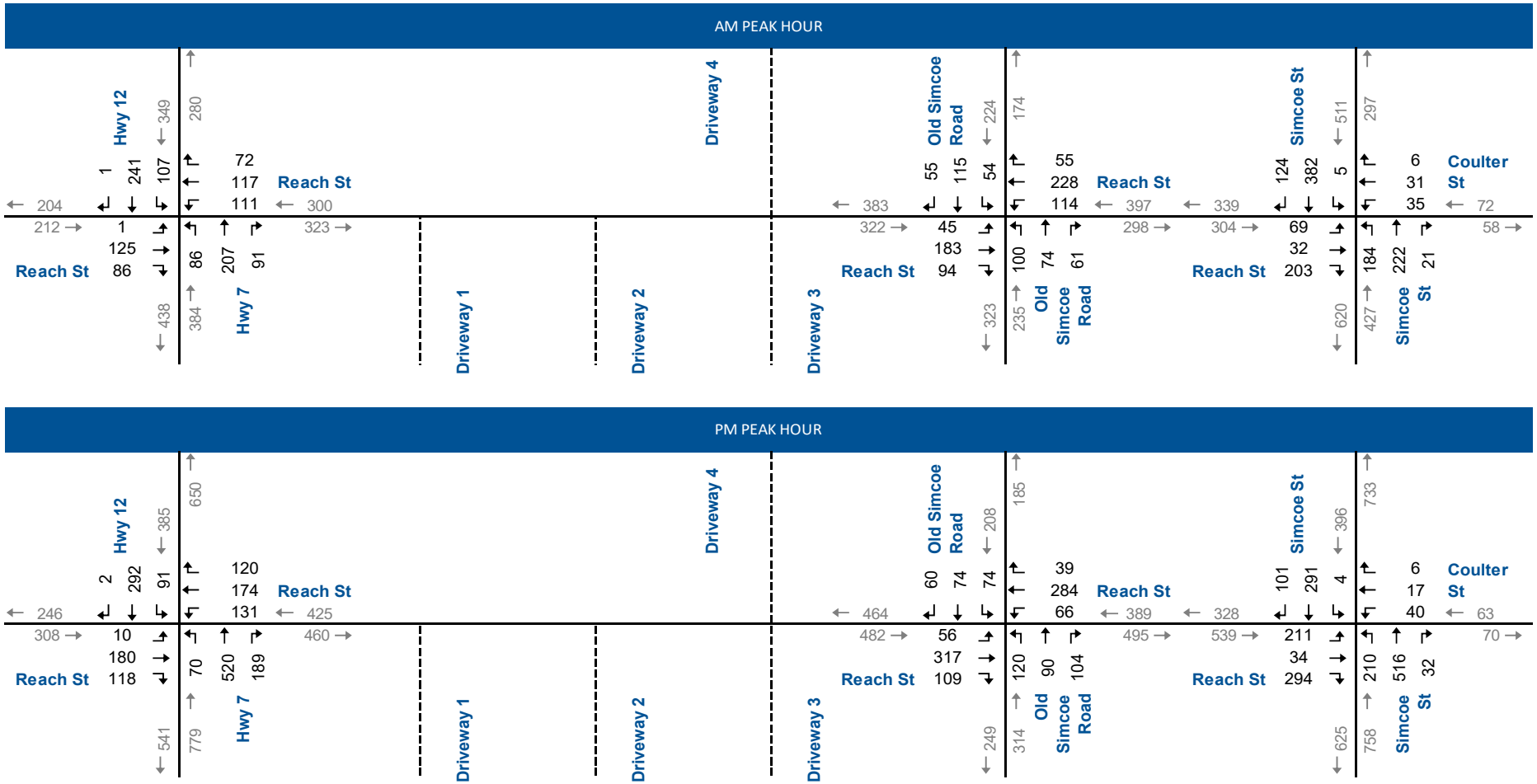
Regional staff advised that any data utilized shall be from 2024 or newer. Upon review of the two 2023 intersection counts and in comparison to available adjacent 2024 and 2025 intersection counts, the eastbound and westbound volumes along Reach Street were found to be of similar magnitude; therefore, were concluded/validated applicable for use.

A conservative (i.e., errs on the high side) growth rate of 1.0% compounded per annum was applied to the data to estimate 2026 base line traffic volumes. This growth rate was determined based upon a review of future growth as documented within the 2021 Township of Scugog *Active Transportation and Transportation Master Plans.*

Appendix B contains the raw TMC data for reference.

Figure 2.5 illustrates the existing traffic volumes for the AM and PM peak hours.

[5] Durham Region, *Traffic engineering & Operations – Traffic Volume Counts*, 2025. Available at: https://maps.durham.ca/TrafficCounts



Existing Traffic Volumes AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 2.5

2.5 Traffic Observations

Paradigm staff visited the study area to conduct observations on 13 January 2026 during the AM and PM peak periods. Existing lane configurations, traffic signage, and traffic signal timings were confirmed in the field.

Sight distances were also collected in the field as related to the proposed three accesses with Reach Street. Further discussion is provided within the report.

Paradigm staff noted a good level of service is being provided in the study area. No anomalies were noted as traffic was observed to be operating without any unusual delay.

2.6 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to opposing traffic flows, intersection geometry, and at signalized intersections, signal timing.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity ratio is greater than 1.00, the movement is classed as LOS F, and remedial measures are usually implemented if they are feasible.

Traffic operations at the study intersections have been analyzed using Synchro 12 software, which implements the methodologies of the Highway Capacity Manual (HCM).

The analysis is conducted in accordance with the Region of Durham *Traffic Impact Study Guidelines (2011)* and utilizes default saturation flow rates of 1,900 vehicles per hour per lane (vphpl).[1] A lane width of 3.5 metres has been applied for through lanes and 3.25 metres for exclusive left and right turn lanes.[6] Peak Hour Factor (PHF) of 0.92 has been applied for both the AM and PM peak hours, based on the

Region of Durham *Design Specifications for Traffic Control devices, Pavement Markings, Signage and Roadside Protection* guidelines.[6]

Existing lane configurations, traffic control, and existing traffic volumes are reflected in the analyses. The analyses consider three separate measures of effectiveness:

- The Level of Service (LOS) for each turning movement.
- The volume-to-capacity (v/c) ratio for each movement.
- The estimated 95th percentile queue lengths.

Appendix B contains the signal timing plan data as obtained for Durham Region.

The criteria for identifying critical movements at signalized intersections are those which operate with a v/c ratio greater than 0.90, or LOS E or worse. This criterion also applies to through movements and shared/exclusive turning lanes.

Table 2.1 summarizes the operational analysis results including the level of service (LOS), average delay in seconds, v/c ratio, and 95th percentile queue lengths in metres for the AM and PM peak hours.

The analysis of existing conditions indicates all intersections and vehicle movements are currently operating at acceptable levels of service and within capacity during the peak hours.

The results are consistent with the field traffic observations conducted.

The 95th percentile queue lengths were reviewed for all turn lanes against provided storage. Queue lengths for through movements were also checked. No queue exceedances or spillback issues are reported.

Appendix C contains the detailed Synchro reports.

[6] The Regional Municipality of Durham, *Design Specifications for Traffic Control Devices, Pavement Markings, Signage and Roadside Protection*, 2023.

TABLE 2.1: EXISTING TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	**B**	<	C	>	**C**	B	B	B	**B**	B	B	B	**B**	**B**
			Delay	<	16	>	**16**	<	24	>	**24**	11	12	10	**11**	11	12	10	**12**	**16**
			V/C	<	0.36	>		<	0.73	>		0.22	0.33	0.07		0.26	0.39	0.00		**0.54**
			Q	<	29	>		<	53	>		19	39	8		23	46	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		78	-	49		90	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	B	B	>	**B**	B	B	>	**B**	**C**
			Delay	23	30	>	**29**	30	29	>	**29**	13	11	>	**12**	11	12	>	**12**	**22**
			V/C	0.18	0.56	>		0.48	0.55	>		0.23	0.13	>		0.11	0.20	>		**0.37**
			Q	15	65	>		34	67	>		19	16	>		11	24	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	80	-	>		52	-	>		48	-	>		49	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	A	A	>	**A**	A	A	A	**A**	**B**
			Delay	33	32	>	**32**	35	30	>	**33**	6	5	>	**5**	4	5	4	**5**	**13**
			V/C	0.45	0.32	>		0.44	0.14	>		0.35	0.21	>		0.01	0.33	0.10		**0.37**
			Q	21	24	>		14	12	>		26	25	>		1	42	6		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	123	-	>		11	-	>		76	-	>		77	-	70		
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	**B**	<	C	>	**C**	B	C	B	**C**	C	B	B	**B**	**C**
			Delay	<	16	>	**16**	<	32	>	**32**	15	26	14	**22**	22	16	13	**18**	**22**
			V/C	<	0.45	>		<	0.85	>		0.20	0.80	0.15		0.61	0.47	0.00		**0.82**
			Q	<	56	>		<	118	>		15	105	11		32	52	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		82	-	46		81	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	C	D	>	**D**	D	D	>	**D**	B	B	>	**B**	B	B	>	**B**	**C**
			Delay	25	44	>	**42**	48	41	>	**42**	13	12	>	**12**	12	12	>	**12**	**31**
			V/C	0.26	0.85	>		0.52	0.64	>		0.27	0.20	>		0.16	0.15	>		**0.52**
			Q	18	124	>		28	90	>		23	22	>		15	16	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	77	-	>		58	-	>		44	-	>		45	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	A	B	>	**B**	B	B	B	**B**	**B**
			Delay	30	25	>	**27**	31	26	>	**29**	8	11	>	**10**	11	14	12	**14**	**17**
			V/C	0.76	0.32	>		0.37	0.05	>		0.41	0.52	>		0.01	0.34	0.08		**0.63**
			Q	47	24	>		15	8	>		28	90	>		2	53	8		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	97	-	>		10	-	>		74	-	>		76	-	68		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
< / > - Shared with through movement

3 Development Concept

3.1 Overview

The subject lands comprise the municipal addresses of 1520, 1540, and 1580 Reach Street in the Township of Scugog. The lands are located on the south side of Reach Street, generally between North Port Road and Sherrington Drive. A new residential community and employment area are proposed.

The property owner is proposing to develop approximately one third of the overall lands as employment, and the remainder of the lands as residential.

For assessment purposes, build-out of the site is anticipated by 2028.

Figure 3.1 illustrates the concept plan prepared by Malone Given Parsons Ltd., dated 4 February 2026.

3.2 Proposed Land Use and Development Statistics

The employment lands are anticipated to include “Prestige Industrial” and “General Industrial” land uses, comprising approximately 6.00 hectares and 8.98 hectares, respectively. For assessment purposes. it is assumed that 50% of the employment lands will be developable, resulting in approximately 3.00 hectares (322,917 ft²) of Prestige Industrial development, and 4.49 hectares (483,300 ft²) of General Industrial development.

The residential lands are proposed to include a medium density, medium/high density mixed-use development comprising up to 285 residential units, and 5,000-15,000 ft^2 retail area, a long-term care facility with approximately 250 units (with one bed assumed to represent one unit), approximately 382 detached single-family dwellings, and up to 350 condominium townhouse units.

The plan currently identifies a range for dwelling units that are not yet finalized. Therefore, a conservative approach has been applied, and the upper bound of the proposed unit range and retail floor area have been used for the purpose of this study.

3.3 Transportation Network

3.3.1 Vehicle Access

Vehicle access to the proposed employment lands is proposed via a local road connecting to Reach Street, located approximately 265

metres east of North Port Road, and is proposed to operate unsignalized with stop-controlled on the proposed driveway approach. This access will herein be referred to as Driveway 1 (West Access).

Vehicle access to the residential lands is proposed via two local road connections to Reach Street.

One of the residential access connections are proposed to be located approximately 447 metres west Sherrington Drive, herein referred to as Driveway 3 (East Access) aligned across from a future anticipated driveway serving a planned Regional Water Tower, herein referred to as Driveway 4. It is understood access to/from the existing waste transfer station will be served by this new driveway, with its west most existing driveway connection with Reach Street to be closed. As we understand, the east existing driveway is to be maintained for service vehicle usage. As we understand, Regional staff anticipate this connection with Reach Street to be signalized, and based on discussions with staff have confirmed the location of Driveway 3/Driveway 4 above as appropriate as the Regions 205 metre Decision Sight Distance requirement is met at this proposed spacing/distance.

The other residential access connection is proposed to be located approximately 225 metres west of the Driveway 3/Driveway 4 (East Access) herein will be referred to as Driveway 2 (Central Access).

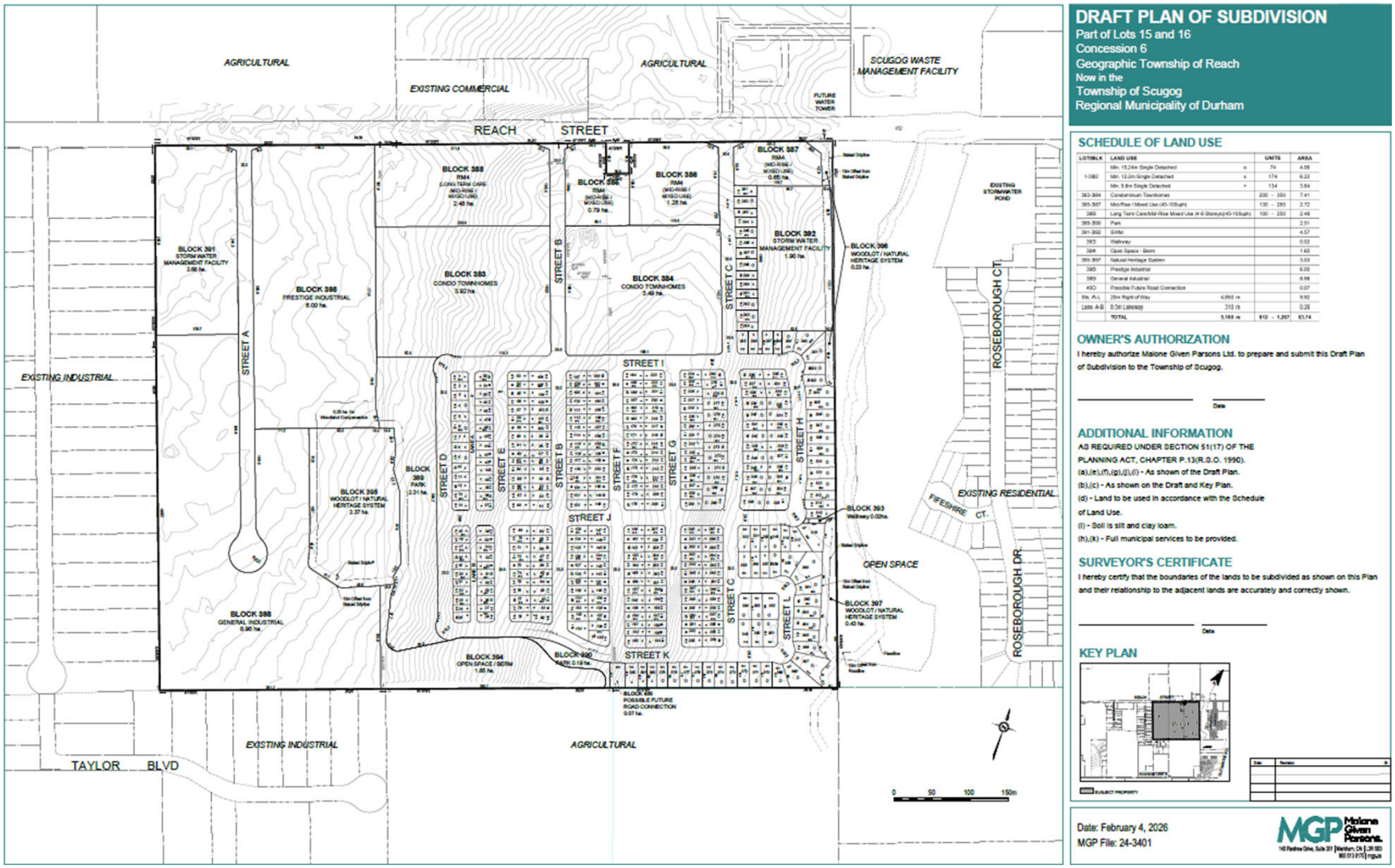
3.3.2 Internal Road Network

The industrial lands would be served by a local road providing a 20.0 metre right-of-way (ROW). Similarly the residential lands would also be served by a local road network with 20.0 m ROWs. All road cross-sections would be designed to Township standards.

The internal roadway configuration is organized in a grid pattern, the current plan indicates all internal intersection angles are approximately 90 degrees and the internal road have little to no horizontal deflection. The minor exception would be a small section in the southwest limits of the residential area where there would be minor horizontal deflection, and an internal intersection for at less than 90 degrees.

While the current draft plan does not illustrate roadway curbs, it is recommended that a minimum curb radii of 7.5 metre be provided.

Additionally, to ensure sufficient corner rounding is provide such that it provides sufficient visibility for drivers, pedestrians, and cyclists at intersections, minimum corner rounding of 5.0 metres be provided.



paradigm TRANSPORTATION SOLUTIONS LIMITED

Site Plan

1520, 1540 and 1580 Reach Street TIS
250853

Figure 3.1

3.2 Site Traffic Forecasts

3.2.1 Trip Generation

The Institute of Transportation Engineers (ITE) publication, *Trip Generation Manual (12th Edition)*[7] was referenced to estimate the peak hour traffic volumes generated by the proposed development.

The following Land Use Codes (LUCs) have been referenced:

- LUC 130 (Industrial Park).
- LUC 210 (Single-Family Detached Housing).
- LUC 220 (Multifamily Housing (Low-Rise)).
- LUC 221 (Multifamily Housing (Mid-Rise)).
- LUC 254 (Assisted Living).
- LUC 822 (Strip Retail Plaza (<40k)) in a general urban/suburban context.

The following assumptions were made in estimating trip generation:

- Trips associated with the employment lands designated as “Prestige Industrial” and “General Industrial” were estimated using LUC 130 (Industrial Park), with the assumption that 50% of each employment land area will be developable.
- The site plan identifies a range of residential unit counts and retail GFA. A conservative approach (i.e., errs on the high side) was undertaken and the upper bound of the proposed unit range and retail floor area were used for estimating trips generated.
- The proposed long-term care facility is planned to include up to 250 units. For the purposes of trip generation using LUC 254 (Assisted Living), it was assumed there will be one bed per unit.

As the planned development includes different land uses, there is the potential for some trips that will begin and end within the development. Internal trip rates were applied to all the residential and retail LUCs, as the people residing within the site are most likely to make use retail and generate internal trips within the site.

The industrial land use is not internal to the site, as it does not have direct access from within the development and requires all trips to be made externally. Therefore, LUC 130 – Industrial Park was excluded

[7] ITE. *Trip Generation Manual (11th Edition)*. Washington, D.C. September 2021.

from the internal trip calculations. Internal trip rates were adopted from Table 6.1 and Table 6.2 in the *ITE Trip Generation Handbook (3rd Edition)*.[8]

The planned development is not expected to generate entirely new trips. A proportion of these trips will be pass-by trips, constituting a subset of trips passing close to the planned mixed-use development.

The pass-by trip rates were applied to LUC 822 – Strip Retail Plaza (<40k). It should be noted that the pass-by rate for LUC 822 – Strip Retail Plaza (<40k) str not available and was estimated at 34% for the PM peak hour. This estimation is based on the next most applicable land use, LUC 820 – Shopping Center. For the AM peak hour, a conservative approach was adopted and a 0% pass-by rate was assumed.

Appendix D contains the details of internal trips and pass-by trips for each land use.

Table 3.1 summarizes the forecast trip generation and indicates the proposed development is expected to generate 779 trips in the AM peak hour, and 942 trips in the PM peak hour.

[8] Institute of Transportation Engineers. *Trip Generation Handbook (3rd Edition).* Washington, D.C. August 2014.

TABLE 3.1: SITE TRIP GENERATION

Land Use Code	Trip Type	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 130	Total	Eqn.	136	41	177	Eqn.	68	175	243
	Pass-by	0%	0	0	0	0%	0	0	0
	Internal Capture	0%	0	0	0	0%	0	0	0
	Sub-Total		*136*	*41*	*177*		*68*	*175*	*243*
LUC 210	Total	Eqn.	71	191	262	Eqn.	205	125	330
	Pass-by	0%	0	0	0	0%	0	0	0
	Internal Capture	1%	1	1	2	2%	4	2	6
	Sub-Total		*70*	*190*	*260*		*201*	*123*	*324*
LUC 220	Total	Eqn.	33	102	135	Eqn.	109	66	175
	Pass-by	0%	0	0	0	0%	0	0	0
	Internal Capture	1%	1	1	2	3%	3	1	5
	Sub-Total		*32*	*101*	*133*		*106*	*65*	*170*
LUC 221	Total	Eqn.	26	86	112	Eqn.	68	38	106
	Pass-by	0%	0	0	0	0%	0	0	0
	Internal Capture	1%	1	1	2	4%	3	1	4
	Sub-Total		*25*	*85*	*110*		*65*	*37*	*102*
LUC 254	Total	Eqn.	28	20	48	Eqn.	23	37	60
	Pass-by	0%	0	0	0	0%	0	0	0
	Internal Capture	2%	0	1	1	6%	2	1	3
	Sub-Total		*28*	*19*	*47*		*21*	*36*	*57*
LUC 822	Total	Eqn.	32	27	59	Eqn.	47	47	94
	Pass-by	0%	0	0	0	34%	16	16	32
	Internal Capture	12%	4	3	7	18%	5	12	17
	Sub-Total		*28*	*24*	*52*		*26*	*19*	*45*
Total	**Total**		**326**	**467**	**793**		**520**	**488**	**1,008**
	Pass-by		**0**	**0**	**0**		**16**	**16**	**32**
	Internal Capture		**7**	**7**	**14**		**17**	**17**	**34**
	Net		**319**	**460**	**779**		**487**	**455**	**942**

3.2.2 Mode Split

Data from the 2022 Transportation Tomorrow Survey (TTS) is often used to estimate mode split for traffic studies. The TTS is a household travel survey conducted throughout the Greater Golden Horseshoe by the Data Management Group at the University of Toronto.[9]

Table 3.2 summarizes the existing modal choice in and out of the study area. The data has been extracted from the 2022 Transportation Tomorrow Survey (TTS) for traffic analysis zone (TAZ) 2296.

Appendix E contains the TTS query for reference.

TABLE 3.2: TTS MODE CHOICE (TAZ 2296)

Mode	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Driver/Auto Passenger	100%	100%	100%	100%
Transit	0%	0%	0%	0%
Bicycle	0%	0%	0%	0%
Walk	0%	0%	0%	0%
Taxi passenger	0%	0%	0%	0%
Paid rideshare	0%	0%	0%	0%
School bus	0%	0%	0%	0%
Other	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**

The dataset suggests driving is the primary and only mode of transportation to and from the study area. Use of personal vehicles (either as a driver or a passenger) accounts for 100% of the mode split in either peak hour. The existing mode split suggests the need to promote alternate modes of transportation to reduce travel by single-occupant vehicle.

3.2.3 Trip Distribution and Assignment

The directional distribution of traffic approaching and departing the subject lands is a function of several variables including population density, existing travel patterns, and efficiency of the roadways leading to the subject lands.

The trip distribution for the development site is based upon a review of existing traffic patterns. **Table 3.3** summarizes the estimated directional distribution.

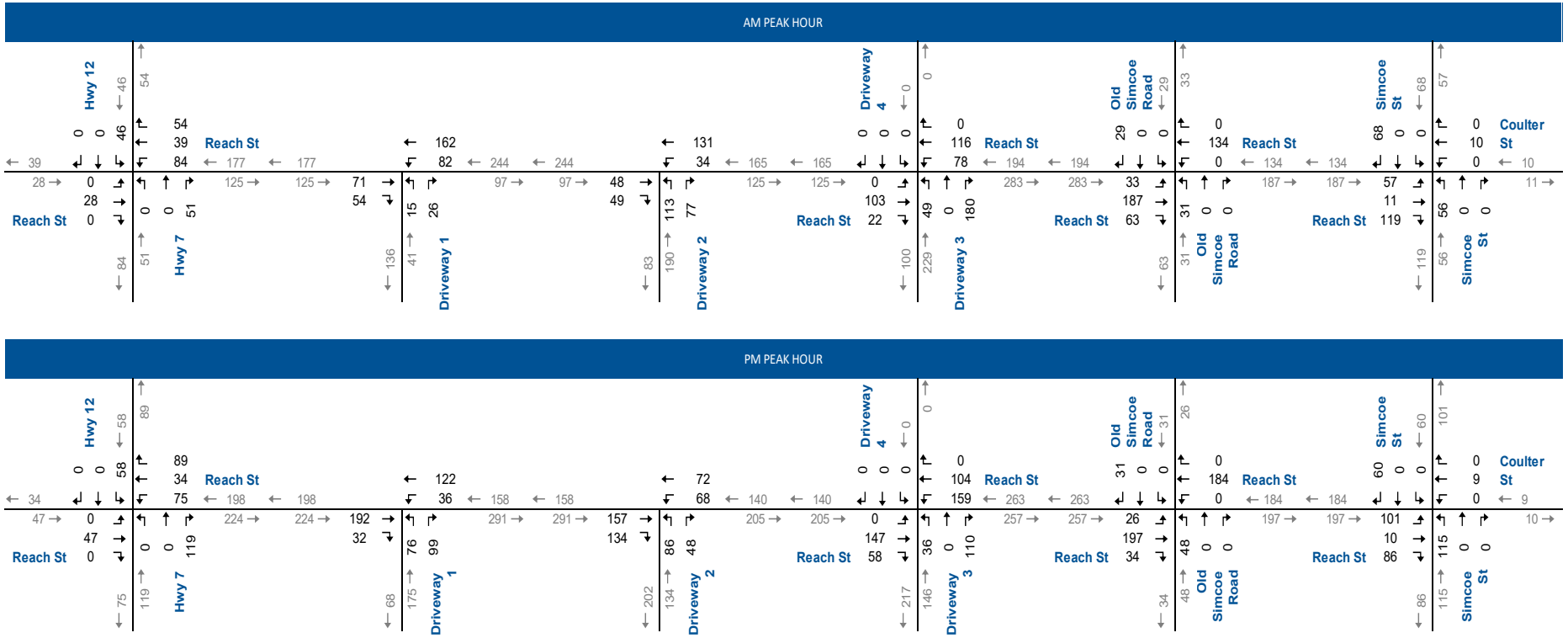
[9] University of Toronto. *Transportation Tomorrow Survey.* 2022.

TABLE 3.3: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
East via Reach Street	3%	2%	2%	2%
West via Reach Street	9%	9%	10%	7%
North via Highway 12/Highway 7	14%	12%	12%	20%
South via Highway 12/Highway 7	16%	18%	24%	16%
North via Old Simcoe Road	9%	7%	6%	6%
South via Old Simcoe Road	10%	14%	10%	8%
North via Simcoe Street	21%	12%	12%	22%
South via Simcoe Street	18%	26%	24%	19%
Total	**100%**	**100%**	**100%**	**100%**

The site trips were all assigned to the transportation network in accordance with the noted trip distribution.

Figure 3.2 illustrates the site generated traffic assigned to the road network for the weekday AM and PM peak hours. Slight differences with respect to the trip generation estimates are due to rounding.



Site Generated Traffic AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 3.2

4 Future Conditions

4.1 Horizon Years

Consistent with Region TIS Guidelines and pre-study consultation, Paradigm has analyzed the following horizon years:

- 2028: Estimated Opening Year.
- 2033: Five-Years from the Opening Year.

4.2 Future Roadway Improvements

During pre-study consultation, Regional staff confirmed there are no road network improvements planned within the study area.

4.3 Background Traffic Forecasts

The future background traffic volumes in the study area are expected to comprise general background growth and traffic generated by approved or in-stream developments near the subject site.

4.3.1 General Background Growth

General background traffic reflects increases in traffic unrelated to any updates at the subject site.

Background traffic growth has been estimated through the application of a compounded growth rate of 1.0% per annum. The growth rate was calculated based upon population, housing, and employment data/forecasts between 2018 and 2031 as documented within the Township of Scugog's *Active Transportation and Transportation Master Plan* document.[10] This use of this growth rate was confirmed with Regional staff during pre-study consultation.

4.3.2 Other Area Developments

Township of Scugog planning staff confirmed there are no other area developments to be accounted for.

Regional staff identified upgrades to the existing Scugog Waste Management Facility, as well as the development of a water tower and a bulk water filling station. The vehicle trips generated from these facilities were obtained from Region staff.

[10] Township of Scugog, *Active Transportation and Transportation Master Plans*, 2021.

Region staff also provided 2025 daily vehicle volume data for inbound and outbound trips at the Scugog Waste Management Facility. The 85th percentile volume was used to represent typical peak traffic demand at the facility. As noted by Region staff, the same traffic volume is to be conservatively assumed for the proposed bulk water filling station operations.

Table 4.1 summarizes the other area developments identified by the Region during pre-study consultation.

TABLE 4.1: OTHER AREA DEVELOPMENT TRAFFIC

Facility	Typical Traffic Demand					
	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Scugog Waste Management Facility	33	33	66	15	15	30
Water Tower	5	5	10	5	5	10
Bulk Water Filling Station	33	33	66	15	15	30
Total	**71**	**71**	**142**	**35**	**35**	**70**

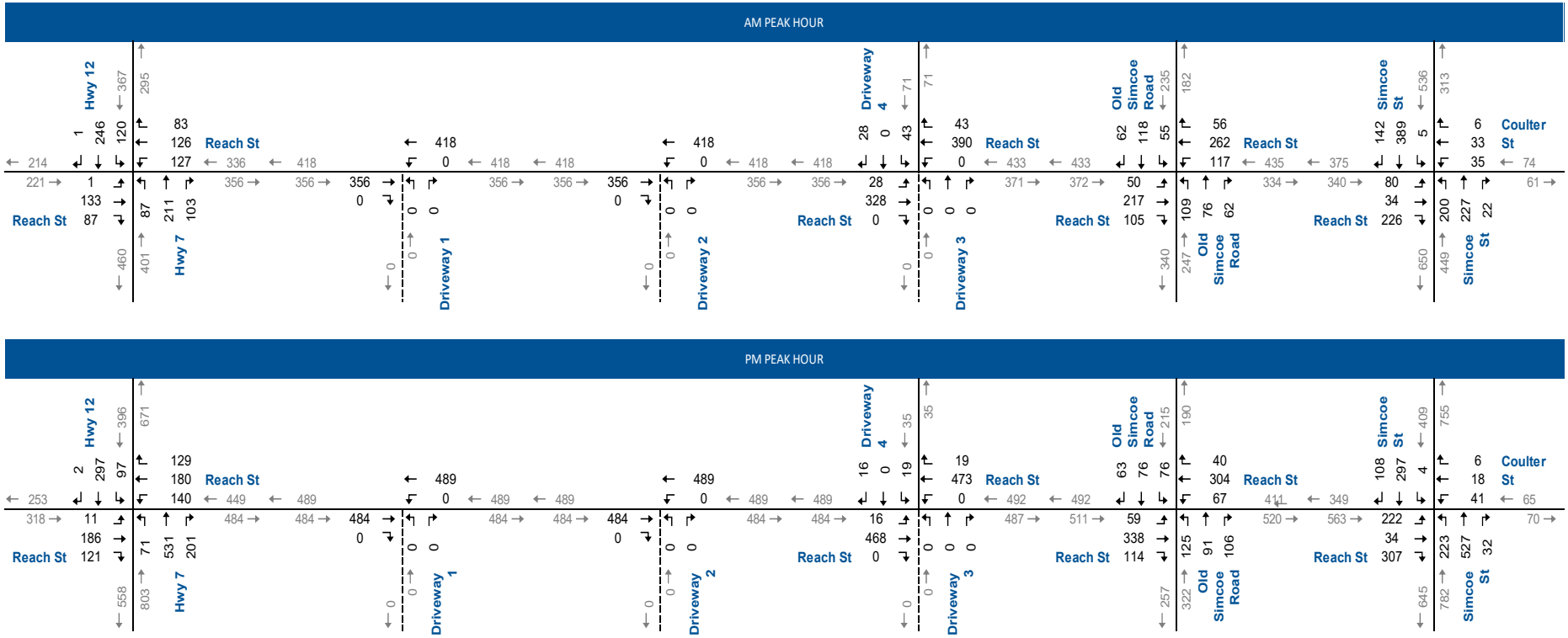
The other area development traffic was assigned to the transportation network based upon the trip distribution previously documented.

4.3.3 Traffic Forecasts

The future generalized background growth was combined with the traffic generated by other area developments.

Figure 4.1 illustrates the 2028 background traffic forecasts for the AM and PM peak hours.

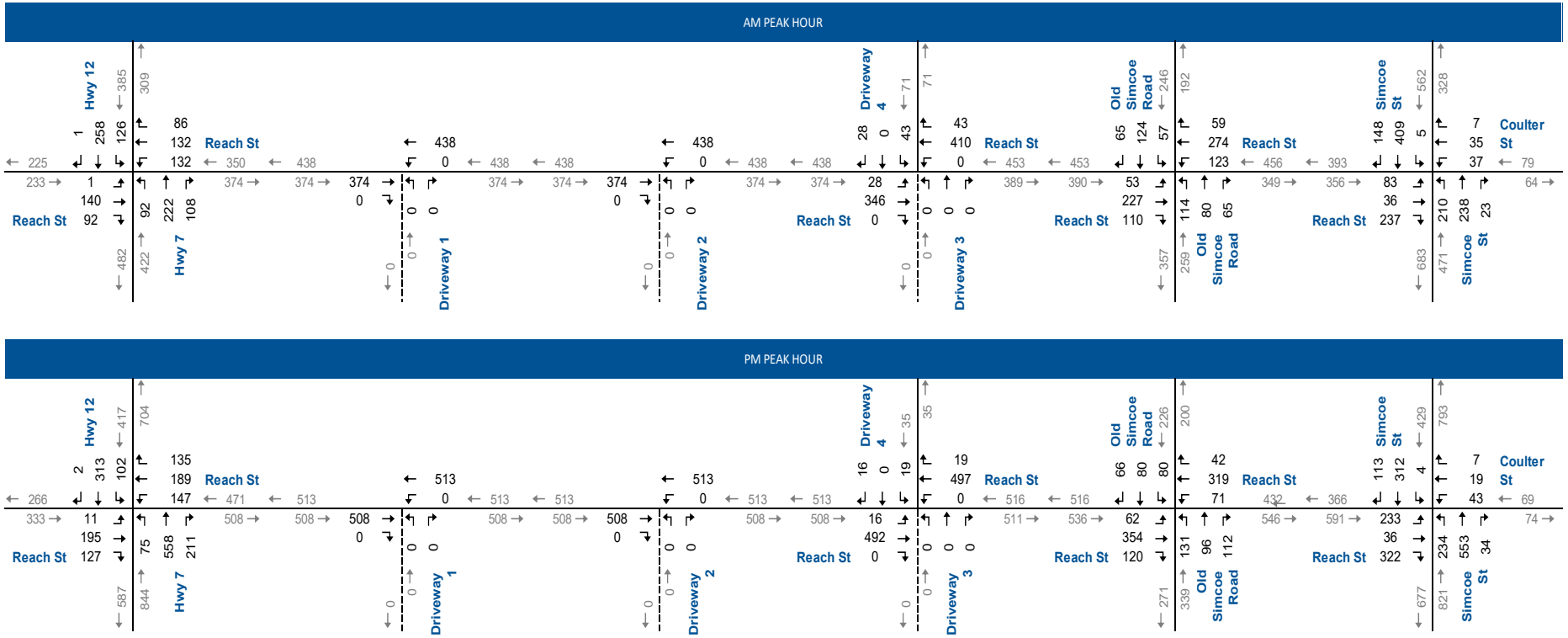
Figure 4.2 illustrates the 2033 background traffic forecasts for the AM and PM peak hours.



2028 Background Traffic AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 4.1



2033 Background Traffic AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

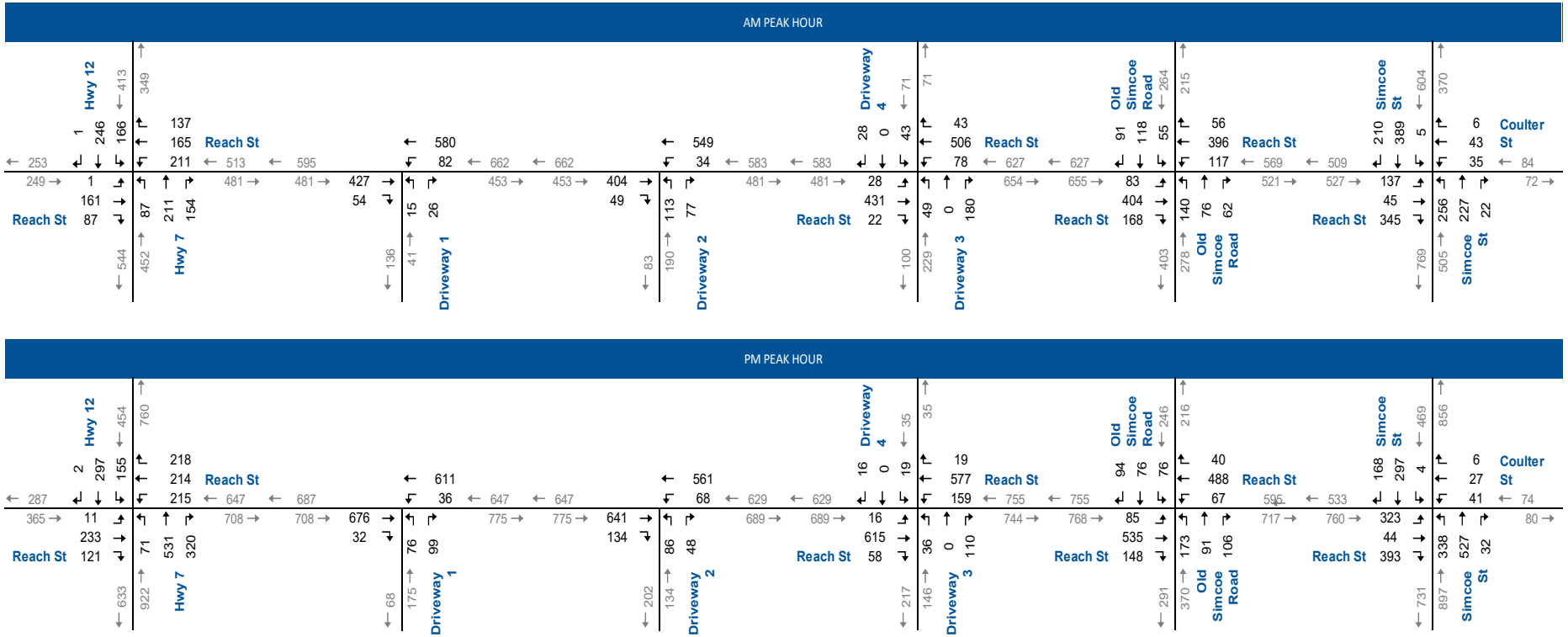
Figure 4.2

4.4 Total Traffic Forecasts

The forecast total traffic volumes are estimated as the summation of the forecast site generated traffic volumes to the forecast background traffic volumes.

Figure 4.3 illustrates the 2028 forecast total traffic volumes in the AM and PM peak hours.

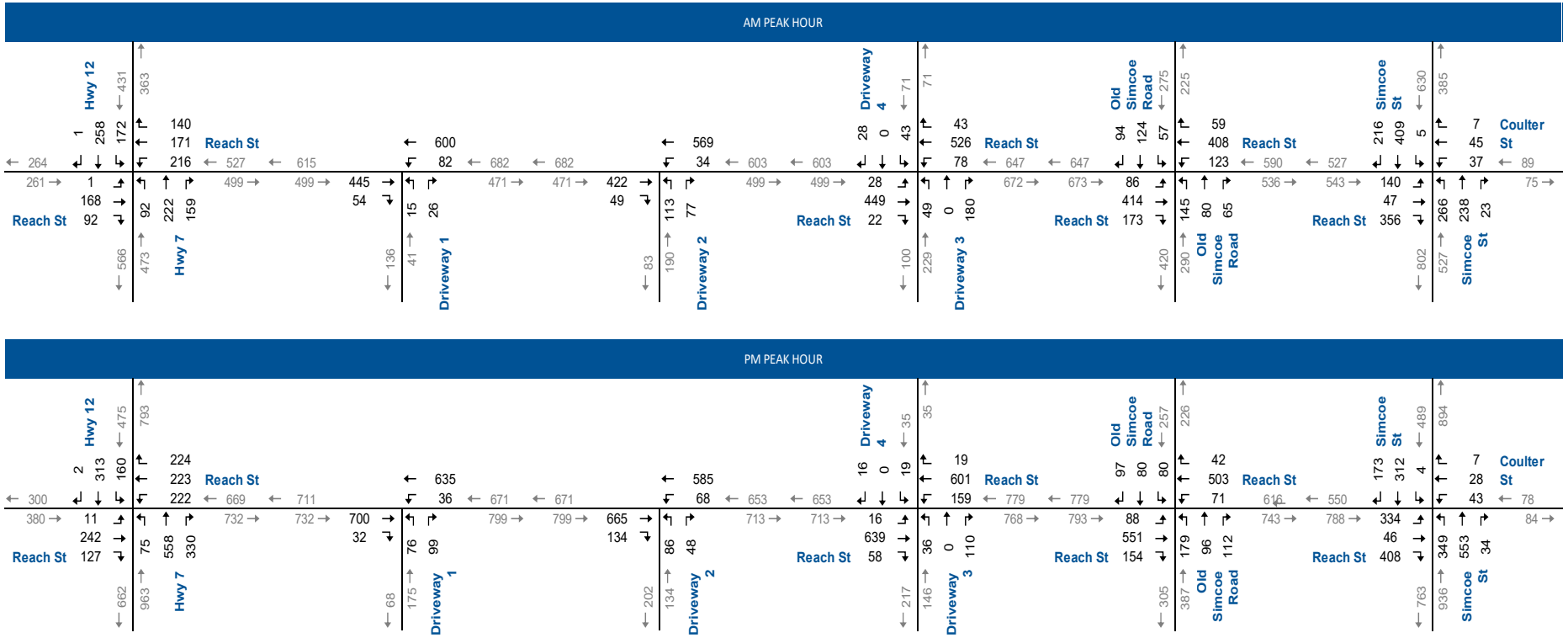
Figure 4.4 illustrates the 2033 forecast total traffic volumes in the AM and PM peak hours.



2028 Total Traffic
AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 4.3



2033 Total Traffic
AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 4.4

4.5 Warrant Analysis – Background Traffic Conditions

Applicable study area intersections were assessed to determine whether forecast traffic volumes would warrant the provision of auxiliary left-turn or right-turn lane under background traffic conditions.

4.5.1 Left-Turn Lane

The warrant for left-turn lanes follows the Ministry of Transportation's (MTO) Design Supplement to the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads* (GDGCR) requirements, which provides guidance on the assessment of and/or need for auxiliary left-turn lanes on two-lane highways.[11]

The deceleration length and taper length were determined based on Region of Durham *Left Turn Lane Design Guideline – Typical*.[12] The warrant analysis to determine if a left-turn lane is needed is based on the following criteria:

- Design speed of the road
- Advancing volume
- Opposing volume
- Percent of advancing vehicles performing a left-turn maneuver

The percentages of left-turning vehicles in the approaching volume were rounded to the nearest five percent, as warrant nomographs are only provided for five percent increments.

Table 4.2 summarizes the results of the left-turn lane warrant analysis under 2028 and 2033 background conditions for AM and PM peak hours.

Appendix F contains the warrant nomographs for reference.

The results indicate auxiliary left-turn lanes are warranted for at following intersections:

- **Highway 7/Highway 12 and Reach Street:** WBL under 2028 and 2033 horizon years for both AM and PM peak hours.
- **Driveway 4 and Reach Street:** EBL under 2028 and 2033 horizon years for both AM and PM peak hours.

[11] Transportation Association of Canada, *MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads – Appendix 9A*, Ministry of Transportation of Ontario, 2023.
[12] Durham Region, *Left Turn Lane Design Guideline – Typical (S-300.040),* 2021.

TABLE 4.2: LEFT-TURN LANE WARRANT – BACKGROUND TRAFFIC CONDITIONS

Intersection	Parameters	Background Scenario Year and Time Period							
		2028 AM		2028 PM		2033 AM		2033 PM	
Highway 7/12 & Reach St 90 km/h Design Speed	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	221	336	318	449	233	350	333	471
	Opposing Volume	336	221	449	318	350	233	471	333
	Left Turning Traffic	1	127	11	140	1	132	11	147
	% of Left Turning Traffic	0%	38%	3%	31%	0%	38%	3%	31%
	Figure Referenced[1]	9A-19 (5%)	9A-22 (40%)	9A-19 (5%)	9A-22 (30%)	9A-19 (5%)	9A-22 (40%)	9A-19 (5%)	9A-22 (30%)
	Warranted	**NO**	**YES**	**NO**	**YES**	**NO**	**YES**	**NO**	**YES**
	Storage Length (m)	N/A	15	N/A	25	N/A	15	N/A	25
	Deceleration Length (m)	N/A	106	N/A	106	N/A	106	N/A	106
	Taper Length (m)	N/A	70	N/A	70	N/A	70	N/A	70
Driveway 4 & Reach St 90 km/h Design Speed	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	356	N/A	484	N/A	374	N/A	508	N/A
	Opposing Volume	433	N/A	492	N/A	453	N/A	516	N/A
	Left Turning Traffic	28	N/A	16	N/A	28	N/A	16	N/A
	% of Left Turning Traffic	8%	N/A	3%	N/A	7%	N/A	3%	N/A
	Figure Referenced[1]	9A-19 (10%)	N/A	9A-19 (5%)	N/A	9A-19 (10%)	N/A	9A-19 (5%)	N/A
	Warranted	**YES**	**N/A**	**YES**	**N/A**	**YES**	**N/A**	**YES**	**N/A**
	Storage Length (m)	15	N/A	15	N/A	15	N/A	15	N/A
	Deceleration Length (m)	106	N/A	106	N/A	106	N/A	106	N/A
	Taper Length (m)	70	N/A	70	N/A	70	N/A	70	N/A

[1]Based on MTO Design Supplement for TAC Geometric Design Guide for Canadian Road – June 2017

4.5.2 Right-Turn Lane Warrant

Applicable study area intersections were assessed to determine whether the future traffic volumes warrant the installation of a right-turn lane.

The warrant for right-turn lanes was determined based on the Region of Durham *Design Specifications for Roads, Structures and Entranceways* guidelines.[13] The deceleration length and length were determined based on Region of Durham *Right Turn Lane Design Guideline – Typical*.[14] The warrant analysis to determine if a right-turn lane is needed is based on the following criteria:

- Road classification
- Road Type
- Advancing volume
- Right-turn volume

Table 4.3 summarizes the results of the right-turn lane warrant analysis for all the study intersections under 2028 and 2033 background conditions for AM and PM peak hours.
Appendix G contains the warrant analysis for reference.

The results indicate that auxiliary right-turn lanes are not warranted at any of the study area intersections under 2028 and 2033 background conditions during the AM and PM peak hours.

[13] Region of Durham, *Design Specifications for Roads, Structures and Entranceways*, 2025.
[14] Durham Region, *Right Turn Lane Design Guideline – Typical (S-300.050),* 2018.

TABLE 4.3: RIGHT-TURN LANE WARRANT – BACKGROUND TRAFFIC CONDITIONS

Intersection	Parameters	Background Scenario Year and Time Period							
		2028 AM		2028 PM		2033 AM		2033 PM	
Highway 7/12 & Reach St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	221	336	318	449	233	350	333	471
	Right Turning Traffic	87	83	121	129	92	86	127	135
	Warranted	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
	Storage Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deceleration Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Taper Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Old Simcoe Rd & Reach St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	372	435	511	411	390	456	536	432
	Right Turning Traffic	105	56	114	40	110	59	120	42
	Warranted	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
	Storage Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deceleration Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Taper Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Simcoe St & Reach St/Coulter St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	340	74	563	65	356	79	591	69
	Right Turning Traffic	226	6	307	6	237	7	322	7
	Warranted	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
	Storage Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deceleration Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Taper Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Driveway 4 & Reach St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	N/A	433	N/A	492	N/A	453	N/A	516
	Right Turning Traffic	N/A	43	N/A	19	N/A	43	N/A	19
	Warranted	**N/A**	**NO**	**N/A**	**NO**	**N/A**	**NO**	**N/A**	**NO**
	Storage Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deceleration Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Taper Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

4.5.3 Traffic Signal Warrant Analysis

A signal warrant analysis was conducted to determine whether the future background traffic volumes would warrant consideration of traffic signal control at the intersection of Driveway 4 and Reach Street.

As we understand from correspondence from Durham Region, the spacing/location of Driveway 4 to serve the future Water Tower and Existing Waste Transfer Station was located approximately 447 metres west of Sherrington Drive with anticipation the intersection with Reach Street would be signalized.

The warrant analysis was conducted in accordance with Ontario Traffic Manual (OTM) *Book 12 – Traffic Signals*, using Justification 7, which is based on projected volumes (where the minimum requirements are increased to be met for 120% for projected volumes).[15] The warrant was assessed for 2028 and 2033 traffic conditions.

Appendix H contains the traffic signal control warrant analysis for reference.

The results indicate under 2028 and 2033 background traffic conditions that traffic signals are not warranted for installation.

4.6 Future Background Traffic Operations

To assess the operating conditions for 2028 and 2033 background traffic conditions during the study peak hours, an operational analysis was undertaken using the same methodology, parameters, lane arrangements, and traffic control devices as in the analysis of existing conditions. It is noted existing signal timing plans have been maintained.

Table 4.4 and **Table 4.5** summarize the results of the operational analysis for 2028 background conditions (without the proposed development) for the weekday AM and PM peak hours.

Error! Reference source not found.**Table 4.6** and **Table 4.7** summarize the results of the operational analysis for 2033 background conditions (without the proposed development) for the weekday AM and PM peak hours.

Appendix I contains the detailed Synchro 12 reports.

[15] Ontario Traffic Manual (OTM), *Book 12 – Traffic Signals*, 2012.

Under 2028 background conditions, the study area intersections are forecast to continue operating at acceptable levels of service and with all movements within capacity under both the AM and PM peak hours.

Under 2033 background conditions, the study area intersections are forecast to continue operating at acceptable levels of service and with all movements within capacity under the AM peak hour.

Under the PM peak hour, while all movements are forecast to be within capacity, it is noted that several movements have been identified as approaching capacity.

- 2033 Background Conditions, PM peak hour:
  - At the intersection of Regional Highway 7/12 and Reach Street, the southbound left turn movement is forecast to operate at LOS E, but with an acceptable v/c ratio of 0.85.

    The westbound shared left/through/right movement is forecast to operate with a v/c ratio of 0.96.
  - At the intersection of Old Simcoe Road and Reach Street, the eastbound shared through/right movement is forecast to operate at LOS E, with a v/c ratio of 0.95.

    The westbound left turn movement is forecast to operate at LOS E, but with an acceptable v/c ratio of 0.73.

For both horizon years, all movements are expected to generally operate similar to existing conditions during the AM peak hour. No additional movements are deemed critical due to background growth and other area site traffic contributions under the AM peak hour.

For the 2033 horizon year, the operational analysis indicates forecast poor levels of service (e.g., LOS E or worse) during the PM peak hour.

The identified critical movements under 2033 background traffic conditions during the PM peak hour would trigger the need for investigating applicable mitigation measures.

It is important to note that these operational deficiencies are driven by background traffic growth and other area site traffic contributions, and are not attributable to traffic generated by the proposed development (i.e., they occur under background conditions without the site).



TABLE 4.4: 2028 BACKGROUND TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	**B**	<	C	>	**C**	B	B	B	**B**	B	B	B	**B**	**B**
			Delay	<	15	>	**15**	<	26	>	**26**	12	13	12	**13**	13	14	11	**13**	**17**
			V/C	<	0.36	>		<	0.77	>		0.24	0.35	0.08		0.30	0.42	0.00		**0.58**
			Q	<	31	>		<	62	>		19	39	9		25	46	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		78	-	48		88	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	C	C	>	**C**	D	C	>	**C**	B	B	>	**B**	B	B	>	**B**	**C**
			Delay	24	33	>	**32**	35	31	>	**32**	13	11	>	**12**	11	12	>	**12**	**24**
			V/C	0.23	0.66	>		0.57	0.61	>		0.25	0.14	>		0.11	0.22	>		**0.43**
			Q	16	78	>		37	77	>		21	16	>		11	25	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	79	-	>		49	-	>		46	-	>		49	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	A	A	>	**A**	A	A	A	**A**	**B**
			Delay	34	32	>	**32**	35	30	>	**32**	7	5	>	**6**	4	6	4	**5**	**13**
			V/C	0.49	0.34	>		0.44	0.14	>		0.38	0.22	>		0.01	0.34	0.11		**0.42**
			Q	24	25	>		14	12	>		31	27	>		1	45	6		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	120	-	>		11	-	>		71	-	>		77	-	70		
	Driveway 1 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	A		>	**A**					**A**
			Delay		0	>	**0**	<	0		**0**	0		>	**0**					**0**
			V/C		0.23	>		<	0.00			0.00		>						**0.25**
			Q		0	>		<	0			0		>						
	Driveway 2 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	A		>	**A**					**A**
			Delay		0	>	**0**	<	0		**0**	0		>	**0**					**0**
			V/C		0.23	>		<	0.00			0.00		>						**0.25**
			Q		0	>		<	0			0		>						
	Driveway 3/Driveway 4 & Reach St	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	**A**
			Delay	<	1	>	**1**	<	0	>	**0**	<	0	>	**0**	<	18	>	**18**	**2**
			V/C	<	0.03	>		<	0.00	>		<	0.00	>		<	0.22	>		**0.51**
			Q	<	1	>		<	0	>		<	0	>		<	6	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.5: 2028 BACKGROUND TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	**B**	<	C	>	**C**	B	C	B	**C**	D	B	B	**C**	**C**
			Delay	<	16	>	**16**	<	35	>	**35**	15	29	15	**24**	35	18	14	**22**	**25**
			V/C	<	0.45	>		<	0.88	>		0.22	0.84	0.16		0.74	0.49	0.00		**0.86**
			Q	<	59	>		<	129	>		16	108	11		37	53	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		81	-	46		76	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	C	D	>	**D**	E	D	>	**D**	B	B	>	**B**	B	B	>	**B**	**C**
			Delay	26	50	>	**48**	56	44	>	**46**	14	12	>	**13**	12	12	>	**12**	**34**
			V/C	0.30	0.90	>		0.60	0.68	>		0.29	0.20	>		0.16	0.16	>		**0.55**
			Q	19	136	>		32	95	>		24	22	>		15	17	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	76	-	>		54	-	>		43	-	>		45	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	A	B	>	**B**	B	B	B	**B**	**B**
			Delay	28	25	>	**26**	30	26	>	**28**	9	12	>	**11**	12	15	12	**14**	**17**
			V/C	0.76	0.32	>		0.38	0.05	>		0.45	0.54	>		0.01	0.36	0.08		**0.65**
			Q	48	24	>		16	8	>		30	93	>		2	54	8		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	96	-	>		9	-	>		72	-	>		76	-	68		
	Driveway 1 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	A		>	**A**					**A**
			Delay		0	>	**0**	<	0		**0**	0		>	**0**					**0**
			V/C		0.31	>		<	0.00			0.00		>						**0.29**
			Q		0	>		<	0			0		>						
	Driveway 2 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	A		>	**A**					**A**
			Delay		0	>	**0**	<	0		**0**	0		>	**0**					**0**
			V/C		0.31	>		<	0.00			0.00		>						**0.29**
			Q		0	>		<	0			0		>						
	Driveway 3/Driveway 4 & Reach St	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	**A**
			Delay	<	0	>	**0**	<	0	>	**0**	<	0	>	**0**	<	20	>	**20**	**1**
			V/C	<	0.02	>		<	0.00	>		<	0.00	>		<	0.14	>		**0.48**
			Q	<	0	>		<	0	>		<	0	>		<	4	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.6: 2033 BACKGROUND TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	**B**	<	C	>	**C**	B	B	B	**B**	B	B	B	**B**	**B**
			Delay	<	15	>	**15**	<	26	>	**26**	13	14	12	**13**	14	14	12	**14**	**17**
			V/C	<	0.36	>		<	0.78	>		0.26	0.38	0.08		0.33	0.45	0.00		**0.61**
			Q	<	32	>		<	66	>		20	42	9		27	49	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		77	-	48		86	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	C	C	>	**C**	D	C	>	**C**	B	B	>	**B**	B	B	>	**B**	**C**
			Delay	25	34	>	**33**	40	32	>	**34**	13	11	>	**12**	11	12	>	**12**	**25**
			V/C	0.26	0.69	>		0.64	0.64	>		0.26	0.15	>		0.11	0.23	>		**0.45**
			Q	17	82	>		45	81	>		22	18	>		12	27	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	78	-	>		41	-	>		45	-	>		48	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	A	A	>	**A**	A	A	A	**A**	**B**
			Delay	33	31	>	**32**	35	30	>	**32**	8	5	>	**6**	4	6	4	**6**	**14**
			V/C	0.49	0.35	>		0.46	0.15	>		0.42	0.23	>		0.01	0.36	0.11		**0.45**
			Q	24	26	>		14	13	>		34	29	>		2	49	6		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	120	-	>		11	-	>		68	-	>		76	-	70		
	Driveway 1 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	A		>	**A**					**A**
			Delay		0	>	**0**	<	0		**0**	0		>	**0**					**0**
			V/C		0.24	>		<	0.00			0.00		>						**0.26**
			Q		0	>		<	0			0		>						
	Driveway 2 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	A		>	**A**					**A**
			Delay		0	>	**0**	<	0		**0**	0		>	**0**					**0**
			V/C		0.24	>		<	0.00			0.00		>						**0.26**
			Q		0	>		<	0			0		>						
	Driveway 3/Driveway 4 & Reach St	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	**A**
			Delay	<	1	>	**1**	<	0	>	**0**	<	0	>	**0**	<	20	>	**20**	**2**
			V/C	<	0.03	>		<	0.00	>		<	0.00	>		<	0.24	>		**0.52**
			Q	<	1	>		<	0	>		<	0	>		<	7	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.7: 2033 BACKGROUND TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	B	<	D	>	D	B	C	B	C	E	B	B	C	C
			Delay	<	17	>	17	<	50	>	50	15	31	15	26	58	17	14	27	30
			V/C	<	0.48	>		<	0.96	>		0.23	0.86	0.17		0.85	0.50	0.00		0.91
			Q	<	62	>		<	139	>		17	117	12		42	56	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		80	-	45		71	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	C	E	>	D	E	D	>	D	B	B	>	B	B	B	>	B	D
			Delay	27	58	>	54	74	46	>	50	14	12	>	13	12	12	>	12	38
			V/C	0.33	0.95	>		0.73	0.72	>		0.30	0.22	>		0.17	0.17	>		0.58
			Q	20	146	>		37	99	>		25	24	>		16	18	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	75	-	>		49	-	>		42	-	>		44	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	C	C	C	>	C	A	B	>	B	B	B	B	B	B
			Delay	28	24	>	26	30	25	>	28	10	13	>	12	12	16	13	15	18
			V/C	0.77	0.34	>		0.40	0.05	>		0.49	0.58	>		0.01	0.38	0.09		0.68
			Q	49	23	>		17	9	>		31	99	>		2	57	9		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	95	-	>		8	-	>		71	-	>		76	-	67		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	A		>	A					A
			Delay		0	>	0	<	0		0	0		>	0					0
			V/C		0.32	>		<	0.00			0.00		>						0.30
			Q		0	>		<	0			0		>						
	Driveway 2 & Reach St	TWSC	LOS		A	>	A	<	A		A	A		>	A					A
			Delay		0	>	0	<	0		0	0		>	0					0
			V/C		0.32	>		<	0.00			0.00		>						0.30
			Q		0	>		<	0			0		>						
	Driveway 3/Driveway 4 & Reach St	TWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	C	>	C	A
			Delay	<	0	>	0	<	0	>	0	<	0	>	0	<	21	>	21	1
			V/C	<	0.02	>		<	0.00	>		<	0.00	>		<	0.15	>		0.49
			Q	<	0	>		<	0	>		<	0	>		<	4	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.6.1 Background Operations with Mitigation Measures

Based on the preceding 2033 background operations, applicable mitigation measures were reviewed for the intersections of Regional Highway 7/12 and Reach Street, as well as Old Simcoe Road and Reach Street to address the identified critical movements under future background conditions.

Based on **Section 4.5**, it was identified that certain intersection volumes would warrant provision of auxiliary turn lanes. However, from an operational perspective, some of the turn lanes would not be required. Therefore, auxiliary lanes that do not substantially improve traffic operations have been omitted from the proposed mitigation measures.

That is, signal timing adjustments were first reviewed to determine any changes in the timing splits would mitigate the reported issues.

The following mitigation measures were investigated to address the critical movements:

- Regional Highway 7/12 and Reach Street:
  - A westbound left-turn lane is warranted during the PM peak hour.
  - An eastbound left-turn lane is not technically warranted based on projected traffic volumes. However, for logical design consistency and intersection symmetry, the provision of an opposing eastbound left-turn lane is recommended.
  - Right-turn auxiliary lanes are not warranted under the analyzed conditions.
- Old Simcoe Road and Reach Street:
  - The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.
  - No geometric modifications are required under background conditions, as acceptable operations can be achieved through signal timing optimization.

Table 4.8 summarizes the 2033 background operations with mitigation measures at the two noted intersections.

Appendix J contains the detailed Synchro 12 reports.



With the implementation of the identified mitigation measures, the previously identified issues are resolved. The intersections are reported to operate at acceptable levels of service and with all movements within capacity.

TABLE 4.8: 2033 BACKGROUND TRAFFIC OPERATIONS – MITIGATION

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	B	>	**B**	B	B	>	**B**	A	A	A	**A**	A	B	A	**A**	**B**
			Delay	15	18	>	**18**	20	18	>	**19**	9	10	8	**9**	10	10	8	**10**	**13**
			V/C	0.00	0.49	>		0.55	0.47	>		0.22	0.33	0.08		0.29	0.39	0.00		**0.45**
			Q	1	34	>		26	32	>		17	34	8		22	40	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	120	-	>		105	-	>		80	-	49		91	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	C	C	>	**C**	D	C	>	**C**	B	B	>	**B**	B	B	>	**B**	**C**
			Delay	25	34	>	**33**	40	32	>	**34**	13	11	>	**12**	11	12	>	**12**	**25**
			V/C	0.26	0.69	>		0.64	0.64	>		0.26	0.15	>		0.11	0.23	>		**0.45**
			Q	17	82	>		45	81	>		22	18	>		12	27	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	78	-	>		41	-	>		45	-	>		48	-	>		
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	C	>	**C**	C	C	>	**C**	A	B	A	**B**	B	B	A	**B**	**B**
			Delay	16	21	>	**21**	25	22	>	**22**	10	17	10	**14**	13	11	9	**12**	**17**
			V/C	0.05	0.61	>		0.65	0.64	>		0.18	0.74	0.17		0.51	0.43	0.00		**0.7**
			Q	4	58	>		37	59	>		16	117	12		30	56	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	117	-	>		94	-	>		81	-	45		83	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	B	>	**B**	B	B	>	**B**	C	C	>	**C**	C	C	>	**C**	**B**
			Delay	13	20	>	**19**	15	16	>	**16**	28	23	>	**25**	24	22	>	**23**	**20**
			V/C	0.16	0.61	>		0.25	0.47	>		0.46	0.33	>		0.28	0.25	>		**0.58**
			Q	14	91	>		16	58	>		36	38	>		23	28	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	81	-	>		70	-	>		31	-	>		37	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.7 Warrant Analysis – Total Traffic Conditions

Applicable study area intersections were assessed to determine whether forecast traffic volumes would warrant the provision of auxiliary left-turn or right-turn lane under background traffic conditions.

The lane warrants for 2028 and 2033 total traffic conditions have been analyzed using the methodologies previously described under **Section 4.5**.

4.7.1 Left-Turn Lane

Table 4.9 summarizes the results of the left-turn lane warrant analysis under 2028 and 2033 total traffic conditions for AM and PM peak hours.

Appendix K contains the warrant nomographs for reference.

The results indicate auxiliary left-turn lanes are warranted at the following intersections:

- **Highway 7/Highway 12 and Reach Street:** WBL under 2028 and 2033 horizon years for both AM and PM peak hours. EBL under 2028 and 2033 horizon years for PM peak hour only.
- **Driveway 1 and Reach Street:** WBL under 2028 and 2033 horizon years for both AM and PM peak hours.
- **Driveway 2 and Reach Street:** WBL under 2028 and 2033 horizon years for both AM and PM peak hours.
- **Driveway 3/Driveway 4 and Reach Street:** WBL under 2028 and 2033 horizon years for both AM and PM peak hours. EBL under 2028 and 2033 horizon years for AM peak hour only.

TABLE 4.9: LEFT-TURN LANE WARRANT – TOTAL TRAFFIC CONDITIONS

Intersection	Parameters	Total Scenario Year and Time Period							
		2028 AM		2028 PM		2033 AM		2033 PM	
Highway 7/12 & Reach St 90 km/h Design Speed	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	249	513	365	647	261	527	380	669
	Opposing Volume	513	249	647	365	527	261	669	380
	Left Turning Traffic	1	211	11	215	1	216	11	222
	% of Left Turning Traffic	0	41	3	33	0	41	3	33
	Figure Referenced[1]	9A-19 (5%)	9A-22 (40%)	9A-19 (5%)	9A-22 (35%)	9A-19 (5%)	9A-22 (40%)	9A-19 (5%)	9A-22 (35%)
	Warranted	**NO**	**YES**	**YES**	**YES**	**NO**	**YES**	**YES**	**YES**
	Storage Length (m)	N/A	30	15	50	N/A	30	15	50
	Deceleration Length (m)	N/A	106	106	106	N/A	106	106	106
	Taper Length (m)	N/A	70	70	70	N/A	70	70	70
Driveway 1 & Reach St 90 km/h Design Speed	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	N/A	662	N/A	647	N/A	682	N/A	671
	Opposing Volume	N/A	481	N/A	708	N/A	499	N/A	732
	Left Turning Traffic	N/A	82	N/A	36	N/A	82	N/A	36
	% of Left Turning Traffic	N/A	12	N/A	6	N/A	12	N/A	5
	Figure Referenced[1]	N/A	9A-19 (10%)	N/A	9A-19 (5%)	N/A	9A-19 (10%)	N/A	9A-19 (5%)
	Warranted	**N/A**	**YES**	**N/A**	**YES**	**N/A**	**YES**	**N/A**	**YES**
	Storage Length (m)	N/A	30	N/A	25	N/A	30	N/A	25
	Deceleration Length (m)	N/A	106	N/A	106	N/A	106	N/A	106
	Taper Length (m)	N/A	70	N/A	70	N/A	70	N/A	70

Driveway 2 & Reach St 90 km/h Design Speed	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	N/A	583	N/A	629	N/A	603	N/A	653
	Opposing Volume	N/A	453	N/A	775	N/A	471	N/A	799
	Left Turning Traffic	N/A	34	N/A	68	N/A	34	N/A	68
	% of Left Turning Traffic	N/A	6	N/A	11	N/A	6	N/A	10
	Figure Referenced[1]	N/A	9A-19 (5%)	N/A	9A-19 (10%)	N/A	9A-19 (5%)	N/A	9A-19 (10%)
	Warranted	**N/A**	**YES**	**N/A**	**YES**	**N/A**	**YES**	**N/A**	**YES**
	Storage Length (m)	N/A	15	N/A	40	N/A	15	N/A	40
	Deceleration Length (m)	N/A	106	N/A	106	N/A	106	N/A	106
	Taper Length (m)	N/A	70	N/A	70	N/A	70	N/A	70
Driveway 3/4 & Reach St 90 km/h Design Speed	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	481	627	689	755	499	647	713	779
	Opposing Volume	627	481	755	689	647	499	779	713
	Left Turning Traffic	28	78	16	159	28	78	16	159
	% of Left Turning Traffic	6	12	2	21	6	12	2	20
	Figure Referenced[1]	9A-19 (5%)	9A-19 (10%)	N/A	9A-20 (20%)	9A-19 (5%)	9A-19 (10%)	N/A	9A-20 (20%)
	Warranted	**YES**	**YES**	**NO**	**YES**	**YES**	**YES**	**NO**	**YES**
	Storage Length (m)	15	25	N/A	65	15	30	N/A	65
	Deceleration Length (m)	106	106	N/A	106	106	106	N/A	106
	Taper Length (m)	70	70	N/A	70	70	70	N/A	70

[1]Based on MTO Design Supplement for TAC Geometric Design Guide for Canadian Road – June 2017

4.7.2 Right-Turn Lane Warrant

Table 4.10 summarizes the results of the right-turn lane warrant analysis for all the study intersections under 2028 and 2033 total traffic conditions for AM and PM peak hours.

Appendix L contains the warrant analysis for reference.

The results indicate that auxiliary right-turn lanes are warranted at the following intersections under total traffic conditions:

- **Old Simcoe Road and Reach Street:** EBR under 2028 and 2033 horizon years for PM peak hour.
- **Simcoe Street and Reach Street/Coulter Street:** EBR direction under 2028 and 2033 horizon years for PM peak hour.
- **Driveway 1 and Reach Street:** EBR under 2028 and 2033 horizon years for PM peak hour.
- **Driveway 2 and Reach Street:** EBR under 2028 and 2033 horizon years for PM peak hour.

TABLE 4.10: RIGHT-TURN LANE WARRANT – TOTAL TRAFFIC CONDITIONS

Intersection	Parameters	Total Scenario Year and Time Period							
		2028 AM		2028 PM		2033 AM		2033 PM	
Highway 7/12 & Reach St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	249	513	365	647	261	527	380	669
	Right Turning Traffic	87	137	121	218	92	140	127	224
	Warranted	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
	Storage Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deceleration Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Taper Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Old Simcoe Rd & Reach St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	655	569	768	595	673	590	793	616
	Right Turning Traffic	168	56	148	40	173	59	154	42
	Warranted	**NO**	**NO**	**YES**	**NO**	**NO**	**NO**	**YES**	**NO**
	Storage Length (m)	N/A	N/A	20	N/A	N/A	N/A	20	N/A
	Deceleration Length (m)	N/A	N/A	40	N/A	N/A	N/A	40	N/A
	Taper Length (m)	N/A	N/A	55	N/A	N/A	N/A	55	N/A
Simcoe St & Reach St/Coulter St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	527	84	760	74	543	89	788	78
	Right Turning Traffic	345	6	393	6	356	7	408	7
	Warranted	**NO**	**NO**	**YES**	**NO**	**NO**	**NO**	**YES**	**NO**
	Storage Length (m)	N/A	N/A	20	N/A	N/A	N/A	20	N/A
	Deceleration Length (m)	N/A	N/A	40	N/A	N/A	N/A	40	N/A
	Taper Length (m)	N/A	N/A	55	N/A	N/A	N/A	55	N/A

Driveway 1 & Reach St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	481	N/A	708	N/A	499	N/A	732	N/A
	Right Turning Traffic	54	N/A	32	N/A	54	N/A	32	N/A
	Warranted	**NO**	**N/A**	**YES**	**N/A**	**NO**	**N/A**	**YES**	**N/A**
	Storage Length (m)	N/A	N/A	No	N/A	N/A	N/A	No	N/A
	Deceleration Length (m)	N/A	N/A	No	N/A	N/A	N/A	No	N/A
	Taper Length (m)	N/A	N/A	75	N/A	N/A	N/A	75	N/A
Driveway 2 & Reach St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	453	N/A	775	N/A	471	N/A	799	N/A
	Right Turning Traffic	49	N/A	134	N/A	49	N/A	134	N/A
	Warranted	**NO**	**N/A**	**YES**	**N/A**	**NO**	**N/A**	**YES**	**N/A**
	Storage Length (m)	N/A	N/A	20	N/A	N/A	N/A	20	N/A
	Deceleration Length (m)	N/A	N/A	70	N/A	N/A	N/A	70	N/A
	Taper Length (m)	N/A	N/A	75	N/A	N/A	N/A	75	N/A
Driveway 3/4 & Reach St Type B Rural Arterial (two-lane)	Approach Direction	EB	WB	EB	WB	EB	WB	EB	WB
	Advancing Volume	481	627	689	755	499	647	713	779
	Right Turning Traffic	28	43	16	19	28	43	16	19
	Warranted	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
	Storage Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deceleration Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Taper Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

4.7.3 Traffic Signal Warrant Analysis

A signal warrant analysis was conducted to determine whether the future total traffic volumes would warrant consideration of traffic signal control at the intersection of Driveway 3/4 and Reach Street.

The warrant analysis was conducted in accordance with OTM *Book 12 – Traffic Signals*, using Justification 7, which is based on projected volumes (where the minimum requirements are increased to be met for 120% for projected volumes). The warrant was assessed for 2028 and 2033 traffic conditions.

Appendix M contains the traffic signal control warrant analysis for reference.

The results indicate that a traffic signal might be warranted under both the 2028 and 2033 total traffic conditions. However, the total 2028 and 2033 traffic volumes do not fully satisfy the minimum justification thresholds required to definitively warrant the installation of traffic control signals.

4.8 Future Total Traffic Operations

To assess the operating conditions for 2028 and 2033 total traffic conditions during the study peak hours, an operational analysis was undertaken using the same methodology, parameters, lane arrangements, and traffic control devices as in the analysis of existing conditions. It is noted existing signal timing plans have been maintained.

Table 4.11 and **Table 4.12** summarize the results of the operational analysis for 2028 total conditions (with the proposed development) for the weekday AM and PM peak hours.

Table 4.13 and **Table 4.14** summarize the results of the operational analysis for 2033 total conditions (with the proposed development) for the weekday AM and PM peak hours.

Appendix N contains the detailed Synchro 12 reports.

With the addition of site-generated traffic, several critical movements are identified the study area intersections.

The following is noted for 2028 total traffic conditions:

- Highway 7/12 and Reach Street
  - Under the AM peak hour, the westbound shared left/through/right movement is forecast to operate at LOS E with a v/c ratio of 1.03.
  - Under the PM peak hour, the westbound shared left/through/right movement is forecast to operate at LOS E with a v/c ratio of 1.49, and the southbound left turn movement operates at LOS F with a v/c ratio of 0.97.
- Old Simcoe Road and Reach Street
  - Under the AM peak hour, the eastbound shared through/right movement reports a LOS F with a v/c of 1.20, and the westbound left turn movement reports a LOS F with a v/c of 1.65
  - Under the PM peak hour, the eastbound left turn, and shared through/right movements both are characterized by LOS F, with v/c ratios of 1.15 and 1.37, respectively. The westbound left turn, and shared through/right movements both are characterized by LOS F with v/c ratios of 0.96 and 1.06, respectively.
- Simcoe Street and Reach Street
  - Under the PM peak hour, the eastbound left turn movement reports a LOS C with a v/c ratio of 0.97.
- Driveway 1 (West Access) and Reach Street
  - Under the PM peak hour, the northbound shared left/right movement reports a LOS F with a v/c of 0.91.
- Driveway 2 (Central Access) and Reach Street
  - Under the AM peak hour, the northbound shared left/right movement reports a LOS E and v/c ratio of 0.71.
  - Under the PM peak hour, the northbound shared left/right movement reports a LOS F and v/c ratio of 0.92.
- Driveway 3/Driveway 4 (East Access) and Reach Street
  - Under the AM peak hour, the northbound and southbound shared left/through/right movements are characterized by LOS E with a v/c of 0.79, and LOS F with a v/c of 0.80, respectively.

- Under the PM peak hour, the northbound and southbound shared left/through/right movements are both characterized by LOS F, with v/c ratios of 0.98 and 0.63, respectively.

The following is noted for 2033 total traffic conditions:

- Highway 7/12 and Reach Street
  - Under the AM peak hour, the westbound shared left/through/right movement is forecast to operate at LOS F with a v/c ratio of 1.08.
  - Under the PM peak hour, the westbound shared left/through/right movement is forecast to operate at LOS F with a v/c ratio of 1.66, and the southbound left turn movement operates at LOS F with a v/c ratio of 1.00.
- Old Simcoe Road and Reach Street
  - Under the AM peak hour, the eastbound shared through/right movement reports a LOS F with a v/c of 1.23, the westbound left turn movement reports a LOS F with a v/c of 1.65, and the westbound shared through/right movement reports a LOS D with a v/c of 0.91.
  - Under the PM peak hour, the eastbound left turn, and shared through/right movements both are characterized by LOS F, with v/c ratios of 1.20 and 1.41, respectively. The westbound left turn, and shared through/right movements both are characterized by LOS F with v/c ratios of 1.01 and 1.09, respectively.
- Simcoe Street and Reach Street
  - Under the PM peak hour, the eastbound left turn movement reports a LOS C with a v/c ratio of 1.00.
- Driveway 1 (West Access) and Reach Street
  - Under the PM peak hour, the northbound shared left/right movement reports a LOS F with a v/c of 0.96.
- Driveway 2 (Central Access) and Reach Street
  - Under the AM peak hour, the northbound shared left/right movement reports a LOS E and v/c ratio of 0.75.
  - Under the PM peak hour, the northbound shared left/right movement reports a LOS F and v/c ratio of 0.99.
- Driveway 3/Driveway 4 (East Access) and Reach Street

- Under the AM peak hour, the northbound and southbound shared left/through/right movements are both characterized by LOS F with a v/c ratios of 0.83 and 0.87, respectively.
- Under the PM peak hour, the northbound and southbound shared left/through/right movements are both characterized by LOS F, with v/c ratios of 1.05 and 0.70, respectively.

Overall, traffic operations remain relatively similar to background traffic conditions with the addition of site-generated traffic. The critical movements identified under background conditions would persist, although they may be slightly exacerbated with the planned development.

The identified critical movements would trigger the need for investigating applicable mitigation measures for both the AM and PM peak hours.

TABLE 4.11: 2028 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	B	<	E	>	E	B	B	B	B	B	B	B	B	C
			Delay	<	14	>	14	<	69	>	69	16	17	15	16	18	18	15	18	33
			V/C	<	0.35	>		<	1.03	>		0.27	0.40	0.12		0.48	0.48	0.00		0.78
			Q	<	36	>		<	135	>		19	39	11		35	46	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		78	-	46		78	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	D	F	>	F	F	D	>	F	B	B	>	B	B	B	>	B	F
			Delay	55	139	>	128	373	46	>	113	14	11	>	13	11	13	>	12	88
			V/C	0.71	1.20	>		1.65	0.88	>		0.32	0.14	>		0.11	0.26	>		0.87
			Q	39	193	>		66	134	>		27	16	>		11	28	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	56	-	>		20	-	>		40	-	>		49	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	C	C	C	>	C	B	A	>	A	A	A	A	A	B
			Delay	34	29	>	30	31	26	>	28	12	7	>	10	5	8	6	7	16
			V/C	0.62	0.42	>		0.44	0.13	>		0.55	0.24	>		0.01	0.37	0.16		0.58
			Q	34	28	>		13	13	>		59	35	>		2	58	10		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	110	-	>		12	-	>		43	-	>		76	-	66		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	C		>	C					A
			Delay		0	>	0	<	2		2	19		>	19					2
			V/C		0.31	>		<	0.09			0.15		>						0.74
			Q		0	>		<	2			4		>						
	Driveway 2 & Reach St	TWSC	LOS		A	>	A	<	A		A	E		>	E					A
			Delay		0	>	0	<	1		1	43		>	43					7
			V/C		0.29	>		<	0.03			0.71		>						0.74
			Q		0	>		<	1			38		>						
	Driveway 3/Driveway 4 & Reach St	TWSC	LOS	<	A	>	A	<	A	>	A	<	E	>	E	<	F	>	F	C
			Delay	<	1	>	1	<	2	>	2	<	48	>	48	<	122	>	122	15
			V/C	<	0.03	>		<	0.08	>		<	0.79	>		<	0.80	>		0.76
			Q	<	1	>		<	2	>		<	48	>		<	33	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.12: 2028 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	B	<	F	>	F	B	C	B	C	F	B	B	D	F
			Delay	<	20	>	20	<	254	>	254	15	24	15	20	82	16	13	39	87
			V/C	<	0.56	>		<	1.49	>		0.20	0.77	0.26		0.97	0.45	0.00		1.22
			Q	<	70	>		<	214	>		16	108	14		61	53	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		81	-	43		52	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	F	F	>	F	F	F	>	F	B	B	>	B	B	B	>	B	F
			Delay	177	208	>	205	130	96	>	100	16	12	>	14	12	12	>	12	114
			V/C	1.15	1.37	>		0.96	1.06	>		0.40	0.20	>		0.16	0.19	>		0.82
			Q	48	238	>		32	176	>		35	22	>		15	19	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	47	-	>		54	-	>		32	-	>		45	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	D	>	C	C	C	>	C	C	B	>	B	B	B	B	B	C
			Delay	27	35	>	32	31	23	>	27	21	15	>	17	13	17	14	16	22
			V/C	0.97	0.40	>		0.49	0.06	>		0.75	0.58	>		0.01	0.37	0.13		0.88
			Q	54	24	>		21	10	>		47	93	>		2	54	10		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	90	-	>		4	-	>		55	-	>		76	-	66		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	F		>	F					B
			Delay		0	>	0	<	1		1	87		>	87					10
			V/C		0.45	>		<	0.05			0.91		>						0.79
			Q		0	>		<	1			56		>						
	Driveway 2 & Reach St	TWSC	LOS		A	>	A	<	A		A	F		>	F					B
			Delay		0	>	0	<	2		2	110		>	110					10
			V/C		0.50	>		<	0.09			0.92		>						0.93
			Q		0	>		<	2			51		>						
	Driveway 3/Driveway 4 & Reach St	TWSC	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	C
			Delay	<	0	>	0	<	5	>	5	<	120	>	120	<	135	>	135	16
			V/C	<	0.02	>		<	0.20	>		<	0.98	>		<	0.63	>		0.96
			Q	<	0	>		<	6	>		<	57	>		<	20	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.13: 2033 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	B	>	B	<	F	>	F	B	B	B	B	B	B	B	B	D
			Delay	<	14	>	14	<	81	>	81	16	17	15	16	18	18	15	18	37
			V/C	<	0.36	>		<	1.08	>		0.29	0.42	0.12		0.50	0.50	0.00		0.81
			Q	<	38	>		<	141	>		20	42	11		37	49	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		77	-	46		76	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	E	F	>	F	F	D	>	F	B	B	>	B	B	B	>	B	F
			Delay	72	151	>	141	411	50	>	125	14	11	>	13	11	13	>	12	96
			V/C	0.81	1.23	>		1.74	0.91	>		0.34	0.15	>		0.11	0.27	>		0.92
			Q	42	200	>		69	140	>		29	18	>		12	30	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	53	-	>		17	-	>		38	-	>		48	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	C	C	C	>	C	B	A	>	B	A	A	A	A	B
			Delay	34	29	>	30	32	26	>	28	14	7	>	10	5	8	6	8	16
			V/C	0.63	0.43	>		0.46	0.14	>		0.60	0.25	>		0.01	0.39	0.17		0.62
			Q	34	30	>		13	13	>		73	36	>		2	62	10		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	110	-	>		12	-	>		29	-	>		76	-	66		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	C		>	C					A
			Delay		0	>	0	<	2		2	20		>	20					2
			V/C		0.32	>		<	0.09			0.15		>						0.76
			Q		0	>		<	2			4		>						
	Driveway 2 & Reach St	TWSC	LOS		A	>	A	<	A		A	E		>	E					A
			Delay		0	>	0	<	1		1	49		>	49					8
			V/C		0.30	>		<	0.04			0.75		>						0.75
			Q		0	>		<	1			42		>						
	Driveway 3/Driveway 4 & Reach St	TWSC	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	C
			Delay	<	1	>	1	<	2	>	2	<	56	>	56	<	144	>	144	17
			V/C	<	0.03	>		<	0.08	>		<	0.83	>		<	0.87	>		0.77
			Q	<	1	>		<	2	>		<	53	>		<	36	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.14: 2033 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	<	C	>	C	<	F	>	F	B	C	B	B	F	B	B	D	F
			Delay	<	22	>	22	<	332	>	332	14	24	14	20	91	16	13	41	108
			V/C	<	0.60	>		<	1.66	>		0.21	0.77	0.26		1.00	0.45	0.00		1.3
			Q	<	74	>		<	225	>		17	117	14		64	56	0		
			Stor.	<	-	>		<	-	>		97	-	57		113	-	63		
			Avail.	<	-	>		<	-	>		80	-	43		49	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	F	F	>	F	F	F	>	F	B	B	>	B	B	B	>	B	F
			Delay	194	227	>	223	144	107	>	112	16	12	>	14	12	12	>	12	124
			V/C	1.20	1.41	>		1.01	1.09	>		0.42	0.22	>		0.17	0.20	>		0.84
			Q	50	247	>		32	184	>		36	24	>		16	20	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	45	-	>		54	-	>		31	-	>		44	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	D	>	D	D	C	>	C	C	B	>	B	B	B	B	B	C
			Delay	34	36	>	35	40	23	>	32	24	15	>	19	13	17	14	16	24
			V/C	1.00	0.41	>		0.60	0.06	>		0.79	0.61	>		0.01	0.39	0.13		0.92
			Q	55	24	>		24	11	>		53	99	>		2	57	11		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	89	-	>		1	-	>		49	-	>		76	-	65		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	F		>	F					B
			Delay		0	>	0	<	1		1	104		>	104					12
			V/C		0.47	>		<	0.05			0.96		>						0.80
			Q		0	>		<	1			61		>						
	Driveway 2 & Reach St	TWSC	LOS		A	>	A	<	A		A	F		>	F					B
			Delay		0	>	0	<	2		2	132		>	132					12
			V/C		0.51	>		<	0.10			0.99		>						0.95
			Q		0	>		<	2			55		>						
	Driveway 3/Driveway 4 & Reach St	TWSC	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	C
			Delay	<	0	>	0	<	5	>	5	<	148	>	148	<	162	>	162	19
			V/C	<	0.02	>		<	0.20	>		<	1.05	>		<	0.70	>		0.99
			Q	<	0	>		<	6	>		<	63	>		<	22	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.8.1 Total Operations with Mitigation Measures

Based on the preceding 2028 and 2033 total operations, applicable mitigation measures were reviewed for the study area intersections reporting critical movements (i.e., poor level of service and/or capacity issues) under future total conditions.

Based on **Section 4.5** and **Section 4.7**, it was identified that certain intersection volumes would warrant provision of auxiliary turn lanes. However, from an operational perspective, some of the turn lanes would not be required. Therefore, auxiliary lanes that do not substantially improve traffic operations have been omitted from the proposed mitigation measures.

That is, signal timing adjustments were first reviewed to determine any changes in the timing splits would mitigate the reported issues.

Section 4.7 identified that a traffic signal might be warranted at the intersection of Driveway 3/Driveway 4 (East Access) and Reach Street under both 2028 and 2033 total traffic conditions.

The following mitigation measures were investigated to address the critical movements:

- Regional Highway 7/12 and Reach Street:
  - A westbound left-turn lane is warranted during the PM peak hour, similar to background traffic conditions.
  - An eastbound left-turn lane is not technically warranted based on projected traffic volumes. However, for logical design consistency and intersection symmetry, the provision of an opposing eastbound left-turn lane is recommended.
  - Right-turn auxiliary lanes are not warranted under the analyzed conditions.
- Old Simcoe Road and Reach Street:
  - The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.
  - No geometric modifications are required under total conditions, as acceptable operations can be achieved through signal timing optimization.
- Simcoe Street and Reach Street/Coulter Street:

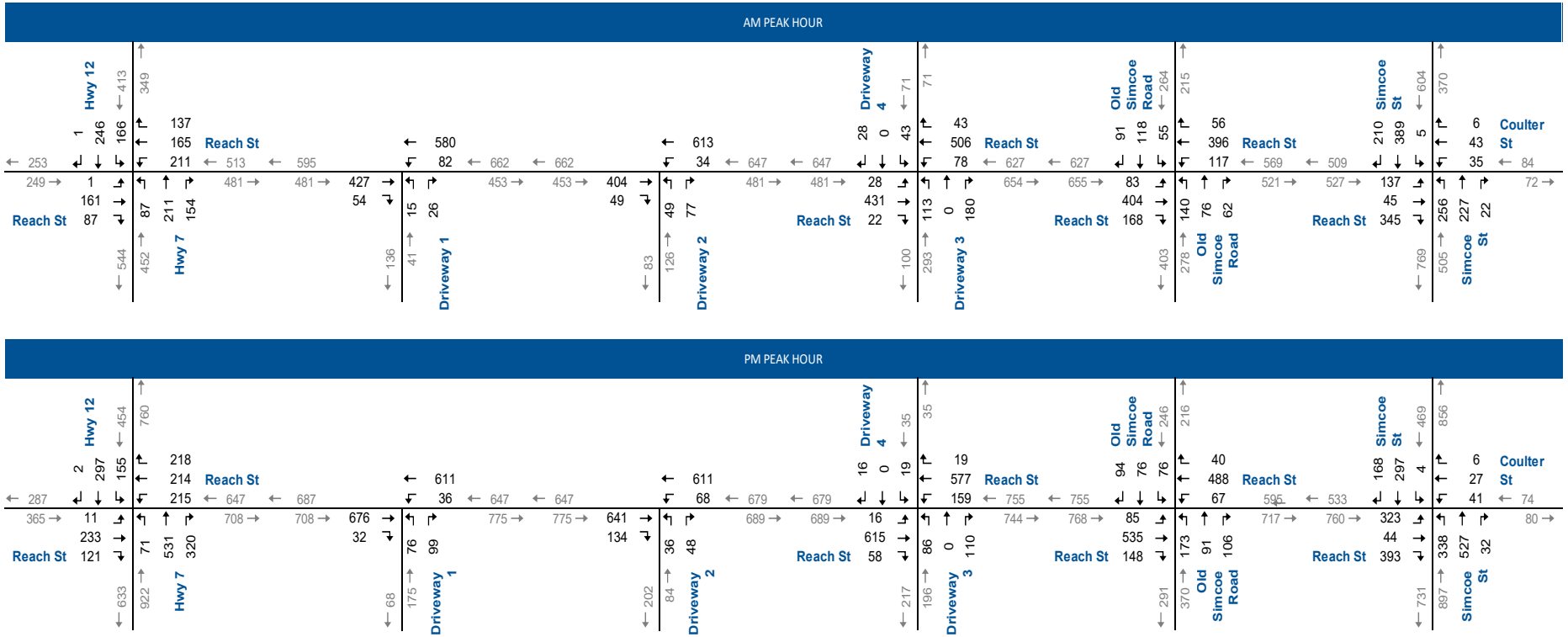
- The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.
- No geometric modifications are required under total conditions, as acceptable operations can be achieved through signal timing optimization.

- Driveway 1 (West Access) and Reach Street:
  - The identified critical movements can be mitigated by providing two outbound lanes in the northbound direction.
- Driveway 2 (Central Access) and Reach Street:
  - See additional discussion below.
- Driveway 3/Driveway 4 (East Access) and Reach Street:
  - The identified critical movements can be mitigated by installing a traffic signal.

The introduction of a traffic signal at the intersection of Driveway 3/Driveway 4 and Reach Street is anticipated to result in a reassignment of site traffic volumes. It is anticipated that the assignment of vehicles destined to the west would prefer to perform outbound left turn movements at a controlled signalized intersection, where movements are protected and more comfortable, rather than at Driveway 2, where left turns must be completed across opposing traffic.

Figure 4.5 illustrates the 2028 forecast total traffic volumes under the AM and PM peak hours, incorporating traffic reassignment associated with the proposed traffic signal at the intersection of Driveway 3/Driveway 4 (East Access) and Reach Street.

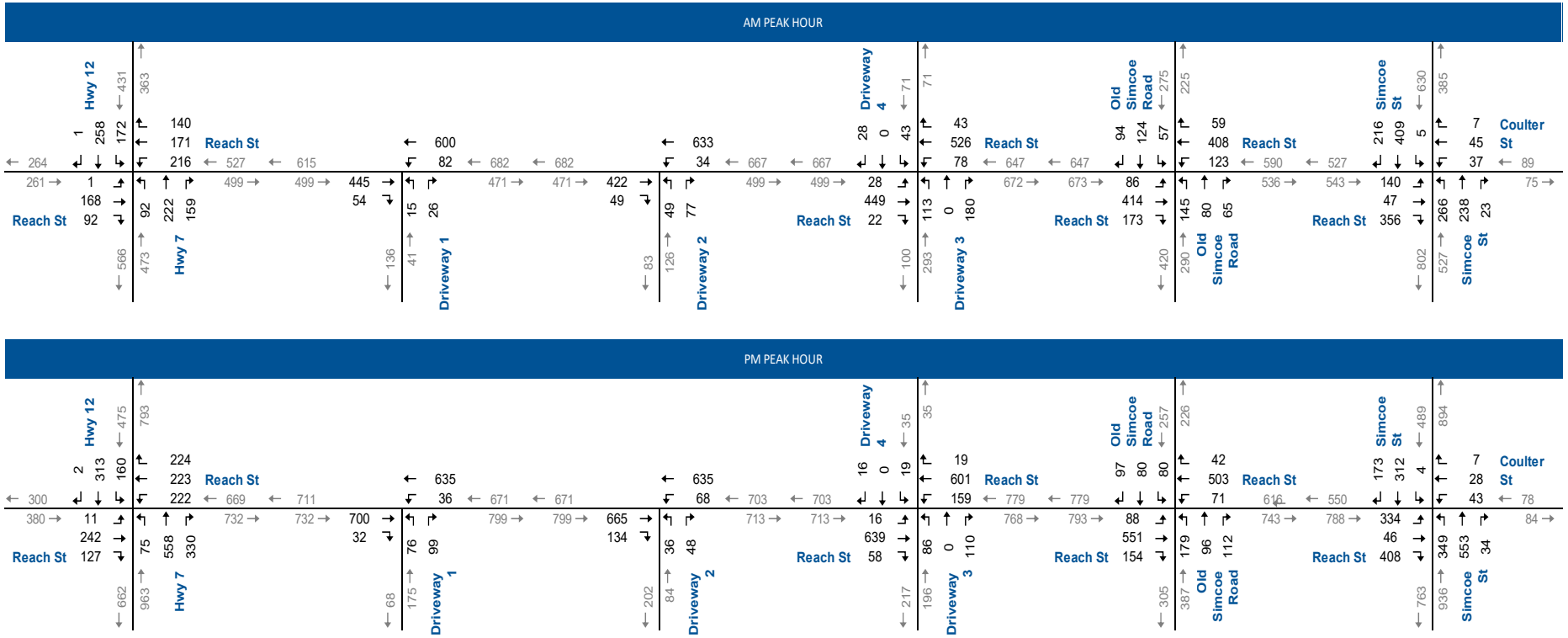
Figure 4.6 illustrates the 2033 forecast total traffic volumes under the AM and PM peak hours, incorporating traffic reassignment associated with the proposed traffic signal at the intersection of Driveway 3/Driveway 4 (East Access) and Reach Street.



2028 Total Traffic with Reassignment AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 4.5



2033 Total Traffic with Reassignment AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 4.6

Table 4.15 and **Table 4.16** summarize the 2028 total operations with mitigation measures.

Table 4.17 and **Table 4.18** summarize the 2033 total operations with mitigation measures.

Appendix O contains the detailed Synchro 12 reports.

With the implementation of the identified mitigation measures, the previously identified issues are resolved. The intersections are reported to operate at acceptable levels of service and with all movements within capacity.

TABLE 4.15: 2028 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR – MITIGATION

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	B	>	**B**	C	B	>	**C**	B	B	B	**B**	B	B	B	**B**	**B**
			Delay	14	16	>	**16**	25	18	>	**21**	12	12	11	**12**	13	13	10	**13**	**16**
			V/C	0.00	0.43	>		0.72	0.54	>		0.23	0.35	0.12		0.41	0.41	0.00		**0.55**
			Q	1	36	>		43	43	>		19	39	11		35	46	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	120	-	>		88	-	>		78	-	46		78	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	C	>	**C**	C	B	>	**B**	C	C	>	**C**	C	C	>	**C**	**C**
			Delay	13	23	>	**22**	20	16	>	**17**	33	23	>	**28**	23	26	>	**26**	**22**
			V/C	0.25	0.75	>		0.49	0.54	>		0.56	0.22	>		0.18	0.41	>		**0.71**
			Q	17	120	>		30	80	>		42	27	>		17	45	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	78	-	>		56	-	>		25	-	>		43	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	B	A	>	**A**	A	A	A	**A**	**B**
			Delay	34	29	>	**30**	31	26	>	**28**	12	7	>	**10**	5	8	6	**7**	**16**
			V/C	0.62	0.42	>		0.44	0.13	>		0.55	0.24	>		0.01	0.37	0.16		**0.58**
			Q	34	28	>		13	13	>		59	35	>		2	58	10		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	110	-	>		12	-	>		43	-	>		76	-	66		
	Driveway 1 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	D		B	**C**					**A**
			Delay		0	>	**0**	<	2		**2**	30		12	**18**					**2**
			V/C		0.31	>		<	0.09			0.10		0.05						**0.74**
			Q		0	>		<	2			2		1						
	Driveway 2 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	D		>	**D**					**A**
			Delay		0	>	**0**	<	1		**1**	26		>	**26**					**3**
			V/C		0.29	>		<	0.03			0.45		>						**0.74**
			Q		0	>		<	1			17		>						
	Driveway 3/Driveway 4 & Reach St	TCS	LOS	A	B	>	**B**	A	B	>	**B**	<	D	>	**D**	<	C	>	**C**	**B**
			Delay	9	12	>	**12**	10	14	>	**13**	<	39	>	**39**	<	26	>	**26**	**19**
			V/C	0.08	0.45	>		0.19	0.55	>		<	0.68	>		<	0.14	>		**0.59**
			Q	6	67	>		14	87	>		<	73	>		<	14	>		
			Stor.	121	-	>		171	-	>		<	-	>		<	-	>		
			Avail.	115	-	>		157	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.16: 2028 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR – MITIGATION

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	C	>	C	D	C	>	C	B	C	B	B	D	B	B	C	C
			Delay	16	20	>	20	46	25	>	32	13	20	13	17	42	14	12	24	23
			V/C	0.06	0.58	>		0.86	0.72	>		0.18	0.73	0.26		0.83	0.43	0.00		0.84
			Q	5	67	>		71	84	>		16	108	14		58	53	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	116	-	>		60	-	>		81	-	43		55	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	C	>	C	B	B	>	B	D	C	>	C	C	C	>	C	C
			Delay	13	25	>	23	14	13	>	13	43	27	>	34	27	27	>	27	23
			V/C	0.28	0.81	>		0.36	0.63	>		0.71	0.35	>		0.30	0.34	>		0.82
			Q	18	156	>		8	54	>		60	40	>		23	34	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	77	-	>		78	-	>		7	-	>		37	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	B	>	C	C	B	>	C	C	B	>	C	C	C	C	C	C
			Delay	30	16	>	22	22	20	>	21	23	19	>	21	21	29	22	27	22
			V/C	0.81	0.38	>		0.29	0.05	>		0.78	0.64	>		0.02	0.55	0.13		0.85
			Q	64	14	>		14	9	>		72	117	>		3	75	15		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	80	-	>		11	-	>		30	-	>		75	-	61		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	F		C	E					A
			Delay		0	>	0	<	1		1	73		17	41					5
			V/C		0.45	>		<	0.05			0.64		0.26						0.72
			Q		0	>		<	1			26		8						
	Driveway 2 & Reach St	TWSC	LOS		A		A	<	A		A	F		>	F					A
			Delay		0		0	<	2		2	56		>	56					4
			V/C		0.50			<	0.09			0.58		>						0.93
			Q		0			<	2			23		>						
	Driveway 3/Driveway 4 & Reach St	TCS	LOS	A	A	>	A	A	A	>	A	<	D	>	D	<	C	>	C	B
			Delay	5	9	>	9	10	8	>	8	<	44	>	44	<	31	>	31	13
			V/C	0.04	0.57	>		0.44	0.51	>		<	0.70	>		<	0.03	>		0.6
			Q	3	97	>		29	80	>		<	47	>		<	6	>		
			Stor.	121	-	>		171	-	>		<	-	>		<	-	>		
			Avail.	118	-	>		142	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.17: 2033 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR – MITIGATION

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	B	>	**B**	C	B	>	**C**	B	B	B	**B**	B	B	B	**B**	**B**
			Delay	13	16	>	**16**	25	17	>	**21**	12	13	12	**12**	14	14	11	**14**	**16**
			V/C	0.00	0.44	>		0.72	0.54	>		0.25	0.37	0.12		0.44	0.44	0.00		**0.57**
			Q	1	38	>		45	45	>		20	42	11		37	49	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	120	-	>		86	-	>		77	-	46		76	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	C	>	**C**	C	B	>	**B**	C	C	>	**C**	C	C	>	**C**	**C**
			Delay	14	24	>	**22**	22	17	>	**18**	35	23	>	**29**	23	27	>	**26**	**23**
			V/C	0.26	0.77	>		0.54	0.56	>		0.59	0.24	>		0.19	0.43	>		**0.74**
			Q	18	126	>		34	83	>		44	29	>		17	47	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	77	-	>		52	-	>		23	-	>		43	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	B	A	>	**B**	A	A	A	**A**	**B**
			Delay	34	29	>	**30**	32	26	>	**28**	14	7	>	**10**	5	8	6	**8**	**16**
			V/C	0.63	0.43	>		0.46	0.14	>		0.60	0.25	>		0.01	0.39	0.17		**0.62**
			Q	34	30	>		13	13	>		73	36	>		2	62	10		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	110	-	>		12	-	>		29	-	>		76	-	66		
	Driveway 1 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	D		B	**C**					**A**
			Delay		0	>	**0**	<	2		**2**	31		12	**19**					**2**
			V/C		0.32	>		<	0.09			0.10		0.05						**0.76**
			Q		0	>		<	2			3		1						
	Driveway 2 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	D		>	**D**					**A**
			Delay		0	>	**0**	<	1		**1**	28		>	**28**					**3**
			V/C		0.30	>		<	0.04			0.48		>						**0.75**
			Q		0	>		<	1			18		>						
	Driveway 3/Driveway 4 & Reach St	TCS	LOS	A	B	>	**B**	A	B	>	**B**	<	D	>	**D**	<	C	>	**C**	**B**
			Delay	9	12	>	**12**	10	14	>	**14**	<	39	>	**39**	<	26	>	**26**	**19**
			V/C	0.09	0.47	>		0.19	0.57	>		<	0.68	>		<	0.14	>		**0.6**
			Q	6	70	>		14	92	>		<	73	>		<	14	>		
			Stor.	121	-	>		171	-	>		<	-	>		<	-	>		
			Avail.	115	-	>		157	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.18: 2033 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR – MITIGATION

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	C	>	C	E	C	>	D	B	C	B	B	E	B	B	C	C
			Delay	17	22	>	22	66	27	>	40	13	22	14	18	63	15	12	31	27
			V/C	0.07	0.60	>		0.95	0.74	>		0.20	0.75	0.26		0.92	0.44	0.00		0.93
			Q	5	71	>		77	88	>		16	117	14		63	56	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	116	-	>		54	-	>		81	-	43		50	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	C	>	C	B	B	>	B	D	C	>	D	C	C	>	C	C
			Delay	14	26	>	25	15	13	>	14	46	27	>	36	28	27	>	27	24
			V/C	0.30	0.84	>		0.42	0.65	>		0.74	0.38	>		0.33	0.35	>		0.85
			Q	19	178	>		8	54	>		63	42	>		25	36	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	76	-	>		78	-	>		4	-	>		35	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	B	>	C	C	B	>	C	C	C	>	C	C	C	C	C	C
			Delay	30	16	>	22	22	19	>	21	29	21	>	24	22	31	23	28	24
			V/C	0.83	0.39	>		0.31	0.05	>		0.84	0.68	>		0.02	0.60	0.13		0.89
			Q	66	13	>		15	9	>		83	126	>		3	80	15		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	78	-	>		10	-	>		19	-	>		75	-	61		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	F		C	E					A
			Delay		0	>	0	<	1		1	85		18	47					6
			V/C		0.47	>		<	0.05			0.69		0.27						0.74
			Q		0	>		<	1			28		8						
	Driveway 2 & Reach St	TWSC	LOS		A		A	<	A		A	F		>	F					A
			Delay		0		0	<	2		2	67		>	67					5
			V/C		0.51			<	0.10			0.64		>						0.95
			Q		0			<	2			26		>						
	Driveway 3/Driveway 4 & Reach St	TCS	LOS	A	A	>	A	B	A	>	A	<	D	>	D	<	C	>	C	B
			Delay	5	10	>	9	10	8	>	9	<	44	>	44	<	31	>	31	14
			V/C	0.04	0.60	>		0.46	0.53	>		<	0.70	>		<	0.03	>		0.62
			Q	3	103	>		31	85	>		<	47	>		<	6	>		
			Stor.	121	-	>		171	-	>		<	-	>		<	-	>		
			Avail.	118	-	>		140	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.9 Sensitivity Analysis

Through the pre-study consultation commentary received, Regional staff requested a sensitivity analysis, examining a scenario where the waste facility and bulk water filling facility demands are increased by approximately 70%.

The mitigation measures proposed in **Section 4.8.1** have been applied to assess overall intersection operations under the higher demand condition.

As Driveway 4 counts were based on 2025 daily vehicle volume data for traffic entering and exiting the facility, a factor of 1.70 was applied to the traffic volumes. The 70% factor is based on the direction provided by Region staff.

Figure 4.7 and **Figure 4.8** illustrate the 2028 and 2033 total traffic forecasts, respectively, representative of the additional 70% increase in traffic volume entering and exiting the waste facility and bulk water filling facility during the AM and PM peak hours.

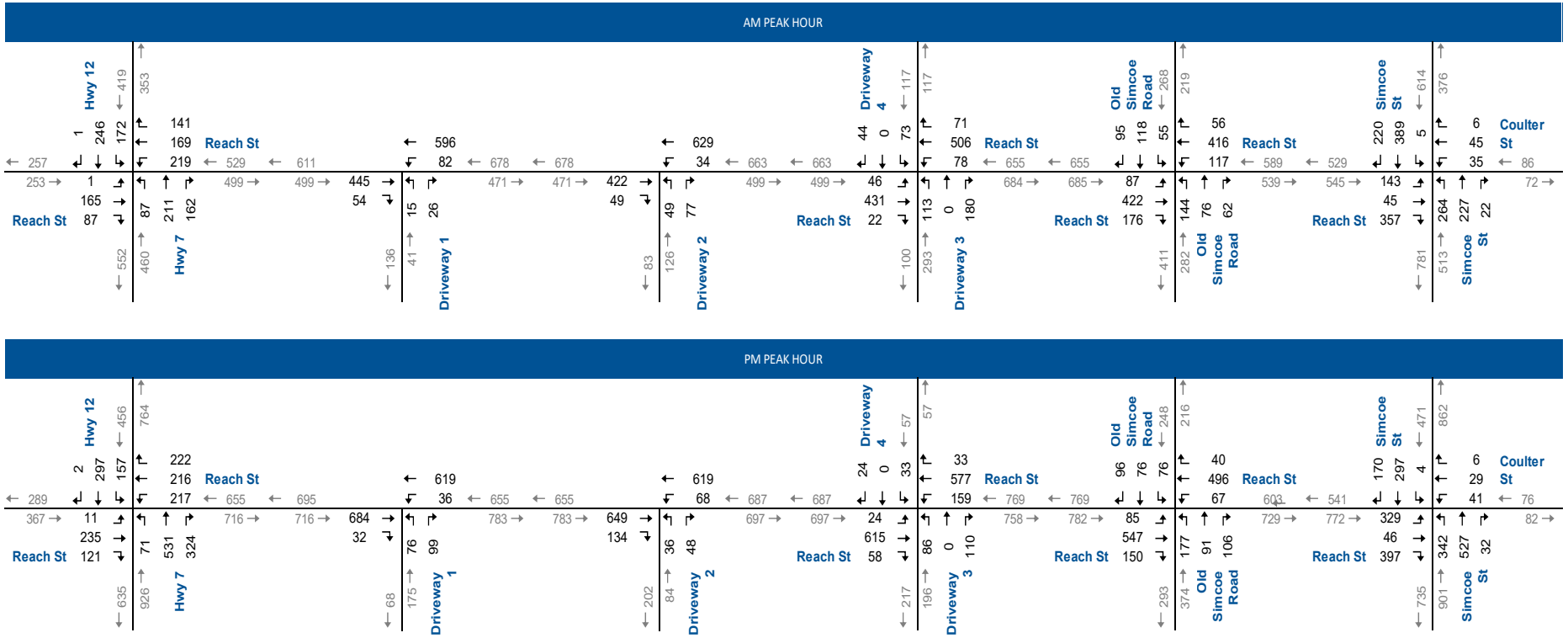
Table 4.19 and **Table 4.20** present the operational results for 2028 total traffic conditions with 70% additional traffic during the AM and PM peak hours, respectively.

Table 4.21 and **Table 4.22** present the operational results for 2033 total traffic conditions with 70% additional traffic during the AM and PM peak hours, respectively.

Appendix P contains the Synchro analysis outputs for reference.

Under 2028 and 2033 total traffic conditions with 70% additional traffic volume to/from Driveway 4, all study area intersections are forecast to operate at acceptable levels of service and well within capacity during both the AM and PM peak hours.

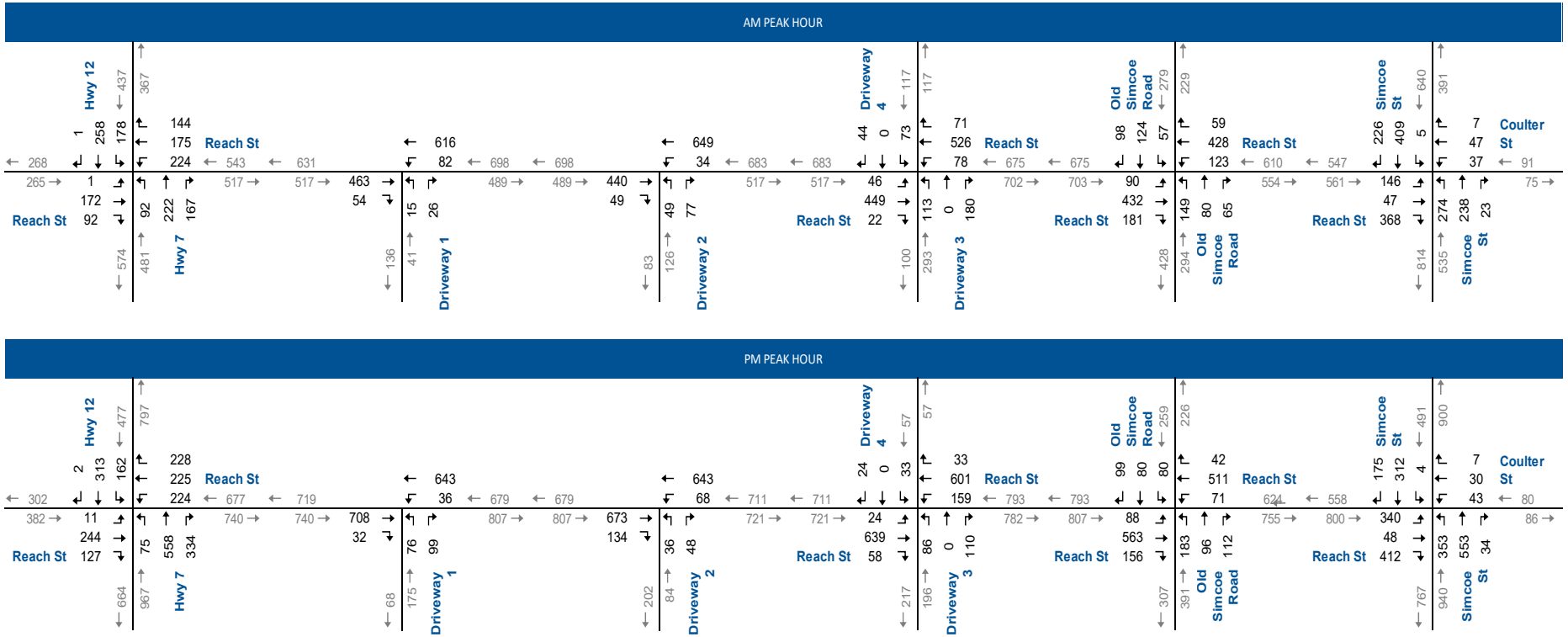
Traffic operations remain relatively similar to previous total traffic operational results, indicating negligible impacts from the anticipated increase in waste facility and bulk filling traffic. Overall, no additional mitigation measures are required.



2028 Total Traffic with Reassignment - Sensitivity AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 4.7



2033 Total Traffic with Reassignment - Sensitivity AM and PM Peak Hour

1520, 1540 and 1580 Reach Street TIS
250853

Figure 4.8

TABLE 4.19: 2028 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR – SENSITIVITY

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	B	>	**B**	C	B	>	**C**	B	B	B	**B**	B	B	B	**B**	**B**
			Delay	13	16	>	**16**	26	17	>	**21**	12	13	12	**12**	13	13	11	**13**	**16**
			V/C	0.00	0.43	>		0.73	0.54	>		0.23	0.35	0.13		0.43	0.41	0.00		**0.57**
			Q	1	36	>		46	45	>		19	39	11		37	46	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	120	-	>		85	-	>		78	-	46		76	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	C	>	**C**	C	B	>	**B**	C	C	>	**C**	C	C	>	**C**	**C**
			Delay	14	24	>	**23**	22	17	>	**18**	34	23	>	**29**	23	26	>	**26**	**23**
			V/C	0.27	0.78	>		0.52	0.57	>		0.58	0.22	>		0.18	0.42	>		**0.74**
			Q	19	130	>		32	85	>		43	27	>		17	46	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	76	-	>		54	-	>		24	-	>		43	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	**C**	C	C	>	**C**	B	A	>	**B**	A	A	A	**A**	**B**
			Delay	34	29	>	**30**	31	26	>	**28**	13	7	>	**10**	5	8	6	**7**	**16**
			V/C	0.63	0.43	>		0.44	0.14	>		0.57	0.24	>		0.01	0.37	0.17		**0.61**
			Q	35	29	>		13	13	>		66	35	>		2	58	10		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	109	-	>		12	-	>		36	-	>		76	-	66		
	Driveway 1 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	D		B	**C**					**A**
			Delay		0	>	**0**	<	2		**2**	31		12	**19**					**2**
			V/C		0.32	>		<	0.09			0.10		0.05						**0.76**
			Q		0	>		<	2			3		1						
	Driveway 2 & Reach St	TWSC	LOS		A	>	**A**	<	A		**A**	D		>	**D**					**A**
			Delay		0	>	**0**	<	1		**1**	28		>	**28**					**3**
			V/C		0.30	>		<	0.04			0.47		>						**0.75**
			Q		0	>		<	1			18		>						
	Driveway 3/Driveway 4 & Reach St	TCS	LOS	A	B	>	**B**	A	B	>	**B**	<	D	>	**D**	<	C	>	**C**	**B**
			Delay	10	12	>	**12**	10	14	>	**14**	<	39	>	**39**	<	30	>	**30**	**19**
			V/C	0.14	0.45	>		0.19	0.58	>		<	0.68	>		<	0.33	>		**0.61**
			Q	9	67	>		14	93	>		<	74	>		<	27	>		
			Stor.	121	-	>		171	-	>		<	-	>		<	-	>		
			Avail.	112	-	>		157	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.20: 2028 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR – SENSITIVITY

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	C	>	C	D	C	>	C	B	B	B	B	D	B	B	C	C
			Delay	16	21	>	20	49	25	>	33	13	20	13	17	43	14	12	24	23
			V/C	0.06	0.58	>		0.88	0.73	>		0.18	0.73	0.26		0.84	0.42	0.00		0.86
			Q	5	68	>		72	86	>		16	108	14		59	53	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	116	-	>		59	-	>		81	-	43		54	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	C	>	C	B	B	>	B	D	C	>	C	C	C	>	C	C
			Delay	13	26	>	24	14	13	>	13	44	27	>	35	27	27	>	27	23
			V/C	0.28	0.83	>		0.38	0.64	>		0.73	0.35	>		0.30	0.34	>		0.84
			Q	18	174	>		8	56	>		61	40	>		23	34	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	77	-	>		78	-	>		6	-	>		37	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	B	>	C	C	B	>	C	C	B	>	C	C	C	C	C	C
			Delay	30	15	>	21	22	20	>	21	25	20	>	22	21	29	23	27	23
			V/C	0.82	0.39	>		0.29	0.05	>		0.80	0.65	>		0.02	0.56	0.13		0.86
			Q	65	13	>		14	10	>		76	117	>		3	75	15		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	79	-	>		11	-	>		26	-	>		75	-	61		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	F		C	E					A
			Delay		0	>	0	<	1		1	76		17	43					5
			V/C		0.46	>		<	0.05			0.66		0.27						0.73
			Q		0	>		<	1			27		8						
	Driveway 2 & Reach St	TWSC	LOS		A		A	<	A		A	F		>	F					A
			Delay		0		0	<	2		2	59		>	59					4
			V/C		0.50			<	0.09			0.60		>						0.94
			Q		0			<	2			24		>						
	Driveway 3/Driveway 4 & Reach St	TCS	LOS	A	A	>	A	A	A	>	A	<	D	>	D	<	C	>	C	B
			Delay	5	9	>	9	10	8	>	9	<	45	>	45	<	32	>	32	14
			V/C	0.06	0.57	>		0.44	0.52	>		<	0.71	>		<	0.12	>		0.6
			Q	4	97	>		30	83	>		<	47	>		<	12	>		
			Stor.	121	-	>		171	-	>		<	-	>		<	-	>		
			Avail.	117	-	>		141	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.21: 2033 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR – SENSITIVITY

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	B	>	B	C	B	>	C	B	B	B	B	B	B	B	B	B
			Delay	13	16	>	16	25	17	>	20	13	14	12	13	14	14	11	14	16
			V/C	0.00	0.44	>		0.73	0.54	>		0.25	0.38	0.13		0.46	0.44	0.00		0.58
			Q	1	38	>		47	47	>		20	42	11		38	49	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	120	-	>		84	-	>		77	-	46		75	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	C	>	C	C	B	>	B	D	C	>	C	C	C	>	C	C
			Delay	14	26	>	24	25	17	>	19	36	23	>	30	23	27	>	26	24
			V/C	0.29	0.80	>		0.58	0.59	>		0.61	0.24	>		0.19	0.44	>		0.77
			Q	20	142	>		37	89	>		45	29	>		17	48	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	75	-	>		49	-	>		22	-	>		43	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	C	>	C	C	C	>	C	B	A	>	B	A	A	A	A	B
			Delay	34	28	>	30	31	26	>	28	15	7	>	11	6	8	7	8	16
			V/C	0.64	0.44	>		0.46	0.14	>		0.62	0.25	>		0.01	0.39	0.18		0.64
			Q	36	30	>		14	14	>		76	36	>		2	62	10		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	108	-	>		11	-	>		26	-	>		76	-	66		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	D		B	C					A
			Delay		0	>	0	<	2		2	33		12	20					2
			V/C		0.33	>		<	0.09			0.11		0.05						0.78
			Q		0	>		<	2			3		1						
	Driveway 2 & Reach St	TWSC	LOS		A	>	A	<	A		A	D		>	D					A
			Delay		0	>	0	<	1		1	31		>	31					4
			V/C		0.31	>		<	0.04			0.51		>						0.76
			Q		0	>		<	1			20		>						
	Driveway 3/Driveway 4 & Reach St	TCS	LOS	A	B	>	B	A	B	>	B	<	D	>	D	<	C	>	C	B
			Delay	10	12	>	12	10	15	>	14	<	39	>	39	<	30	>	30	19
			V/C	0.15	0.47	>		0.19	0.60	>		<	0.68	>		<	0.33	>		0.63
			Q	9	70	>		14	98	>		<	74	>		<	27	>		
			Stor.	121	-	>		171	-	>		<	-	>		<	-	>		
			Avail.	112	-	>		157	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 4.22: 2033 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR – SENSITIVITY

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Highway 7/Highway 12 & Reach St	TCS	LOS	B	C	>	C	E	C	>	D	B	C	B	B	E	B	B	C	C
			Delay	17	22	>	22	68	27	>	41	13	22	14	18	67	15	12	33	28
			V/C	0.07	0.60	>		0.95	0.75	>		0.20	0.75	0.27		0.94	0.44	0.00		0.94
			Q	5	71	>		78	91	>		16	117	14		64	56	0		
			Stor.	121	-	>		131	-	>		97	-	57		113	-	63		
			Avail.	116	-	>		53	-	>		81	-	43		49	-	63		
	Old Simcoe Rd & Reach St	TCS	LOS	B	C	>	C	B	B	>	B	D	C	>	D	C	C	>	C	C
			Delay	14	28	>	26	16	14	>	14	48	27	>	37	28	27	>	27	25
			V/C	0.31	0.86	>		0.44	0.66	>		0.77	0.38	>		0.33	0.36	>		0.87
			Q	19	184	>		8	54	>		65	42	>		25	36	>		
			Stor.	95	-	>		86	-	>		67	-	>		60	-	>		
			Avail.	76	-	>		78	-	>		2	-	>		35	-	>		
	Simcoe St & Reach St/Coulter St	TCS	LOS	C	B	>	C	C	B	>	C	C	C	>	C	C	C	C	C	C
			Delay	30	16	>	22	22	19	>	21	32	21	>	25	22	31	23	28	25
			V/C	0.83	0.40	>		0.31	0.06	>		0.86	0.69	>		0.02	0.60	0.14		0.9
			Q	67	12	>		15	10	>		86	126	>		3	80	15		
			Stor.	144	-	>		25	-	>		102	-	>		78	-	76		
			Avail.	77	-	>		10	-	>		16	-	>		75	-	61		
	Driveway 1 & Reach St	TWSC	LOS		A	>	A	<	A		A	F		C	E					A
			Delay		0	>	0	<	1		1	89		18	49					6
			V/C		0.47	>		<	0.05			0.71		0.28						0.74
			Q		0	>		<	1			29		8						
	Driveway 2 & Reach St	TWSC	LOS		A		A	<	A		A	F		>	F					A
			Delay		0		0	<	2		2	72		>	72					5
			V/C		0.52			<	0.10			0.66		>						0.96
			Q		0			<	2			28		>						
	Driveway 3/Driveway 4 & Reach St	TCS	LOS	A	A	>	A	B	A	>	A	<	D	>	D	<	C	>	C	B
			Delay	5	10	>	9	10	9	>	9	<	45	>	45	<	32	>	32	14
			V/C	0.06	0.60	>		0.46	0.54	>		<	0.71	>		<	0.12	>		0.62
			Q	4	103	>		31	88	>		<	47	>		<	12	>		
			Stor.	121	-	>		171	-	>		<	-	>		<	-	>		
			Avail.	117	-	>		140	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
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TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.10 Transit and Active Transportation Impacts

4.10.1 Transit

The majority of prospective residents, visitors and employees are expected to drive to the site. However, there is an opportunity to offer a more sustainable transportation option through the addition of public transit routes and bus stops. When the site develops, DRT could consider adding additional bus routes. These new bus routes would complement the existing Route 905C already running along Reach Street. Additional bus routes would provide residents, visitors and employees with effective access to public transit.

Under existing conditions, one transit routes currently operates and services Reach Street. With development of the subject lands, this is opportunity to leverage the existing service through the provision of new transit stops. The intersection of Driveway 3/Driveway 4 (East Access) and Reach Street would be a suitable location.

4.10.2 Walking

The 2021 Township of Scugog *Active Transportation and Transportation Master Plans (AT and TMP)* provides a strategic long-term plan intended to encourage and promote sustainable transportation in the Township. The Township is committed to provide a robust framework for developing and managing active transportation network in a cost-effective manner. The network is planned to connect, integrate, enhance, and expand on existing facilities. It is expected that the initiatives taken by the Township will provide safe, accessible, and connected active transportation throughout Scugog.

The 2021 AT and TMP identifies plan to build a sidewalk along the north side of Reach Street, extending between Sherrington Drive and Simcoe Street. There is an existing sidewalk on the south side of Reach Street between Sherrington Drive and Old Simcoe Road, as well as a paved MUP between Old Simcoe Road and Simcoe Street. Providing pedestrian facilities on both sides of the roadway will facilitate safer and more convenient travel for pedestrians, promoting active transportation and connecting these users to and from transit.

The Township may also consider extending the proposed sidewalks approximately 500 metres west of Sherrington Drive to connect directly to the subject site. Providing a continuous and dedicated pedestrian facility would further enhance connectivity, support mode shift, and contribute to reduced reliance on vehicular travel. It will also support the Township's broader objectives of establishing a comprehensive and connected active transportation network while building on existing

infrastructure initiatives. With these facilities in place, the prospective residents, visitors and employees will be able to conveniently and safely walk to and from the development site.

Figure 4.9 shows the map of the planned pedestrian network.

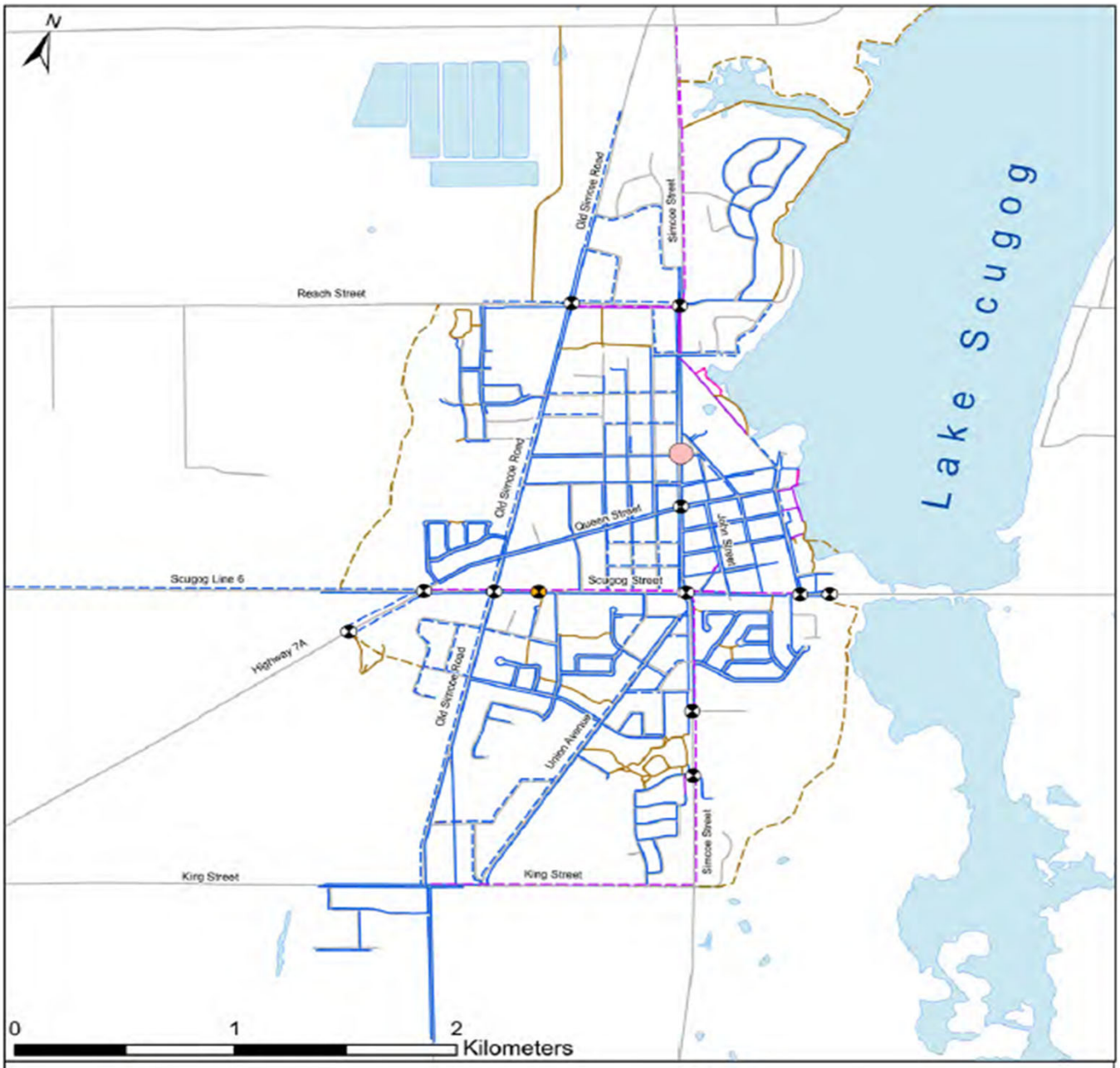
4.10.3 Cycling

The 2021 AT and TMP identifies plans to introduce MUP along Reach Street between Old Simcoe Road and Simcoe Street. The MUP is already constructed and operational. Additionally, paved shoulders exist along Reach Street between Old Simcoe Road and the westerly Township limits. These cycling facilities enhance east-west connectivity and improve access and mobility for cyclists in all directions.

The Township has a commitment to enhancing active transportation and aims to reduce automobile dependence, increase physical activity levels, improve public health, reduce infrastructure demands, and create more livable and vibrant communities. These initiatives significantly contribute to enhancing active transportation in the area, supporting safer and more accessible options for residents, visitors and employees across Scugog.

With these facilities in place, residents, visitors and employees will be able to cycle to and from the development site. In the future, dedicated cycling infrastructure may be considered to provide more convenient and direct access for cyclists to the planned development.

Figure 4.10 shows the map of the planned cycling network.



Legend

Existing Facility Type
- Multi-use Path (Paved)
- Trail (Unpaved)
- Sidewalk
- Boardwalk

Proposed Facility Type
- Multi-use Path (Paved)
- Trail (Unpaved)
- Sidewalk
- Pedestrian Crossover

Existing Signal
- Intersection Pedestrian Signal
- Traffic Control Signal

Image Source: Scugog Active Transportation and Transportation Master Plans (AT and TMP)

Township of Scugog Proposed Pedestrian Network

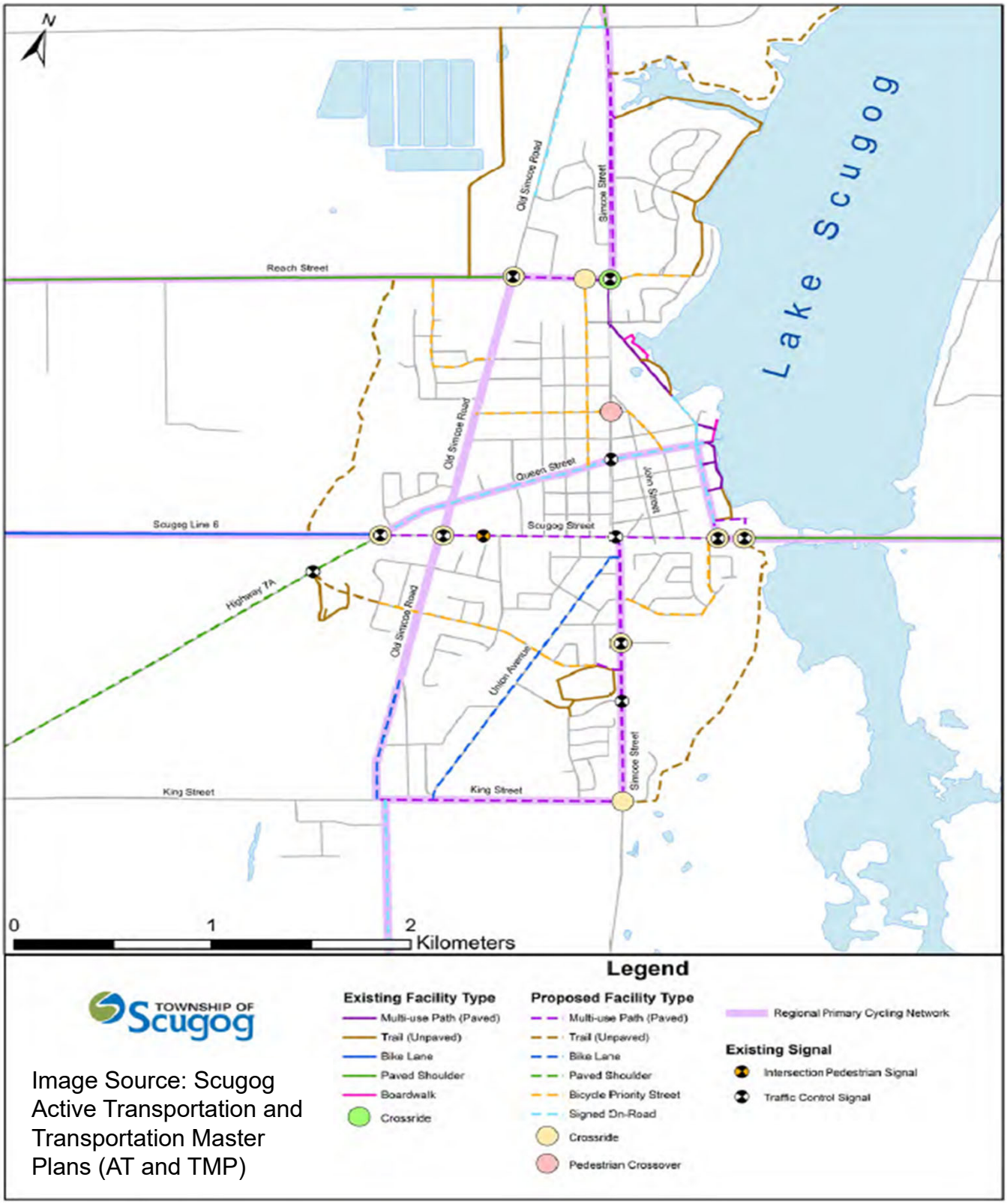


Image Source: Scugog Active Transportation and Transportation Master Plans (AT and TMP)

Township of Scugog Proposed Cycling Network

5 Transportation Demand Management (TDM) Plan

Transportation Demand Management (TDM) refers to policies and programs designed to manage the demands of the transportation network. In North America, TDM is primarily geared towards encouraging alternative transportation modes to the single-occupant vehicle (SOV), as opposed to the ongoing expansion of municipal roadway systems. Additionally, TDM also assists in reducing associated parking demands. TDM measures can include policy changes that support a balanced transportation network across all modes, as well as the development of infrastructure that encourages all modes of travel.

TDM polices and programs consider how people's choices of travel mode are affected by factors such as land use patterns, parking availability, parking costs, development design, the relative cost, convenience, and availability of alternate modes of transportation. Using polices and programs to make active and sustainable transportation more convenient, a TDM approach to transportation can deliver long-term environmental sustainability, improve public health, and build more human-scaled, livable cities.

However, TDM initiatives are not strictly confined to development design, and in many cases rely on the broader municipal transportation network to be successful. This means that TDM initiatives at the development level complement the municipal transportation network and together provide meaningful transportation options for the end users of a development.

A comprehensive TDM plan has been developed for the proposed mixed-use development.

5.1 Existing and Future TDM Opportunities

The built form and use of the lands surrounding the subject site are primarily oriented to automobile travel; however, a TDM Plan can assist in reducing SOV trips, which can in turn reduce the number of site-generated vehicle trips.

TDM includes programs, policies, and infrastructure that promote a shift in thinking towards a multi-faceted approach to transportation planning. With proper implementation, TDM initiatives can encourage transit, cycling, and walking modes as viable attractive alternatives to the private automobile.

The study area includes existing infrastructure which could be further enhanced or modified to support TDM for the subject site. The following subsections highlight existing and future planned infrastructure or programs to support TDM.

5.1.1 Transit

The subject site is a proposed new residential community and employment area located within the Township of Scugog. Along Reach Street, DRT Route 905C provides service between the intersection of Railway Street/Albert Street and Whitby Station.

This route operates predominantly in east-west direction, with a headway of approximately 90 minutes. There is an opportunity to provide s more sustainable transportation option through the addition of public transit routes and bus stops, as well as improving headways. This will help serve the subject site better, facilitating both local and inter-regional travel.

5.1.2 Walking

Pedestrian facilities including sidewalks and a paved MUP are currently provided along the south side of Reach Street, east of Sherrington Drive. There are plans to build a sidewalk on the north side of Reach Street. It is recommended that these sidewalks be extended approximately 500 metres west of Sherrington Drive to provide a continuous and direct connection to the subject site, enhancing pedestrian accessibility and connectivity.

5.1.3 Cycling

An MUP currently exists along the south side of Reach Street between Old Simcoe Road and Simcoe Street. However, no dedicated cycling facilities directly connect to the subject site. Paved shoulders are provided along Reach Street between Old Simcoe Road and the western Township limits, requiring cyclists to share travel lanes or shoulders with motor vehicles.

Future planned improvements could include dedicated cycling facilities to provide safer, more convenient, and direct access for cyclists to the proposed development.

5.2 Proposed TDM Measures

TDM strategies are aimed at influencing land use patterns, development design, parking availability and cost, and/or the relative cost, convenience and availability of other travel modes to reduce

reliance on motor vehicles for travel. These strategies can be divided into two categories:

- Pre-occupancy: Measures implemented in the design and construction of the development; and
- Post-occupancy: Measures implemented once the development is occupied and operational.

Measures taken pre-occupancy can influence how attractive, convenient, and safe travel modes other than single-occupant vehicle (SOV) travel will be once the site is developed and occupied. At this stage, the site can be designed to better facilitate travel by walking, cycling, and transit, while ensuring sufficient vehicle parking is provided to meet but not exceed demand. The local municipality (Township of Scugog) also has greater influence on their implementation of post-occupancy measures.

Offering incentives after the development is completed also influences travel behaviour. Measures in this category include subsides to use transit, provision of trip-end facilities such as bicycle parking, and information about where and how to use different travel modes. The following sections outline the TDM measures proposed and planned for the site and are categorized into pre-occupancy and post-occupancy initiatives.

Table 5.1 summarizes the measures and denotes responsibility. development.

TABLE 5.1: PROPOSED TDM INITATIVES

Measure	Description	Responsibility
Planning and Design	Locate buildings closer to the street and orient entrances toward the street.	Developer
Walking and Cycling	Connect buildings and sidewalks with internal pathways. Install pedestrian and cyclist-oriented pavement markings and signing on-site where applicable. Provision of bicycle parking on-site to further encourage cycling as an alternative mode of transportation.	Developer

	Include lighting details on external pedestrian walkways.	
Transit Infrastructure	Increase transit service frequency and coverage near the development.	Durham Region Transit
Transit Usage	Incentives to encourage transit usage through the provision of transit incentives and education/promotion.	Developer
Vehicle Parking	Unbundle parking spaces from units. Reduce the provision of surplus parking if feasible.	Developer
Carshare	Implementation of on-site carshare services, if providers/operators are available.	Developer/ Property Management for on-site coordination and implementation
Education/ Promotion and Incentives	Monitor emerging programs to educate and promote TDM, including provision of prepaid transit passes to purchasers of new units, and consultation with Smart Commute for a membership to provide TDM services. The developer/owner shall commit to a TDM Communications Strategy Outreach to effectively delivery transit incentives and information packages to residents.	Developer

5.2.1 Walking and Cycling (Pre-Occupancy)

Pedestrian accessibility for a development is essential to ensure that those that can walk, have accessible pedestrian connections. Proper pedestrian connections from the surrounding community to the site should be available to ensure safety and to enhance the experience of those that choose to walk. Providing a safe and attractive environment

for residents, visitors and employees who choose to walk to or from the development will help reduce vehicle usage and parking requirements.

Walking will be supported and encouraged through the provision of secure internal connections. This would include internal site walkways and/or paths that are well designed in terms of accessibility, lighting, and where necessary, wayfinding signage. With sufficient on-site pedestrian infrastructure planned, pedestrian connectivity to the public sidewalks will be adequately provided for.

The promotion of cycling will likely be achieved through the provision of cycling infrastructure. The provision of cycling facilities makes a strong statement about a 'cycle-friendly' community or town and further encourages this mode of transportation. Walking and cycling will also be supported through the provision of pedestrian and cycling infrastructure as part of the future active transportation network.

The 2021 AT and TMP identifies plan to build a sidewalk along the north side of Reach Street, extending between Sherrington Drive and Simcoe Street. It is anticipated through this project that active transportation infrastructure improvements will be provided for Reach Street.

5.2.2 Transit (Pre-Occupancy and Post-Occupancy)

The availability of convenient and desirable transit options can reduce the number of personal automobile trips. As previously discussed, there is currently just one transit route (Route 905C) operating predominantly in east-west direction. This route provides good connectivity to the broader transit network and key destinations within the Township and provides opportunities for inter-regional travel.

Transit usage can be further promoted through the provision of transit incentives, marketing efforts through the provision of transit informational packages containing route maps, schedules, identifying routes to key locations within the Township, including hospitals, other institutions, recreational facilities, etc., and other applicable information to residents with the purchase of units.

Consideration may also be given towards providing monthly transit passes or other forms of transit subsidies for a limited time period as a means of attracting transit users and/or encourage automobile drivers to consider transit. This may only be applicable for the employment lands or the medium-density residential developments.

5.2.3 Vehicle Parking (Pre-Occupancy)

TDM measures aim to reduce automobile ownership and private vehicle trips, thereby reducing the need for an oversupply of parking with the intent of encouraging the use of other forms of transportation; however, parking supply should not be reduced to a point in which significant parking issues are created.

Managing parking supply helps to reduce the undesirable impacts of parking demand on local and regional traffic levels and can result in positive impacts on community livability and design.

To further encourage residents of the development to utilize sustainable travel modes, the developer should consider reducing parking rates, where possible.

5.2.4 Carshare (Post-Occupancy)

Carshare programs can provide residents, visitors and employees vehicle access to a site without requiring vehicle ownership and parking. It is noted that there are carshare companies actively seeking partners for operating stations/facilities.

A carshare program can be facilitated and encouraged through the provision of educational materials and on-site signage. This will allow patrons to be aware of their travel options and make the process clearer. It is recommended that a carshare program be explored for the site. Specifically, the applicant/developer will be responsible for identifying the cost and responsibilities for coordination and implementation of the on-site carshare services.

5.2.5 Wayfinding and Travel Planning (Post-Occupancy)

The location and nature of the proposed development is conducive to the placement of wayfinding signs. The provision of proper directional signage and accompanying illumination will create and foster an environment attractive to pedestrians and cyclists. All pedestrian crossings should be clearly delineated and illuminated.

5.2.6 Education/Promotion and Incentives (Pre-Occupancy)

The land owner/future property management company will consult with Smart Commute Durham (i.e., workplace and community-based travel planning) to discuss a membership for the subject property to provide TDM services. The TDM services offered will assist with post-occupancy initiatives including but not limited to assistance with a monitor program, coordination of bikeshare services, distribution of transit incentives and preparing informational packages of available



transportation options for residents. Smart Commute is expanding with community-based transportation demand management to reduce reliance on private automobiles.

5.2.7 TDM Checklist

Table 5.2 summarizes the TDM initiatives and strategies applicable to this proposed development.

TABLE 5.2: TDM CHECKLIST

TDM Measure	1520, 1540, 1580 Reach Street	
	Applicable	Responsibility
Transit Incentives (i.e., pre-paid monthly transit passes)	Yes	Applicant
Information Packages	Yes	
TDM Communication Strategy	Yes	
Pedestrian Connections	Yes	
Cycling Connections	Yes	
Pedestrian/Cycling Connections to Transit Facilities	Yes	
Internal Pedestrian Circulation	Yes	
Active Transportation Network	Yes	
Car Share/Parking	Yes	
Illumination of Pedestrian/Cycling Connections	Yes	
Parking Reduction	Yes	
Membership with Smart Commute or Similar Organization	Yes	

6 Access Review

6.1 Background/Context

The landowner's civil consultant, Sabourin Kimble & Associates Limited (SKA) previously engaged in discussions with Durham Region staff to determine locations of proposed site access intersections.

Specifically, for the access intersection locations at a spacing that accounts for sight distance and would function for both the lands on the south side of Reach Street, and the proposed Water Tower/Waste Transfer Facility on the north side of Reach Street.

SKA prepared a preliminary sketch illustrating the three proposed site access intersections in both plan and profile. This proposed locating Driveway 3/Driveway 4 (East Access) approximately 447 metres west of Sherrington Drive, locating Driveway 2 (Central Access) approximately 227 west of Driveway 3/Driveway 4 (East Access), and locating Driveway 1 (West Access) approximately 412 metres west of Driveway 2 (Central Access).

Durham Region staff agreed with the proposed location of Driveway 3/Driveway 4 would work for the anticipated signalized four-legged intersection, indicating that the Region's 205 metre Decision Sight Distance requirement would be met with the proposed location. Furthermore, staff indicated they had no concerns related to the proposed Driveway 1 (West Access) location. However, staff raised some concerns regarding Driveway 2 (Central Access), noting that the 227 metre spacing from Driveway 3/Driveway 4 (East Access) would be too close to ever operate as a signalized intersection, but commented the spacing would work if it will never operate under traffic signals.

Appendix Q contains relevant correspondence for reference.

6.2 Proposed Access Locations

Subsequently, the locations of Driveway 1 (West Access) and Driveway 2 (Central Access) were adjusted slightly from the preliminary plan.

Driveway 3/Driveway 4 (East Access) is still proposed to be located approximately 447 metres west of Sherrington Drive (centreline to centreline), as agreed to with Durham Region staff previously with the understanding that this intersection is anticipated to be signalized.

Driveway 2 (Central Access) is proposed to be located approximately 225 metres west of Driveway 3/Driveway 4 (East Access) (centreline to centreline).

Driveway 1 (West Access) is proposed to be located approximately 415 metres west of Driveway 2 (Central Access) (centreline to centreline), or approximately 265 metres east of North Port Road (centreline to centreline).

6.3 Sight Distance Assessment

During pre-study consultation discussions with Regional staff noted that a sight distance assessment would be required for each access to verify that the Decision Sight Distance meets the criteria for an 80 km/h design speed. Noting the assessment should be based on site observations and the roadway profile, rather than solely on the draft plan.

Accordingly, a sight distance assessment has been conducted to confirm that Decision Sight Distance requirements are satisfied at the proposed access intersection locations along Reach Street (RR8).

6.3.1 Methodology

The proposed study area driveways have been reviewed to confirm sight distance availability and provisions.

The minimum Stopping Sight Distance (SSD) for vehicles approaching along Reach Street (RR8) is the distance required for an approaching vehicle to stop safely and avoid a collision. Stopping sight distance is the sum of the distance travelled by a motorist during the perception and reaction time and the braking distance. Stopping sight distance is measured from the standard driver eye height of 1.05 metres to a fixed object 0.60 metres off the surface of the roadway.

Specifically, we have assessed the condition of Decision Sight Distance (DSD). That is, for motorists travelling eastbound or westbound along Reach Street (RR8) that adequate sight distance provisions are provided for approaching motorists. DSD allows motorists to piece together warning signals and decide on a course of action. Decision sight distance allows drivers to maneuver their vehicles or vary their operating speed rather than stop, DSD is much greater than SSD for a given design speed.

The assessment has been carried out based on the methodology contained in the TAC GDGCR. Sight distance requirements are considered for vehicles approaching the site accesses (approach sight

distance). The following object heights were utilized in obtaining field measurements:

- Driver eye height: 1.05 metres; and
- Vehicle headlight or tail/brake light: 0.60 metres (for approach sight distance, height of vehicle/target object).

The main measurements for approaching traffic were taken from within the centre of either travel lane on Reach Street, assuming a vehicle position perpendicular to the proposed connections.

The sight distance requirements are based upon a design speed of 80 km/h (10 km/h above the current posted speed limit of 70 km/h along Reach Street) as directed by Region staff. It is noted that Driveway 3/Driveway 4 (East Access) is located along the section of Reach Street where the posted speed limit drops to 50 km/h; therefore, a design speed of 60 km/h was utilized when assessing this access.

Table 6.1 summarizes the required decision sight distances for the design speed of 80 km/h and for Avoidance Maneuver "C" which represents the distance required to undertake a speed/path/direction change on a rural roadway, and for a design speed of 60 km/h and for Avoidance Maneuver "D" which represents the distance required to undertake a speed/path/direction change on a suburban roadway.

TABLE 6.1: REQUIRED SIGHT DISTANCE CRITERIA

Sight Distance Criteria	Sight Distance Requirement (metres)	
	Design Speed 80 km/h	Design Speed 60 km/h
Decision Sight Distance[1]	230.0	205.0

[1] *TAC Guide. June 2017. Table 2.5.6: Decision Sight Distances*

While the TAC doesn't explicitly state that DSD requirements on grades, we've assumed that braking distances will increase on downgrades and reduce in upgrades, notably for the section between Driveway 1 (West Access) and Driveway 2 (Central Access).

Per profile data from SKA, and cross-referenced with Google Earth elevation data it is determined the grade between Driveway 1 (West Access) and Driveway 2 (Central Access) is approximately 3.0%.

The DSD sight distance requirement in consideration of a 3.0% downgrade and upgrade would be 310.0 metres, and 297 metres respectively.

6.3.2 Analysis

Table 6.2 summarizes the available measured and TAC recommended decision sight distances along Reach Street at the site access intersections.

TABLE 6.2: APPROACH SIGHT DISTANCE ANALYSIS SUMMARY (TWO-LANE CROSS SECTION)

Approach Direction	Available Sight Distance (m)	TAC Sight Distance Requirement (m)	Requirements Met?
Driveway 1 (West Access)			
Eastbound	> 400	230	Yes
Westbound	> 400	310	Yes
Driveway 2 (Central Access)			
Eastbound	> 400	297	Yes
Westbound	150	230	No
Driveway 3/Driveway 4 (East Access)			
Eastbound	> 400	205	Yes
Westbound	> 400	205	Yes

All site access intersections satisfy TAC Decision Sight Distance requirements.

The noted exception would be for Driveway 2 (Central Access) in the westbound direction. Sight distance is constrained due to the vertical crest to the east.

Regardless, it is noted the Stopping Sight Distance requirement of 130 metres is satisfied. That is, for a westbound motorist travelling along Reach Street approaching Driveway 2 (Central Access) they will be able to safely stop and avoid a collision; however, will be unable to undertake a speed/path/direction change.

7 Findings

Based upon the analyses conducted the following is determined:

- **Under 2028 background traffic conditions (without the development)** the study area intersections are forecast to operate at acceptable levels of service and with all movements within capacity.
- **Under 2033 background traffic conditions (without the development)**, the study area intersections are forecast to continue operating at acceptable levels of service and with all movements within capacity under the AM peak hour.

  Under the PM peak hour, while all movements are forecast to be within capacity, it is noted that several movements have been identified as approaching capacity.

  - At the intersection of Regional Highway 7/12 and Reach Street, the southbound left turn movement is forecast to operate at LOS E, but with an acceptable v/c ratio of 0.85.

    The westbound shared left/through/right movement is forecast to operate with a v/c ratio of 0.96.
  - At the intersection of Old Simcoe Road and Reach Street, the eastbound shared through/right movement is forecast to operate at LOS E, with a v/c ratio of 0.95.

    The westbound left turn movement is forecast to operate at LOS E, but with an acceptable v/c ratio of 0.73.

- **The following mitigation measures were determined to address the critical movements identified under 2033 background conditions (without the development):**

  Regional Highway 7/12 and Reach Street:

  - Provision of a warranted westbound left-turn lane.
  - An eastbound left-turn lane is not technically warranted based on projected traffic volumes. However, for logical design consistency and intersection symmetry, the provision of an opposing eastbound left-turn lane is recommended.

  Old Simcoe Road and Reach Street:

  - The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.

- No geometric modifications are required under background conditions, as acceptable operations can be achieved through signal timing optimization.

- **Under 2028 and 2033 total traffic conditions (with the development)** several critical movements are identified at the study area intersections.
- **The following mitigation measures were determined to address the critical movements identified under 2028 and 2033 total traffic conditions (with the development), above and beyond those previously identified under background conditions:**

  Regional Highway 7/12 and Reach Street:

  - Provision of a warranted westbound left-turn lane under 2028 total traffic conditions.
  - An eastbound left-turn lane is not technically warranted based on projected traffic volumes. However, for logical design consistency and intersection symmetry, the provision of an opposing eastbound left-turn lane is recommended.

  Old Simcoe Road and Reach Street:

  - The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.
  - No geometric modifications are required under total conditions, as acceptable operations can be achieved through signal timing optimization.

  Simcoe Street and Reach Street/Coulter Street:

  - The identified critical movements can be mitigated by adjusting signal timing splits of existing phases within the existing cycle length.
  - No geometric modifications are required under total conditions, as acceptable operations can be achieved through signal timing optimization.

  Driveway 1 (West Access) and Reach Street:

  - The identified critical movements can be mitigated by providing two outbound lanes in the northbound direction.

  Driveway 2 (Central Access) and Reach Street:

- Mitigated through anticipated traffic redistribution with the signalization of Driveway 3/Driveway 4 (East Access).

Driveway 3/Driveway 4 (East Access) and Reach Street:

- The identified critical movements can be mitigated by installing a traffic signal.

- The site access locations on Reach Street were determined to be appropriate satisfying Decision Sight Distance requirements. The minor exception would be for Driveway 2 (Central Access) in the westbound direction, where the Decision Sight Distance is not achieved due to the vertical crest. However, it is noted that Stopping Sight Distance requirement is satisfied.

8 Conclusions and Recommendations

8.1 Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** All study intersections are operating at acceptable levels of service and well within capacity during both AM and PM peak hours.
- **Development Trip Generation:** Development of the site is forecast to generate 779 trips in the AM peak hour and 942 trips in the PM peak hour.
- **Background Traffic Conditions:** Under 2028 background conditions, the study intersections are forecast to operate at acceptable levels of service and well within capacity. No critical movements are forecast.

  Under 2033 background traffic conditions, critical movements were identified at two study intersections. It is noted regardless of whether the proposed development proceeds or not, mitigation measures would need to be considered to address background growth.
- **Total Traffic Conditions:** Under 2028 and 2033 total traffic conditions, it was determined mitigation measures would be required to accommodate the site-generated traffic.
- **Transportation Demand Management Plan:** Applicable initiatives have been identified. These strategies can be implemented to encourage active transportation and public transit use. The proposed TDM strategies aim to reduce single-occupant vehicle use and promote sustainable transportation options to and from the site.
- **Site Access Locations:** The locations of the proposed driveway connections with Reach Street have been determined to be appropriate providing adequate sight distance allowing drivers at minimum to stop safely or to undertake a speed/path/direction change on Reach Street.

8.2 Recommendations

The following recommendation is provided based on the study results:

- Township and Regional staff consider the contents of this report.
- From a transportation perspective, the planning applications sought should be approved.

- The applicable roadway jurisdiction should monitor the signalized intersections within the study area in regard to background growth and changes in traffic patterns to determine when mitigation measures would be required, regardless of whether the development proceeds or not.

Appendix A

Pre-Study Consultation Notes

From: Arash Olia
Sent: Fri, 9 Jan 2026 18:45:15 +0000
To: Prateek Jain
Cc: Doug Robertson;bruce.alexander@rjburnside.com;Adrian Soo;Valerie Hendry
Subject: RE: (250853) Terms of Reference - 1520, 1540 & 1580 Reach Street, Township of Scugog
Attachments: Transportation Impact Study Guidelines OCT 2011 with 2020 Figs.pdf

Hi Prateek,

We have reviewed the proposed Terms of Reference, and our comments are provided below. My responses to your questions are highlighted in red.

1. Your study must comply with the Region's Traffic Impact Study Guidelines. This includes the attached document and requirements for Synchro analysis in Chapters 9 and 10 of the Design Specifications for Traffic Control Devices, Pavement Marking, Signage and Roadside Protection.

2. The most current intersection Turning Movement Counts (TMC), Automatic Traffic Recorder (ATR) counts, and AADT data available from the Region can be downloaded from the interactive traffic counts map on our website. Any TMC and ATR data utilized shall be from 2024 or later.

3. Other traffic data, including signal timings, are available for purchase from our Traffic Engineering & Operations Division (traffic@durham.ca 905-666-8116).

4. The study is to include a site visit to observe existing infrastructure and operations for all travel modes. Key observations are to be included in the report, including any observed operational or safety issues. Observations of existing traffic operations (e.g., queue lengths) should be used to validate the existing conditions Synchro analysis results.

5. The draft plan includes three accesses on Reach Street. A sightline assessment is required for each access to verify that the Decision Sight Distance meets the criteria for an 80 km/h design speed. This assessment should be based on site observations and the roadway profile, rather than solely on the draft plan.

6. Please ensure that the trip distribution assumptions are also thoroughly documented, including identifying the specific TTS data/zone locations, travel pattern information, etc. that is used.

7. The study should include dedicated sections on transit and active transportation, documenting both existing and planned networks and services. It should also provide recommendations to ensure safe and effective connectivity to the site for non-auto travel modes.

8. The Travel Demand Management (TDM) section is to offer site-specific recommendations on infrastructure and programs that help minimize vehicular demand and promote non-auto travel among residents and employees. The study should also identify the responsible parties for implementation and long-term maintenance of each recommended TDM measure.

Please let me know if you have any questions on the above.

Regards,

Arash Olia, Ph.D., PMP, P.Eng.| Project Manager
Works Department | Transportation Infrastructure Management Division
The Regional Municipality of Durham
Arash.Olia@durham.ca | 905-668-4113 extension 2774 | durham.ca
My pronouns are he/him.

From: Prateek Jain <pjain@ptsl.com>
Sent: January 7, 2026 11:17 AM
To: bruce.alexander@rjburnside.com; Arash Olia <Arash.Olia@durham.ca>
Cc: Valerie Hendry <vhendry@scugog.ca>; Adrian Soo <asoo@ptsl.com>
Subject: (250853) Terms of Reference - 1520, 1540 & 1580 Reach Street, Township of Scugog

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Hello Arash and Bruce,

Paradigm Transportation Solutions Limited (PTSL) has been retained by Wannop Properties, in care of Malone Given Parsons Ltd., to prepare a Transportation Impact Study (TIS) for the proposed development of 1520, 1540, and 1580 Reach Street in the Township of Scugog in support of sought Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision applications. The TIS will be conducted in general accordance with the Regional Municipality of Durham *Traffic Impact Study Guidelines*.

The purpose of this e-mail is to establish a Terms of Reference (ToR) for the TIS. We are seeking agreement and/or direction on our proposed scope of work below.

Background

The subject site is a proposed new residential community and employment area located at 1520, 1540, and 1580 Reach Street in the Township of Scugog. The site is located on the south side of Reach Street, generally between North Port Road and Sherrington Drive.

The subject lands are currently vacant. The property owner is proposing to develop approximately one third of the overall lands as employment, and the remainder of the lands as residential. The employment lands are anticipated to include “Prestige Industrial” and “General Industrial” land uses. The residential lands are proposed to include a medium density, medium/high density mixed-use, a condominium block, a long-term care facility, and approximately 446 detached single-family homes, and 84 townhouse units.

Vehicle access to the proposed employment lands is proposed via a local road connecting to Reach Street, located approximately 320 metres east of North Port Road, and is proposed as an all-moves stop-controlled connection. Vehicle access to the residential lands is proposed via two local road connections to Reach Street, both operating as all-moves stop-controlled connections. These local road connections are proposed to be located approximately 500 metres east of North Port Road, aligned with the private driveway serving 1511 Reach Street, and approximately 465 metres west of Sherrington Drive, aligned across from a future anticipated driveway serving a planned Water Tower. It is understood access to/from the existing waste transfer station will be served by this new driveway, with west existing driveway connection with Reach Street to be closed. As we understand, the east existing driveway is to be maintained for service vehicle usage.

A copy of the latest draft plan is enclosed for reference.

Study Intersections

- Regional Highway 7/12 and Reach Street (Durham Regional Road 8) (signalized)
- Old Simcoe Road and Reach Street (Regional Road 8) (signalized)
- Simcoe Street (Regional Road 2) and Reach Street (Regional Road 8)/Coulter Street (signalized)
- Proposed Site Access Connections with Reach Street (Regional Road 8) (proposed unsignalized)

Traffic Forecasts and Analysis

- Traffic forecasts and analysis will be completed for base year conditions (2026), and two future planning horizons – Opening Year (full build-out/occupancy), and a Five-Year Horizon (five years following full build-out/occupancy).
- Intersection traffic operations will be analyzed using Highway Capacity Manual (HCM) methodologies and Synchro 12 software.
- The analysis periods will be the weekday AM and PM peak hours (i.e., typical commuter periods).
- Vehicular trip generation for the proposed development will be based on the data from the Institute of Transportation Engineers (ITE) publication, Trip Generation Manual (12^{th} Edition).
- Approved background developments to be accounted for within the background traffic forecasts.
    - Township Planning staff have confirmed there are no approved and/or in-stream other area background developments to be accounted within the traffic forecasts.
    - In consideration of the Future Water Tower, it is assumed that it will not generate any significant vehicular demands during the adjacent AM and PM street peak hours.

- Trip distribution/assignment will be based on current travel patterns documented/observed from existing traffic data.

Requested Information

1. **Traffic Data**. Any data that may be pertinent to the analysis, including TMCs, AADTs, ATRs, pedestrian studies and/or cycling counts. Please refer to the link provided above for any required traffic data.
    a. We have extracted TMC counts from Durham's Traffic Database.
2. **Growth rate**. A conservative (i.e., errs on the high side) growth rate of 1.0% compounded per annum will be applied to estimate background growth. If an alternate rate is to be applied, please advise. This is acceptable.
    a. It is noted the growth rate was calculated based upon population, housing, and employment data/forecasts between 2018 and 2031 as documented within the Township of Scugog's Active Transportation and Transportation Master Plan document.
3. **Background developments**. Information on approved and/or in-stream background developments to be accounted for within the background traffic forecasts. OK
    a. Township Planning staff have confirmed there are no approved and/or in-stream other area background developments to be accounted within the traffic forecasts.
4. **Future road improvements**. Information on future road and/or network improvements that will impact the identified road network/study area. There are no road widening works proposed within the study area.
    a. It is understood there was informal discussion regarding potentially lowering the speed limit from 70 km/h to 50 km/h across the residential portion frontage, also potentially driven due in part to the new Future Water Tower site driveway connection. Is the Region able to advise or provide any further insight? At this time, the Region does not have any plans to reduce the posted speed limit; therefore, all analysis and review should be based on the current speed limit.

Thank you for reviewing project details and providing information where available. If there are any questions, please do not hesitate to contact us. We look forward to your response.

Kind regards,

Prateek Jain, M.A.Sc.
Transportation Consultant
(He/Him)

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From: Arash Olia
To: Adrian Soo
Cc: Doug Robertson
Subject: RE: Reach Street Background Information & Contact Information - Water Tower & Waste Facility
Date: February 2, 2026 12:38:12 PM
Attachments: image002.png
image003.png
image008.png
image009.png
image010.png
image011.png
image012.png
Scugog2025byhour.csv

Hi Adrian,

Further to my email below regarding the Waste Facility traffic data, please note that, in addition to the proposed relocation of the vehicular access to the west to align with the future municipal road serving the Wannop lands, the overall capacity of the Waste Management Facility is also anticipated to increase.

Based on the information provided, an increase in Waste Facility traffic volumes on the order of approximately 70% should be assumed under future conditions. Peak traffic is predominantly observed on Saturdays and is seasonal in nature, with the highest activity typically occurring during May and June. Please refer to the attached spreadsheet for additional details.

Accordingly, the Transportation Impact Study (TIS) should include a sensitivity analysis that evaluates the impact of these increased traffic volumes. The analysis should address, at a minimum, intersection operations, signal warrant analysis, and storage length requirements, reflecting the anticipated increase in facility traffic.

Please let me know if you have any questions.

Thanks,
Arash

From: Arash Olia
Sent: January 30, 2026 1:59 PM
To: Adrian Soo <asoo@ptsl.com>
Cc: Doug Robertson <Doug.Robertson@Durham.ca>; Aaron Christie <Aaron.Christie@durham.ca>
Subject: RE: Reach Street Background Information & Contact Information - Water Tower & Waste Facility

Hi Adrian,

Thanks for reaching out to the Region. With respect to the requested data, please see the information below:

- **Waste Facility Traffic Data:** Attached is the requested vehicular hourly and

daily traffic volume data for the Scugog Waste Management Facility for 2025. Please note that the average time spent on site per vehicle is approximately 15 minutes. The numbers shown in the spreadsheet represent vehicles entering the site and being “scaled in” at the scale house; vehicles then exit through the outbound scale within the same one-hour window.

- **Bulk Water Filling Station Traffic:** Traffic interpretation is the same as noted above. The average time spent on site per vehicle is less than one hour.

- **Tower Development Traffic:** Traffic associated with the proposed tower development is expected to be minimal. For conservative analysis purposes, you may assume approximately five (5) trips during both the AM and PM peak periods.

I hope this information is helpful. Please let me know if you have any questions.

Thanks,
Arash

Arash Olia, Ph.D., PMP, P.Eng.| Project Manager
Works Department | Transportation Infrastructure Management Division
The Regional Municipality of Durham
Arash.Olia@durham.ca | 905-668-4113 extension 2774 | durham.ca
My pronouns are he/him.

From: Adrian Soo <asoo@ptsl.com>
Sent: January 14, 2026 11:35 AM
To: Aaron Christie <Aaron.Christie@durham.ca>
Cc: Prateek Jain <pjain@ptsl.com>
Subject: Reach Street Background Information & Contact Information - Water Tower & Waste Facility

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Good Morning Aaron,

My name is Adrian Soo, I am a Senior Project Manager with Paradigm. We’ve been retained to undertake the Traffic Impact Study in support of the Wannop lands at 1520, 1540 & 1580 Reach Street, Port Perry.

Your contact information was forwarded along to me from Krista Boyce. She indicated that you would be able to assist me.

As we understand the existing vehicular access to the Scugog Waste Management Facility will be closed, and be relocated to the west, providing access to the waste facility, in addition to a new Water Tower. This access would be aligned across from an access road serving the Wannop lands on the south side of Reach Street.

To ensure that we assess the new intersection accurately, I'm seeking your assistance to provide existing vehicle demands to/from the waste facility. From past projects involving waste facilities, daily records from the weigh scale were provided for my use.

Are you able to provide me with daily counts of vehicles entering and exiting the facility (broken down by hour if possible)?. I will defer to you to providing data for the peak seasons experienced at the waste facility.

Additionally, for the new Water Tower development, would be able to advise on typical traffic demands expected to be generated? I would assume the traffic generated would be nominal, limited to the small employee complement? I also understand the water tower will also facilitate bulk water filling. Would it be same to assume during the weekday AM and PM adjacent street peak hours (i.e,. typically commuter periods) that traffic demands to and from the water tower would be nominal, say 5 – 10 trips during the morning and afternoon peak hours accounting for employees and trucks filling?

Thank you for your assistance. Look forward to your reply.

Regards,

Adrian Soo, P.Eng.
Senior Project Manager, Associate
(He/Him)

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From: Krista Boyce <kboyce@skaengineering.com>
Sent: January 7, 2026 3:58 PM

From:	Valerie Hendry
To:	Prateek Jain; Bruce Alexander; "Kurt Niles"
Cc:	Adrian Soo
Subject:	RE: Request for Background Development Information – 1520, 1540 & 1580 Reach Street, Township of Scugog
Date:	January 6, 2026 1:45:56 PM
Attachments:	image002.png image003.png

Hi thanks for reaching out.

There are no planned residential developments in the immediate area. To the west and south, the lands are designated as Employment Area.

If you have not already done so, please reach out to the Region of Durham and the R.J. Burnside (Township's engineering consultant) to discuss the preparation of a Terms of Reference for the Transportation Impact Study. They are copied on this email.

My understanding was that the western Wannop lands designated as Employment were also to be considered as part of future development applications. Please advise if this will form part of the study.

Thank you

Valerie Hendry, MCIP, RPP
Manager of Planning

Township of Scugog, 181 Perry St. P.O. Box 780, Port Perry, ON L9L 1A7
P:905.985.7346 ext 100, Fax: 905.985.9914
Website: www.scugog.ca
vhendry@scugog.ca

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From: Prateek Jain <pjain@ptsl.com>
Sent: Tuesday, January 6, 2026 12:02 PM
To: Scugog Planning <planning@scugog.ca>
Cc: Adrian Soo <asoo@ptsl.com>

Subject: Request for Background Development Information – 1520, 1540 & 1580 Reach Street, Township of Scugog

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Good afternoon,

Paradigm Transportation Solutions Limited (PTSL) has been retained by Wannop Properties, in care of Malone Given Parsons Ltd., to prepare a Transportation Impact Study for a proposed new residential community and employment area located at 1520, 1540, and 1580 Reach Street in the Township of Scugog. The site is located on the south side of Reach Street, between North Port Road and Sherrington Drive.

The property owner plans to develop the lands with a condominium block, a long-term care facility, approximately 446 detached single-family homes, and 84 townhouse units. The anticipated build-out year is 2028.

Could you please confirm if there are any background developments planned in the close proximity to the subject site that may affect the Transportation Impact Study?

Thank you in advance for your assistance.

Kind regards,

Prateek Jain, M.A.Sc.
Transportation Consultant
(He/Him)

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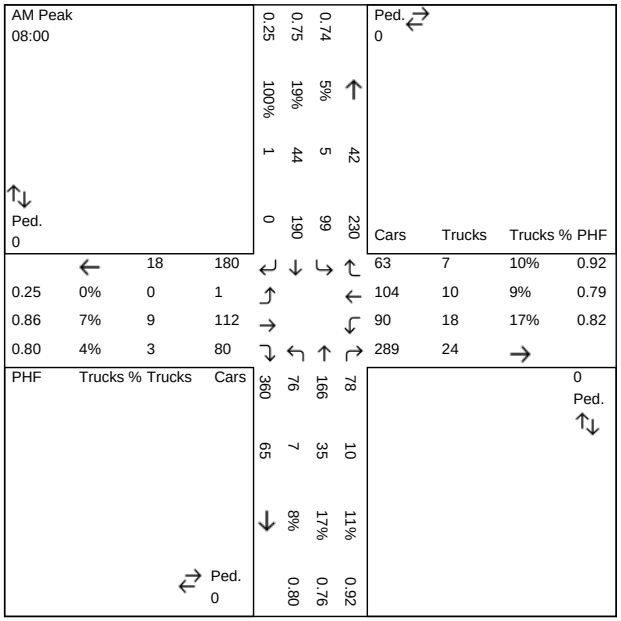
Appendix B

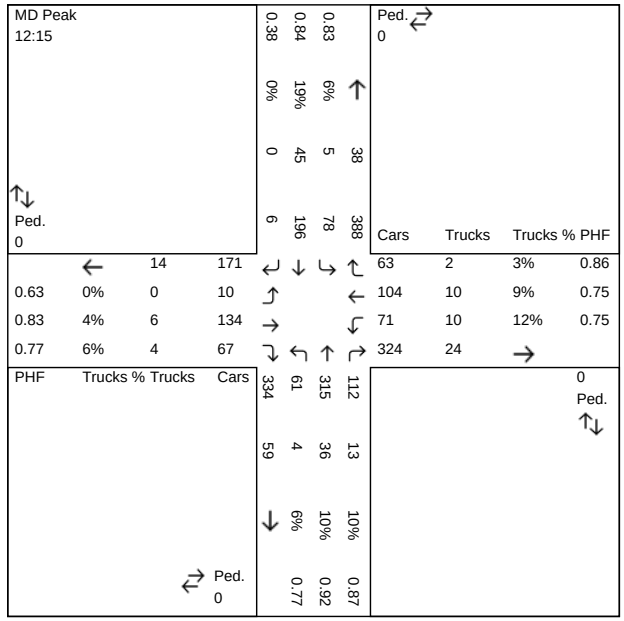
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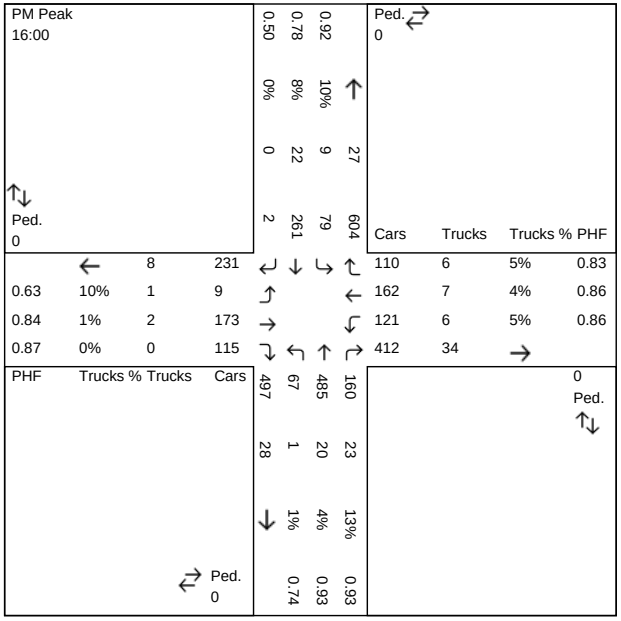
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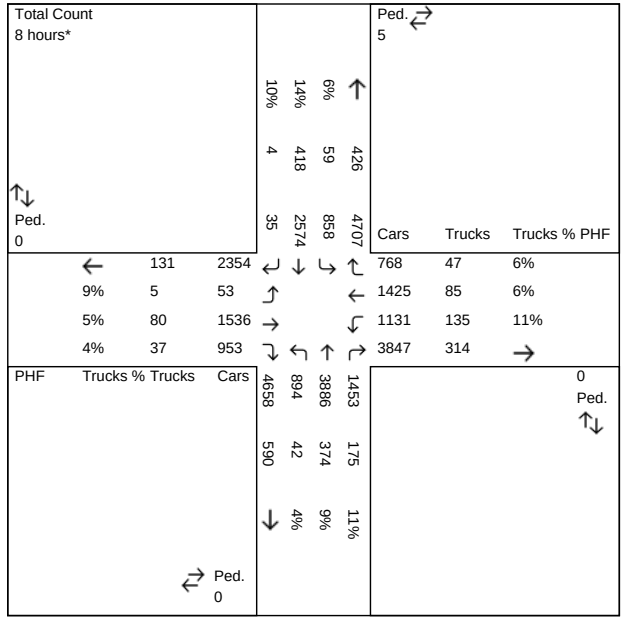
Reach St (R.R. 08) @ Highway 7/12 (339)

TMC No: 0080600000 **Intersection ID:** 1452 **Count ID:** 35702041382 **Count Date:** 06/20/2023, Tue









TMC 15 Min Report

Reach St (R.R. 08) @ Highway 7/12 (339)

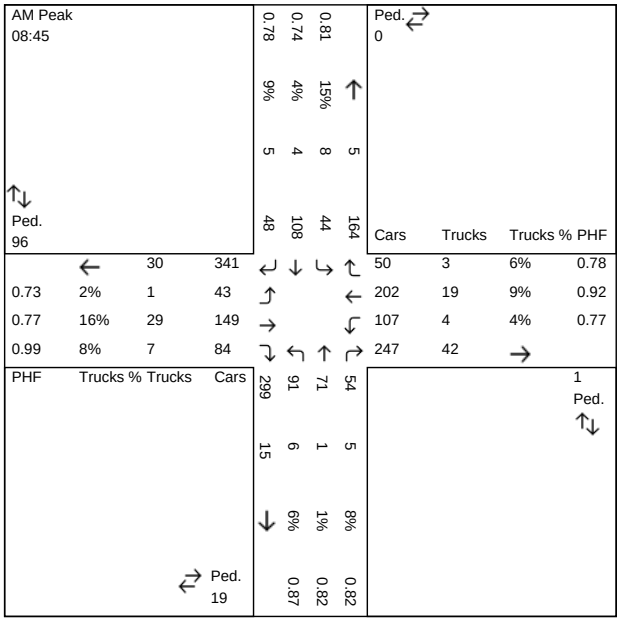
TMC No: 0080600000 **Intersection ID:** 1452 **Count ID:** 35702041382 **Count Date:** 06/20/2023, Tue

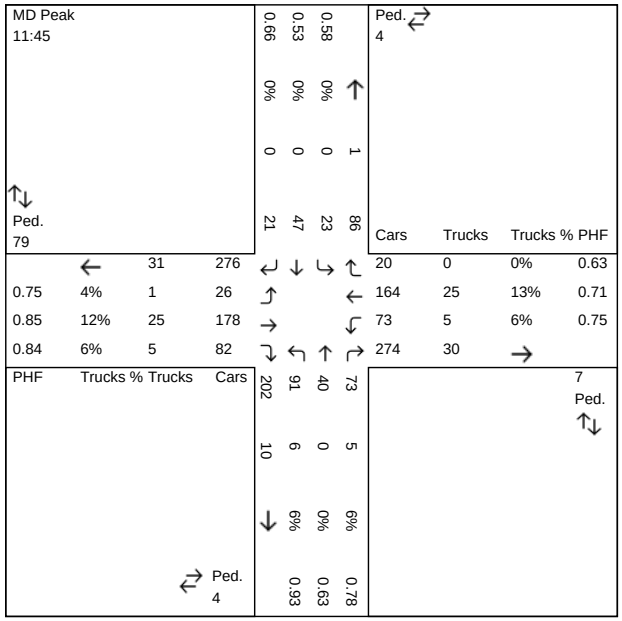
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	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
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05:15	1*	16*	0*	1*	4*	0*	0*	0*	0*	0*	12*	2*	3*	1*	1*	2*	0*	0*	0*	0*	2*	7*	2*	0*	4*	1*	0*	0*	0*	0*	0*	5*	2*	0*	0*	0*	0*	0*	0*	66*
05:30	5*	30*	0*	0*	1*	0*	0*	0*	0*	0*	22*	9*	1*	2*	0*	3*	0*	0*	0*	0*	7*	6*	3*	0*	8*	2*	0*	0*	0*	0*	0*	0*	5*	0*	0*	0*	0*	0*	0*	104*
05:45	7*	40*	0*	0*	3*	0*	0*	0*	0*	0*	18*	8*	4*	2*	1*	0*	0*	0*	0*	0*	10*	7*	3*	1*	6*	0*	0*	0*	0*	0*	0*	0*	1*	0*	0*	1*	0*	0*	0*	112*
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08:15	**18**	**43**	**0**	**1**	**11**	**0**	**0**	**0**	**0**	**0**	**27**	**27**	**18**	**6**	**1**	**1**	**0**	**0**	**0**	**0**	**17**	**32**	**15**	**1**	**8**	**2**	**0**	**0**	**0**	**0**	**1**	**25**	**21**	**0**	**1**	**1**	**0**	**0**	**0**	**277**
08:30	**24**	**48**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**18**	**24**	**15**	**5**	**2**	**2**	**0**	**0**	**0**	**0**	**25**	**38**	**21**	**1**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**23**	**11**	**0**	**2**	**1**	**0**	**0**	**0**	**278**
08:45	**31**	**39**	**0**	**4**	**4**	**1**	**0**	**0**	**0**	**0**	**27**	**32**	**15**	**5**	**4**	**2**	**0**	**0**	**0**	**0**	**16**	**43**	**19**	**4**	**9**	**5**	**0**	**0**	**0**	**0**	**0**	**32**	**25**	**0**	**3**	**1**	**0**	**0**	**0**	**321**
09:00	29	40	3	1	4	0	0	0	0	0	22	14	14	6	2	1	0	0	0	0	17	38	24	2	12	2	0	0	0	0	0	23	20	0	5	2	0	0	0	281
09:15	17	42	0	1	12	0	0	0	0	2	19	33	20	3	2	1	0	0	0	0	19	43	22	1	12	6	0	0	0	0	1	23	16	0	3	1	0	0	0	299
09:30	20	30	1	0	11	0	0	0	0	0	26	18	9	3	3	0	0	0	0	0	14	52	21	1	5	3	0	0	0	0	0	25	19	0	1	1	0	0	0	263
09:45	27	46	0	1	8	0	0	0	0	0	27	24	9	8	1	4	0	0	0	0	14	49	21	1	6	2	0	0	0	0	1	21	14	0	1	0	0	0	0	285
10:00	16	35	0	1	7	0	0	0	0	0	26	31	20	3	3	2	0	0	0	0	13	55	16	1	8	4	0	0	0	0	0	28	13	0	1	0	0	0	0	283
10:15	10	44	0	2	14	0	0	0	0	0	22	31	11	7	3	0	0	0	0	0	23	75	14	0	12	1	0	0	0	0	0	30	11	0	2	0	0	0	0	312
10:30	9	39	1	0	12	0	0	0	0	0	15	29	9	5	3	0	0	0	0	0	11	55	23	0	9	4	0	0	0	0	0	39	17	0	2	4	0	0	0	286
10:45	16	47	1	3	20	0	0	0	0	0	26	28	16	1	1	0	0	0	0	0	16	44	21	1	10	4	0	0	0	0	0	25	13	0	2	3	0	0	0	298
Period 2																																								
11:00	10	45	0	3	9	0	0	0	0	2	23	30	12	3	1	0	0	0	0	0	21	62	25	0	11	5	0	0	0	0	1	22	11	0	1	4	0	0	0	301
11:15	24	51	2	1	10	0	0	0	0	1	17	22	18	1	2	1	0	0	0	0	11	61	27	0	11	3	0	0	0	0	0	30	17	0	1	2	0	0	0	313
11:30	20	47	1	1	8	0	0	0	0	0	28	27	8	4	3	0	0	0	0	0	16	76	27	1	9	6	0	0	0	0	1	36	19	0	1	0	0	0	0	339
11:45	21	44	2	1	5	0	0	0	0	0	14	26	12	3	1	4	0	0	0	0	3	53	19	1	4	4	0	0	0	0	4	31	21	1	0	1	0	0	0	275
12:00	21	35	1	1	10	0	0	0	0	0	18	37	13	0	0	0	0	0	0	0	12	70	25	0	11	3	0	0	0	0	0	32	13	1	3	1	0	0	0	307
12:15	**19**	**50**	**4**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**23**	**30**	**14**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**19**	**85**	**31**	**2**	**10**	**3**	**0**	**0**	**0**	**0**	**1**	**34**	**12**	**0**	**2**	**0**	**0**	**0**	**0**	**359**
12:30	**19**	**42**	**1**	**3**	**13**	**0**	**0**	**0**	**0**	**0**	**15**	**36**	**16**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**13**	**59**	**22**	**0**	**9**	**4**	**0**	**0**	**0**	**0**	**1**	**42**	**21**	**0**	**0**	**2**	**0**	**0**	**0**	**322**
12:45	**23**	**39**	**0**	**2**	**11**	**0**	**0**	**0**	**0**	**0**	**20**	**19**	**18**	**2**	**2**	**1**	**0**	**0**	**0**	**0**	**17**	**89**	**31**	**0**	**6**	**5**	**0**	**0**	**0**	**0**	**4**	**31**	**15**	**0**	**2**	**2**	**0**	**0**	**0**	**339**
13:00	**17**	**65**	**1**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**13**	**19**	**15**	**2**	**4**	**1**	**0**	**0**	**0**	**0**	**12**	**82**	**28**	**2**	**11**	**1**	**0**	**0**	**0**	**0**	**4**	**27**	**19**	**0**	**2**	**0**	**0**	**0**	**0**	**332**
13:15	20*	48*	0*	2*	9*	0*	0*	0*	0*	0*	20*	21*	20*	0*	2*	1*	0*	0*	0*	0*	20*	78*	25*	1*	7*	2*	0*	0*	0*	0*	1*	32*	24*	1*	1*	1*	0*	0*	0*	336*
13:30	16*	65*	0*	0*	10*	0*	0*	0*	0*	0*	19*	30*	19*	2*	0*	0*	0*	0*	0*	0*	12*	86*	25*	2*	9*	5*	0*	0*	0*	0*	4*	37*	14*	0*	1*	1*	0*	0*	0*	357*
13:45	13*	46*	0*	2*	12*	0*	0*	0*	0*	0*	18*	26*	10*	1*	4*	0*	0*	0*	0*	0*	18*	89*	33*	1*	7*	8*	0*	0*	0*	0*	0*	28*	18*	0*	2*	0*	0*	0*	0*	336*
Period 3																																								
14:00	20	63	0	2	11	0	0	0	0	0	19	33	16	2	2	1	0	0	0	0	25	90	28	0	10	5	0	0	0	0	0	39	14	0	3	1	0	0	0	384
14:15	9	68	0	1	11	0	0	0	0	0	27	36	15	1	1	2	0	0	0	0	13	91	38	2	6	2	0	0	0	0	0	51	23	0	2	0	0	0	0	399
14:30	8	44	0	4	15	0	0	0	0	0	26	30	15	4	5	2	0	0	0	0	26	93	40	0	8	4	0	0	0	0	1	44	16	1	2	0	0	0	0	388
14:45	12	54	1	1	7	1	0	0	0	0	17	32	15	2	3	2	0	0	0	0	21	95	48	1	6	7	0	0	0	0	1	34	15	0	2	0	0	0	0	377
15:00	17	56	0	1	14	0	0	0	0	0	24	30	18	1	1	1	0	0	0	0	22	97	49	1	6	4	0	0	0	0	1	40	27	0	0	1	0	0	0	411
15:15	21	58	0	1	7	1	0	0	0	0	12	34	9	2	0	2	0	0	0	0	24	97	45	2	8	6	0	0	0	0	2	34	18	0	6	2	0	0	0	391
15:30	20	50	0	0	7	0	0	0	0	0	30	36	26	4	1	0	0	0	0	0	16	104	43	2	2	11	0	0	0	0	2	40	30	0	3	1	0	0	0	428
15:45	20	65	2	2	4	0	0	0	0	0	30	44	22	5	2	0	0	0	0	0	14	74	40	0	4	7	0	0	0	0	1	41	25	0	3	1	0	0	0	406
16:00	**21**	**56**	**0**	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**27**	**39**	**27**	**2**	**1**	**2**	**0**	**0**	**0**	**0**	**22**	**128**	**38**	**1**	**8**	**11**	**0**	**0**	**0**	**0**	**1**	**33**	**28**	**0**	**1**	**0**	**0**	**0**	**0**	**451**
16:15	**22**	**82**	**1**	**1**	**9**	**0**	**0**	**0**	**0**	**0**	**35**	**39**	**29**	**2**	**4**	**1**	**0**	**0**	**0**	**0**	**12**	**106**	**43**	**0**	**3**	**4**	**0**	**0**	**0**	**0**	**3**	**44**	**33**	**1**	**1**	**0**	**0**	**0**	**0**	**475**
16:30	**18**	**61**	**0**	**2**	**8**	**0**	**0**	**0**	**0**	**0**	**27**	**35**	**21**	**1**	**2**	**1**	**0**	**0**	**0**	**0**	**19**	**124**	**42**	**0**	**5**	**3**	**0**	**0**	**0**	**0**	**2**	**44**	**28**	**0**	**0**	**0**	**0**	**0**	**0**	**443**
16:45	**18**	**62**	**1**	**3**	**3**	**0**	**0**	**0**	**0**	**0**	**32**	**49**	**33**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**14**	**127**	**37**	**0**	**4**	**5**	**0**	**0**	**0**	**0**	**3**	**52**	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**472**
17:00	16	64	0	3	6	0	0	0	0	0	22	23	17	2	2	1	0	0	0	0	17	130	45	0	2	1	0	0	0	0	2	39	22	0	2	1	0	0	0	417
17:15	22	53	1	2	3	0	0	0	0	0	25	29	32	2	0	1	0	0	0	0	21	122	40	1	5	4	0	0	0	0	1	42	22	0	1	0	0	0	0	429
17:30	20	64	1	0	5	1	0	0	0	0	31	14	18	1	0	0	0	0	0	0	29	102	45	0	13	2	0	0	0	0	1	37	27	0	0	1	0	0	0	412
17:45	11	42	0	0	3	0	0	0	0	0	15	20	19	0	2	0	0	0	0	0	17	129	45	0	3	2	0	0	0	0	2	39	27	0	1	1	0	0	0	378
18:00	12	50	0	2	3	0	0	0	0	0	18	21	12	3	0	0	0	0	0	0	23	120	43	0	1	1	0	0	0	0	2	31	15	0	0	0	0	0	0	357
18:15	18	63	0	1	2	0	0	0	0	0	22	31	5	0	2	1	0	0	0	0	16	98	40	1	0	3	0	0	0	0	1	35	22	0	0	0	0	0	0	361
18:30	9	54	0	1	2	0	0	0	0	0	15	27	16	0	0	0	0	0	0	0	20	96	32	2	2	1	0	0	0	0	0	15	26	0	1	0	0	0	0	319
18:45	9	51	1	0	0	0	0	0	0	0	21	21	13	1	0	0	0	0	0	0	19	102	36	0	1	0	0	0	0	0	2	15	19	0	0	0	0	0	0	311
19:00	9	44	1	1	2	0	0	0	0	0	11	18	14	0	0	0	0	0	0	0	8	85	15	0	1	1	0	0	0	0	0	19	12	0	0	0	0	0	0	241
19:15	6	36	0	0	0	0	0	0	0	0	12	14	7	0	1	0	0	0	0	0	14	84	14	0	2	0	0	0	0	0	1	18	13	0	0	0	0	0	0	222
19:30	6	31	1	0	2	0	0	0	0	0	13	22	7	0	1	0	0	0	0	0	10	61	11	0	0	1	0	0	0	0	0	17	11	0	0	1	0	0	0	195
19:45	7	30	0	0	1	0	0	0	0	0	7	11	5	0	0	0	0	0	0	0	13	61	16	0	1	1	0	0	0	0	3	13	15	0	1	0	0	0	0	185
20:00	3	25	2	0	0	0	0	0	0	0	6	13	5	0	1	0	0	0	0	0	17	41	17	0	2	0	0	0	0	0	0	20	11	0	1	0	0	0	0	164
20:15	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*
20:30	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*

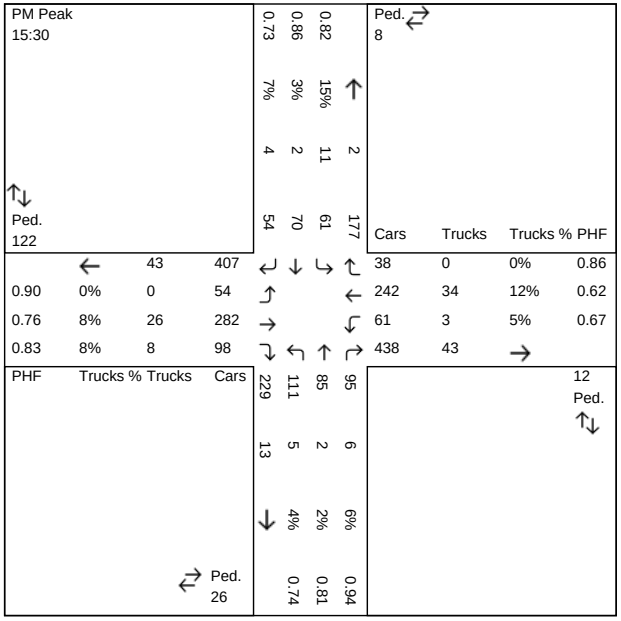
TMC Tabular Report

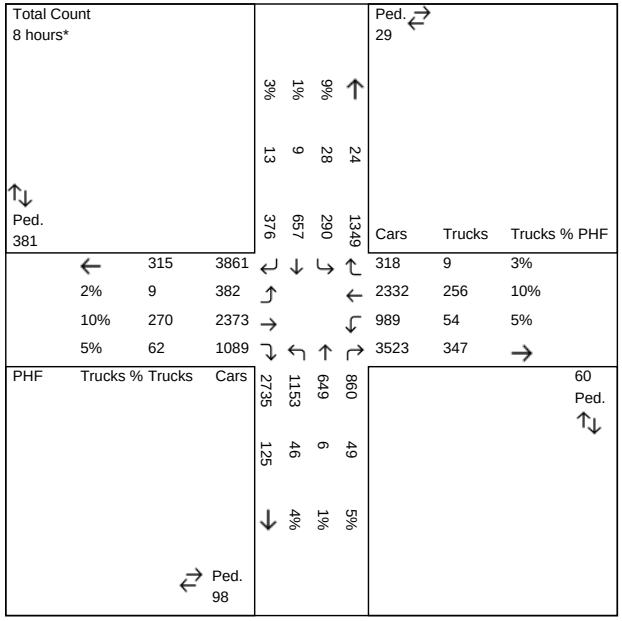
Reach St (R.R.08) @ Old Simcoe Rd (901)

TMC No: 0080400000 **Intersection ID:** 1218 **Count ID:** 35702051554 **Count Date:** 09/20/2023, Wed









TMC 15 Min Report

Reach St (R.R.08) @ Old Simcoe Rd (901)

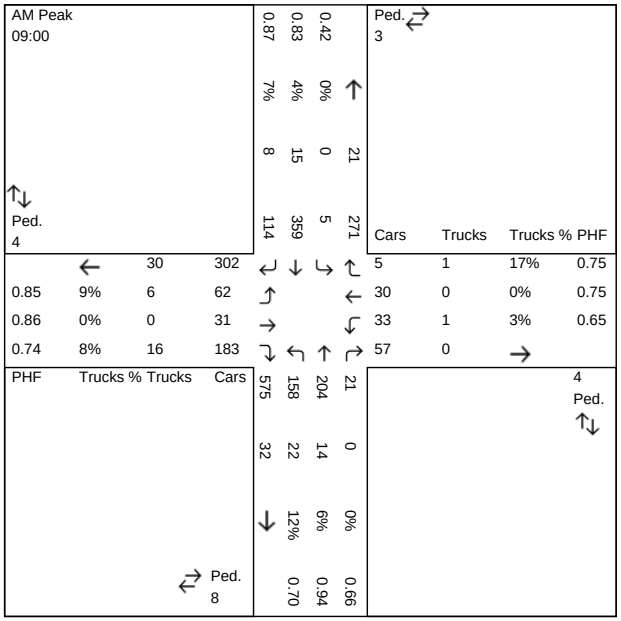
TMC No: 0080400000 **Intersection ID:** 1218 **Count ID:** 35702051554 **Count Date:** 09/20/2023, Wed

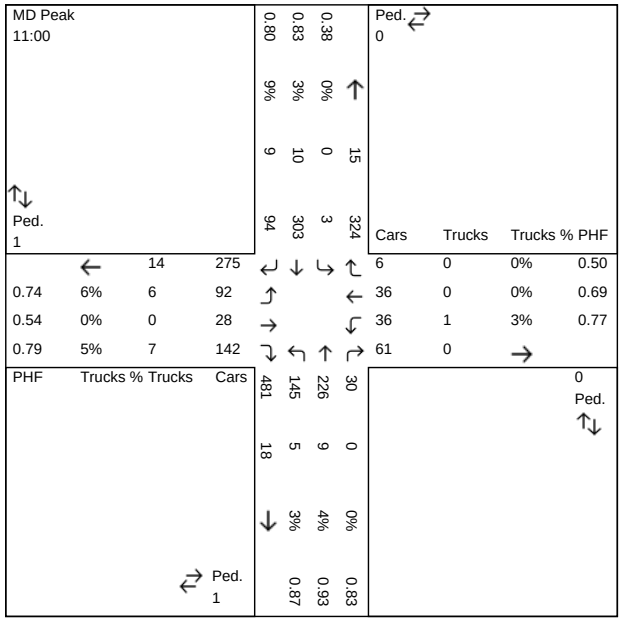
Time	NORTH APPROACH										EAST APPROACH										SOUTH APPROACH										WEST APPROACH										Total
	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Period 1																																								
05:00	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*
05:15	0*	1*	1*	0*	0*	0*	0*	0*	0*	0*	12*	10*	0*	1*	1*	0*	0*	0*	0*	0*	4*	3*	2*	0*	0*	0*	0*	0*	0*	0*	0*	4*	1*	0*	5*	0*	0*	0*	0*	0*	45*
05:30	0*	3*	1*	0*	0*	0*	0*	0*	0*	0*	21*	15*	0*	1*	1*	0*	0*	0*	0*	0*	9*	0*	3*	0*	0*	0*	0*	0*	0*	0*	0*	2*	2*	0*	7*	0*	0*	0*	0*	0*	65*
05:45	0*	2*	1*	0*	0*	0*	0*	0*	0*	0*	18*	22*	0*	0*	0*	0*	0*	0*	0*	0*	9*	0*	3*	0*	0*	0*	0*	0*	0*	0*	0*	1*	0*	0*	3*	0*	0*	0*	0*	0*	59*
06:00	0	2	5	0	0	0	0	0	0	0	26	29	0	1	1	0	0	0	0	0	11	1	6	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	92
06:15	0	7	8	0	0	0	0	0	0	0	30	44	1	2	0	0	0	0	0	0	21	0	4	1	0	0	0	0	0	0	1	6	2	0	3	0	0	0	0	0	130
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06:45	0	5	4	0	0	0	0	0	0	0	19	46	3	2	3	0	0	0	0	0	13	1	7	0	0	0	0	0	0	0	2	3	13	0	6	4	0	0	0	0	131
07:00	1	8	1	1	0	0	0	0	0	0	19	43	1	1	3	1	0	0	0	3	13	2	3	1	1	0	0	0	0	0	2	12	9	0	9	2	0	0	0	0	136
07:15	0	6	2	2	0	0	0	0	0	0	28	31	4	2	2	0	0	0	0	0	29	6	6	2	0	2	0	0	0	1	1	6	15	1	7	2	0	0	0	1	156
07:30	2	9	3	0	0	0	0	0	0	0	33	53	7	3	4	0	0	0	0	0	25	12	8	0	0	5	0	0	0	0	7	23	11	0	4	2	0	0	0	1	212
07:45	1	21	4	0	0	0	0	0	0	0	27	54	4	1	2	1	0	0	0	1	30	8	6	4	0	1	0	0	0	0	3	16	20	1	7	2	0	0	0	2	216
08:00	3	29	9	0	0	1	0	0	0	0	29	58	6	3	12	1	0	0	0	0	38	18	12	2	2	1	0	0	0	0	7	18	34	0	14	1	0	0	0	1	299
08:15	4	15	5	1	0	0	0	0	0	0	24	65	5	4	5	0	0	0	0	0	24	16	17	2	0	3	0	0	0	1	4	31	29	0	5	1	0	0	0	2	263
08:30	2	11	6	1	1	0	0	0	0	0	33	44	10	0	6	0	0	0	0	2	25	17	8	0	0	2	0	0	0	3	10	39	13	1	5	1	0	0	0	6	246
08:45	**16**	**29**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**52**	**16**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**27**	**20**	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**15**	**33**	**22**	**0**	**2**	**1**	**0**	**0**	**0**	**4**	**284**
09:00	**12**	**32**	**14**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**36**	**51**	**17**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**27**	**22**	**13**	**0**	**0**	**2**	**0**	**0**	**0**	**7**	**9**	**30**	**21**	**0**	**8**	**1**	**0**	**0**	**0**	**30**	**341**
09:15	**12**	**36**	**12**	**4**	**2**	**5**	**0**	**0**	**0**	**0**	**24**	**53**	**14**	**3**	**7**	**3**	**0**	**0**	**0**	**0**	**18**	**18**	**16**	**3**	**1**	**1**	**0**	**0**	**0**	**6**	**11**	**36**	**19**	**1**	**11**	**4**	**0**	**0**	**0**	**51**	**371**
09:30	**4**	**11**	**10**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**30**	**46**	**3**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**19**	**11**	**16**	**2**	**0**	**2**	**0**	**0**	**0**	**1**	**8**	**50**	**22**	**0**	**8**	**1**	**0**	**0**	**0**	**11**	**263**
09:45	7	14	3	0	0	0	0	0	0	0	24	42	6	1	2	0	0	0	0	0	32	3	10	0	0	0	0	0	0	2	9	24	20	0	6	1	0	0	0	0	206
10:00	5	7	5	0	0	0	0	0	0	0	16	39	10	1	5	0	0	0	0	0	17	12	14	2	0	0	0	0	0	0	3	47	17	0	9	0	0	0	0	0	209
10:15	5	8	9	0	0	0	0	0	0	0	13	34	6	5	5	0	0	0	0	0	20	8	10	1	0	0	0	0	0	0	2	46	28	0	4	2	0	0	0	0	206
10:30	4	3	5	0	0	0	0	0	0	1	20	39	5	0	3	0	0	0	0	0	13	6	17	1	0	3	0	0	0	2	2	39	21	1	5	1	0	0	0	0	191
10:45	8	8	3	0	0	1	0	0	0	0	19	38	0	2	4	0	0	0	0	1	26	3	16	0	0	2	0	0	0	2	2	33	24	0	1	1	0	0	0	0	194
Period 2																																								
11:00	3	8	6	0	0	0	0	0	0	2	22	41	6	1	11	0	0	0	0	4	17	4	18	2	0	0	0	0	0	3	2	44	16	0	7	1	0	0	0	0	218
11:15	4	17	5	0	0	0	0	0	0	0	16	35	4	2	2	0	0	0	0	0	20	6	18	1	0	0	0	0	0	1	3	40	23	0	5	1	0	0	0	0	203
11:30	0	13	3	0	0	0	0	0	0	0	25	44	8	2	4	0	0	0	0	0	24	13	15	1	0	3	0	0	0	0	5	57	27	0	2	2	0	0	0	3	251
11:45	**3**	**6**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**43**	**8**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**21**	**8**	**14**	**1**	**0**	**2**	**0**	**0**	**0**	**2**	**4**	**44**	**22**	**1**	**4**	**3**	**0**	**0**	**0**	**3**	**213**
12:00	**10**	**9**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**26**	**27**	**5**	**0**	**7**	**0**	**0**	**0**	**0**	**4**	**22**	**12**	**18**	**4**	**0**	**1**	**0**	**0**	**0**	**2**	**7**	**50**	**16**	**0**	**10**	**1**	**0**	**0**	**0**	**20**	**261**
12:15	**7**	**22**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**36**	**3**	**3**	**6**	**0**	**0**	**0**	**0**	**0**	**25**	**4**	**24**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**9**	**38**	**18**	**0**	**7**	**1**	**0**	**0**	**0**	**23**	**248**
12:30	**3**	**10**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**58**	**4**	**2**	**9**	**0**	**0**	**0**	**0**	**3**	**23**	**16**	**17**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**46**	**26**	**0**	**4**	**0**	**0**	**0**	**0**	**33**	**282**
12:45	7	11	5	0	0	0	0	0	0	3	10	36	7	0	0	0	0	0	0	3	17	9	16	1	0	2	0	0	0	0	2	34	15	1	4	0	0	0	0	18	201
13:00	3	8	3	0	1	0	0	0	0	0	28	41	7	1	6	0	0	0	0	2	24	8	17	1	0	0	0	0	0	2	6	47	16	0	8	0	0	0	0	8	237
13:15	3*	11*	3*	0*	2*	1*	0*	0*	0*	2*	20*	42*	5*	0*	10*	0*	0*	0*	0*	2*	21*	10*	21*	0*	0*	1*	0*	0*	0*	0*	1*	47*	10*	1*	6*	2*	0*	0*	0*	0*	221*
13:30	4*	10*	4*	0*	0*	0*	0*	0*	0*	0*	18*	35*	5*	1*	2*	0*	0*	0*	0*	0*	18*	10*	15*	2*	0*	3*	0*	0*	0*	2*	5*	46*	22*	0*	8*	2*	0*	0*	0*	0*	212*
13:45	1*	11*	6*	0*	1*	1*	0*	0*	0*	0*	14*	43*	5*	0*	7*	0*	0*	0*	0*	0*	24*	8*	20*	2*	1*	0*	0*	0*	0*	1*	4*	44*	24*	0*	7*	1*	0*	0*	0*	1*	226*
Period 3																																								
14:00	6	11	4	0	0	1	0	0	0	0	16	50	4	1	3	0	0	0	0	0	18	4	24	1	0	0	0	0	0	1	3	47	20	0	9	4	0	0	0	2	229
14:15	3	11	6	0	0	0	0	0	0	0	17	45	7	2	6	0	0	0	0	1	27	19	21	0	0	1	0	0	0	3	3	55	23	0	5	2	0	0	0	1	258
14:30	3	8	7	0	0	0	0	0	0	6	15	43	3	0	6	0	0	0	0	7	23	16	15	0	0	0	0	0	0	2	5	40	19	0	6	0	0	0	0	7	231
14:45	6	3	4	0	0	0	0	0	0	0	17	49	8	0	10	0	0	0	0	0	11	13	28	0	0	1	0	0	0	2	6	58	21	0	3	1	0	0	0	1	242
15:00	3	10	7	0	1	0	0	0	0	0	16	37	9	1	10	0	0	0	0	0	21	17	20	2	0	2	0	0	0	3	10	36	19	0	4	1	0	0	0	4	233
15:15	6	12	8	0	0	0	0	0	0	3	15	50	16	0	7	2	0	0	0	3	22	10	24	0	0	1	0	0	0	1	11	39	13	0	4	2	0	0	0	0	249
15:30	**18**	**20**	**14**	**0**	**1**	**0**	**0**	**0**	**0**	**7**	**24**	**102**	**10**	**0**	**10**	**0**	**0**	**0**	**0**	**9**	**28**	**25**	**24**	**0**	**2**	**0**	**0**	**0**	**0**	**6**	**15**	**62**	**29**	**0**	**4**	**3**	**0**	**0**	**0**	**12**	**425**
15:45	**8**	**16**	**17**	**5**	**1**	**1**	**0**	**0**	**0**	**0**	**12**	**52**	**10**	**2**	**6**	**0**	**0**	**0**	**0**	**2**	**25**	**24**	**23**	**1**	**0**	**2**	**0**	**0**	**0**	**2**	**11**	**60**	**22**	**0**	**4**	**1**	**0**	**0**	**0**	**23**	**330**
16:00	**16**	**16**	**17**	**6**	**0**	**3**	**0**	**0**	**0**	**0**	**14**	**43**	**11**	**1**	**5**	**0**	**0**	**0**	**0**	**1**	**35**	**16**	**25**	**4**	**0**	**2**	**0**	**0**	**0**	**15**	**14**	**66**	**20**	**0**	**11**	**3**	**0**	**0**	**0**	**75**	**419**
16:15	**19**	**18**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**11**	**45**	**7**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**23**	**20**	**23**	**0**	**0**	**2**	**0**	**0**	**0**	**3**	**14**	**94**	**27**	**0**	**7**	**1**	**0**	**0**	**0**	**12**	**346**
16:30	8	14	16	0	0	0	0	0	0	0	14	48	11	0	9	0	0	0	0	0	29	21	33	2	0	0	0	0	0	0	13	85	37	0	1	3	0	0	0	4	348
16:45	9	20	10	1	0	0	0	0	0	0	12	46	8	2	10	1	0	0	0	0	16	22	27	1	0	0	0	0	0	2	12	96	29	1	4	1	0	0	0	4	334
17:00	7	23	7	1	0	1	0	0	0	0	14	40	4	1	2	0	0	0	0	0	29	26	24	0	0	2	0	0	0	0	14	79	33	0	4	1	0	0	0	4	316
17:15	11	14	6	0	0	0	0	0	0	0	14	54	2	0	3	0	0	0	0	0	29	21	31	0	0	1	0	0	0	0	14	93	25	0	8	1	0	0	0	4	331
17:30	5	7	8	0	0	0	0	0	0	0	13	36	2	0	6	0	0	0	0	2	22	17	19	0	0	0	0	0	0	1	10	67	32	1	5	0	0	0	0	3	256
17:45	5	12	8	0	0	0	0	0	0	0	5	37	6	0	6	0	0	0	0	1	13	9	27	0	0	0	0	0	0	0	8	72	25	0	4	0	0	0	0	2	240
18:00	4	15	7	1	0	0	0	0	0	0	10	51	6	0	2	0	0	0	0	1	26	24	18	0	0	0	0	0	0	0	17	63	23	0	3	0	0	0	0	1	272
18:15	2	8	6	0	0	0	0	0	0	0	21	30	4	0	1	0	0	0	0	3	14	17	19	0	0	0	0	0	0	0	12	55	23	0	0	1	0	0	0	0	216
18:30	2	6	10	1	0	0	0	0	0	0	9	38	5	0	1	0	0	0	0	0	22	10	16	0	0	0	0	0	0	0	13	84	16	0	3	1	0	0	0	2	239
18:45	2	8	8	0	0	0	0	0	0	0	11	33	3	0	1	0	0	0	0	3	11	7	15	0	0	0	0	0	0	1	7	44	15	0	1	0	0	0	0	0	170
19:00	0	4	3	0	0	0	0	0	0	2	7	34	3	1	2	0	0	0	0	0	13	14	14	0	0	0	0	0	0	2	15	54	19	0	1	0	0	0	0	2	190
19:15	4	10	7	0	0	0	0	0	0	0	12	31	4	0	1	0	0	0	0	2	12	8	6	0	0	0	0	0	0	6	5	30	13	0	0	0	0	0	0	0	151
19:30	11	14	8	0	0	0	0	0	0	0	10	21	3	0	2	0	0	0	0	0	15	10	9	0	0	0	0	0	0	3	1	31	21	0	0	0	0	0	0	0	159
19:45	5	8	10	0	0	0	0	0	0	0	9	23	0	0	2	0	0	0	0	1	15	10	8	0	0	0	0	0	0	3	4	29	20	0	5	0	0	0	0	0	152
20:00	1	2	4	0	0	0	0	0	0	0	5	25	1	0	2	0	0	0	0	0	15	4	9	0	0	0	0	0	0	2	2	25	16	0	2	0	0	0	0	0	115
20:15	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*
20:30	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*

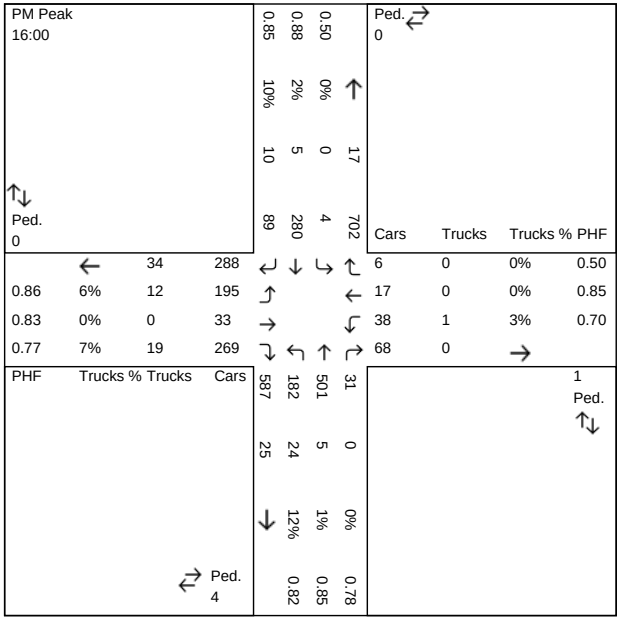
TMC Tabular Report

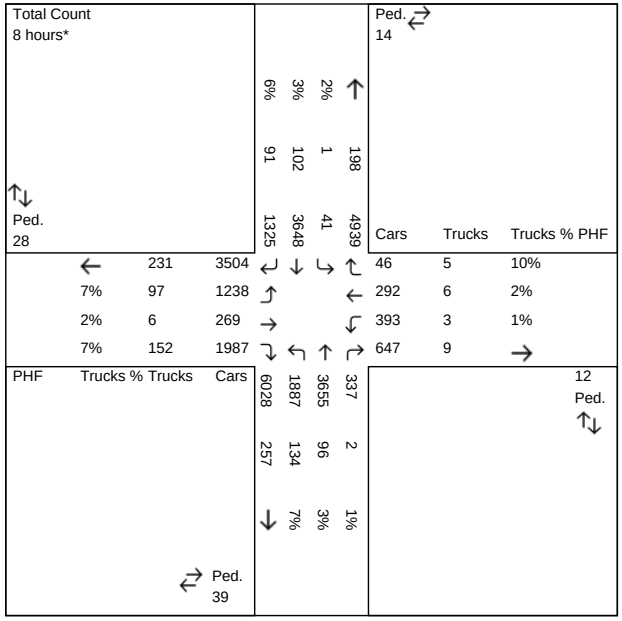
Simcoe St (R.R.02) @ Reach St (R.R.08)/Coulter St (359)

TMC No: 0026200000 **Intersection ID:** 1201 **Count ID:** 35702052083 **Count Date:** 05/08/2024, Wed









Simcoe St (R.R.02) @ Reach St (R.R.08)/Coulter St (359)

TMC No: 0026200000 **Intersection ID:** 1201 **Count ID:** 35702052083 **Count Date:** 05/08/2024, Wed

Time	NORTH APPROACH										EAST APPROACH										SOUTH APPROACH										WEST APPROACH										
	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Total
	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	Left	Thru	Right	Left	Thru	Right		
Period 1																																								
05:00	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*
05:15	0*	22*	18*	0*	0*	2*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	2*	4*	0*	0*	0*	0*	0*	2*	0*	4*	0*	0*	1*	0*	0*	0*	0*	0*	0*	55*
05:30	0*	34*	28*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	9*	5*	0*	0*	0*	0*	0*	2*	0*	2*	0*	0*	2*	0*	0*	0*	0*	0*	0*	82*
05:45	0*	45*	24*	0*	1*	2*	0*	0*	0*	0*	1*	1*	0*	0*	0*	0*	0*	0*	0*	0*	12*	3*	0*	1*	0*	0*	0*	0*	0*	2*	0*	0*	2*	0*	0*	0*	0*	0*	0*	96*
06:00	0	59	34	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	18	4	0	1	1	0	0	0	0	0	2	1	7	0	0	0	0	0	0	132
06:15	0	67	33	0	1	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	25	12	0	0	1	0	0	0	0	0	3	2	12	0	0	2	0	0	0	163
06:30	0	74	31	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	27	22	1	0	5	0	0	0	0	1	1	1	10	0	0	4	0	0	0	182
06:45	1	75	44	0	2	3	0	0	0	1	1	3	0	0	0	0	0	0	0	0	29	14	0	1	1	0	0	0	0	0	3	0	16	2	0	3	0	0	0	199
07:00	2	69	42	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3	25	17	1	5	1	0	0	0	0	3	6	1	13	2	0	8	0	0	0	206
07:15	0	70	33	0	2	1	0	0	0	1	3	2	0	0	0	0	0	0	0	1	30	27	0	1	3	0	0	0	0	1	4	1	13	1	0	6	0	0	0	201
07:30	0	81	44	0	1	3	0	0	0	0	4	3	0	0	0	0	0	0	0	0	43	40	0	2	3	0	0	0	0	0	4	0	16	2	0	4	0	0	0	251
07:45	0	76	53	0	5	1	0	0	0	1	5	6	0	0	0	0	0	0	0	0	39	31	2	2	2	0	0	0	0	0	12	3	13	1	0	4	0	0	0	256
08:00	0	112	47	0	4	1	0	0	0	0	7	6	0	0	0	0	0	0	0	0	51	63	5	2	7	0	0	0	0	2	14	4	29	3	1	0	0	0	0	359
08:15	0	75	52	0	3	2	0	0	0	2	5	9	1	0	1	0	0	0	0	1	42	61	4	3	1	0	0	0	0	1	6	2	34	2	1	8	0	0	0	317
08:30	0	72	42	0	1	3	0	0	0	2	4	6	1	0	0	0	0	0	0	0	45	51	5	2	2	0	0	0	0	0	19	5	32	3	0	2	0	0	0	301
08:45	0	77	42	0	3	5	0	0	0	0	7	8	1	0	0	0	0	0	0	0	44	35	9	2	3	0	0	0	0	4	7	4	46	5	0	3	0	0	0	305
09:00	**1**	**107**	**32**	**0**	**6**	**3**	**0**	**0**	**0**	**2**	**6**	**10**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**56**	**45**	**8**	**8**	**4**	**0**	**0**	**0**	**0**	**0**	**14**	**7**	**45**	**1**	**0**	**1**	**0**	**0**	**0**	**360**
09:15	**3**	**68**	**28**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**7**	**6**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**43**	**55**	**3**	**8**	**1**	**0**	**0**	**0**	**0**	**1**	**16**	**7**	**54**	**3**	**0**	**13**	**0**	**0**	**0**	**322**
09:30	**0**	**82**	**24**	**0**	**3**	**2**	**0**	**0**	**0**	**0**	**12**	**9**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**28**	**53**	**4**	**1**	**5**	**0**	**0**	**0**	**0**	**4**	**20**	**9**	**45**	**0**	**0**	**2**	**0**	**0**	**0**	**309**
09:45	**1**	**102**	**30**	**0**	**4**	**1**	**0**	**0**	**0**	**1**	**8**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**31**	**51**	**6**	**5**	**4**	**0**	**0**	**0**	**0**	**3**	**12**	**8**	**39**	**2**	**0**	**0**	**0**	**0**	**1**	**316**
10:00	1	79	32	0	0	4	0	0	0	0	13	6	0	0	0	0	0	0	0	0	34	46	8	4	4	0	0	0	0	1	13	2	31	1	0	4	0	0	0	283
10:15	2	78	22	0	1	1	0	0	0	0	12	12	2	0	1	0	0	0	0	0	34	54	8	3	1	0	0	0	0	3	16	5	30	3	0	3	0	0	0	291
10:30	1	69	17	0	3	0	0	0	0	2	17	4	0	0	0	0	0	0	0	0	28	67	6	2	0	0	0	0	0	0	20	11	27	3	0	7	0	0	0	284
10:45	2	69	29	0	4	2	0	0	0	0	5	14	0	0	0	0	0	0	0	0	36	47	10	1	3	0	0	0	0	0	21	6	28	2	1	1	0	0	0	282
Period 2																																								
11:00	**0**	**92**	**29**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**11**	**6**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**41**	**47**	**9**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**27**	**13**	**31**	**2**	**0**	**2**	**0**	**0**	**1**	**325**
11:15	**1**	**68**	**19**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**11**	**13**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	**62**	**7**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**16**	**5**	**34**	**0**	**0**	**1**	**0**	**0**	**0**	**285**
11:30	**0**	**67**	**18**	**0**	**3**	**5**	**0**	**0**	**0**	**0**	**10**	**10**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**60**	**5**	**2**	**1**	**0**	**0**	**0**	**0**	**1**	**30**	**4**	**32**	**3**	**0**	**2**	**0**	**0**	**0**	**283**
11:45	**2**	**76**	**28**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**4**	**7**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**33**	**57**	**9**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**19**	**6**	**45**	**1**	**0**	**2**	**0**	**0**	**0**	**297**
12:00	0	79	14	0	6	5	0	0	0	0	10	5	1	0	0	2	0	0	0	0	37	63	10	2	2	0	0	0	0	1	23	3	31	0	0	3	0	0	0	298
12:15	1	54	22	1	4	0	0	0	0	0	6	8	0	0	0	0	0	0	0	0	32	69	5	4	0	0	0	0	0	0	24	6	33	1	1	4	0	0	0	277
12:30	2	71	18	0	3	1	0	0	0	1	16	8	2	0	0	0	0	0	0	0	28	67	12	5	2	0	0	0	0	0	20	0	46	2	1	4	0	0	0	310
12:45	1	62	17	0	0	3	0	0	0	0	10	4	2	0	0	0	0	0	0	0	28	65	8	1	1	0	0	0	0	1	25	4	44	3	0	5	0	0	0	284
13:00	0	75	21	0	1	0	0	0	0	0	10	6	0	0	0	0	0	0	0	0	43	85	9	0	1	0	0	0	0	0	15	8	31	2	0	2	0	0	0	309
13:15	0*	71*	25*	0*	3*	4*	0*	0*	0*	0*	6*	6*	1*	0*	0*	0*	0*	0*	0*	0*	38*	73*	13*	5*	0*	0*	0*	0*	0*	1*	22*	2*	23*	2*	0*	2*	0*	0*	0*	297*
13:30	2*	80*	18*	0*	4*	1*	0*	0*	0*	0*	8*	5*	0*	0*	0*	0*	0*	0*	0*	0*	42*	87*	9*	3*	1*	0*	0*	0*	0*	0*	24*	8*	37*	3*	0*	3*	0*	0*	0*	335*
13:45	0*	65*	23*	0*	2*	3*	0*	0*	0*	0*	10*	5*	0*	0*	0*	0*	0*	0*	0*	0*	41*	75*	8*	4*	3*	0*	0*	0*	0*	0*	24*	8*	29*	5*	0*	3*	0*	0*	0*	308*
Period 3																																								
14:00	0	78	17	0	2	3	0	0	0	0	11	6	2	0	0	0	0	0	0	0	27	69	12	3	0	0	0	0	0	0	19	7	40	3	0	4	0	0	0	303
14:15	4	60	22	0	2	2	0	0	0	0	14	5	0	0	0	0	0	0	0	0	29	85	8	2	8	0	0	0	0	1	24	2	29	3	0	3	0	0	0	303
14:30	0	62	19	0	4	1	0	0	0	0	9	8	1	0	0	0	0	0	0	1	38	86	6	4	2	0	0	0	0	1	37	6	39	2	0	3	0	0	0	329
14:45	2	90	24	0	1	2	0	0	0	0	12	3	0	0	0	1	0	0	0	0	33	88	10	2	1	0	0	0	0	0	30	8	32	0	1	1	0	0	0	341
15:00	2	77	14	0	3	2	0	0	0	0	11	9	1	0	0	0	0	0	0	0	31	99	10	2	1	2	0	0	0	0	28	13	46	0	0	3	0	0	0	354
15:15	0	59	15	0	4	5	0	0	0	1	13	8	1	0	0	0	0	0	0	0	46	87	6	4	0	0	0	0	0	1	46	9	44	3	0	0	0	0	1	353
15:30	1	49	30	0	4	0	0	0	0	0	9	5	1	0	1	0	0	0	0	0	70	101	6	8	1	0	0	0	0	0	41	10	60	6	0	2	0	0	0	405
15:45	1	75	14	0	1	1	0	0	0	0	2	8	2	0	1	0	0	0	0	0	51	95	8	2	3	0	0	0	0	0	39	9	59	1	0	3	0	0	1	376
16:00	**0**	**58**	**21**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**6**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**118**	**6**	**6**	**2**	**0**	**0**	**0**	**0**	**4**	**48**	**7**	**80**	**4**	**0**	**13**	**0**	**0**	**0**	**426**
16:15	**1**	**75**	**20**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**13**	**5**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**38**	**131**	**10**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**43**	**10**	**74**	**3**	**0**	**2**	**0**	**0**	**0**	**437**
16:30	**2**	**79**	**22**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**10**	**5**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**57**	**104**	**7**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**48**	**8**	**69**	**1**	**0**	**2**	**0**	**0**	**0**	**427**
16:45	**1**	**68**	**26**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**9**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**148**	**8**	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**56**	**8**	**46**	**4**	**0**	**2**	**0**	**0**	**0**	**436**
17:00	0	59	19	0	1	3	0	0	0	0	9	5	4	0	2	0	0	0	0	0	33	116	15	3	2	0	0	0	0	0	45	4	58	3	0	0	0	0	1	382
17:15	0	60	21	0	0	5	0	0	0	0	6	7	2	0	0	0	0	0	0	0	40	125	9	3	2	0	0	0	0	2	48	4	80	3	0	0	0	0	0	417
17:30	0	62	16	0	1	3	0	0	0	0	8	5	0	0	0	0	0	0	0	0	43	113	3	1	2	0	0	0	0	0	47	8	69	4	0	2	0	0	1	388
17:45	1	61	23	0	0	0	0	0	0	0	7	6	1	0	0	1	0	0	0	0	32	87	1	3	0	0	0	0	0	1	43	9	50	1	0	2	0	0	0	329
18:00	0	63	21	0	0	0	0	0	0	0	3	3	1	0	0	0	0	0	0	0	37	128	10	0	0	0	0	0	0	0	34	2	42	1	0	2	0	0	0	347
18:15	1	55	16	0	0	0	0	0	0	0	8	2	1	0	0	0	0	0	0	0	19	99	5	0	0	0	0	0	0	1	30	2	39	1	0	0	0	0	0	279
18:30	1	47	13	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	28	78	8	1	0	0	0	0	0	0	18	3	30	3	0	2	0	0	0	238
18:45	1	46	11	0	1	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	24	57	5	0	0	0	0	0	0	0	24	2	31	0	0	0	0	0	1	209
19:00	1	36	10	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	11	48	7	1	0	0	0	0	0	0	16	4	19	0	0	1	0	0	1	158
19:15	0	37	9	0	1	0	0	0	0	0	4	2	1	0	0	0	0	0	0	0	19	69	7	1	0	0	0	0	0	0	21	1	22	0	0	1	0	0	1	196
19:30	0	44	7	0	0	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	29	58	2	0	1	0	0	0	0	1	19	0	27	0	0	2	0	0	1	196
19:45	0	21	9	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	17	45	6	0	0	0	0	0	0	0	11	4	18	0	0	1	0	0	0	135
20:00	1	22	9	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	1	27	51	8	0	1	0	0	0	0	0	11	1	17	1	0	1	0	0	0	155
20:15	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*
20:30	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*

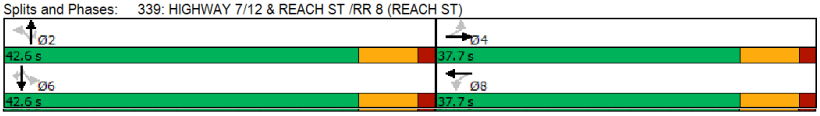
INTERSECTION SIGNAL TIMING REPORT

Location	Hwy. 7/12 and Reach St. (RR8)				
Date	Jan-28-2026	**C&E No.**	82709918	**Prepared by**	M.Farazian
Prepared for	Paradigm Transportation Solutions Limited				

Runs local at all times.

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	42.6	37.7	42.6	37.7
Maximum Split (%)	53.1%	46.9%	53.1%	46.9%
Minimum Split (s)	33	26	33	26
Yellow Time (s)	5.9	5.9	5.9	5.9
All-Red Time (s)	1.7	1.8	1.7	1.8
Minimum Initial (s)	25	12	25	12
Vehicle Extension (s)	0.3	3	0.3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	11	13	11	13
Flash Dont Walk (s)	5	5	5	5
Intersection Summary				
Cycle Length			80.3	
Control Type			Semi Act-Uncoord	
Natural Cycle			60	

Splits and Phases: 339: HIGHWAY 7/12 & REACH ST /RR 8 (REACH ST)



*Please note a concerted effort has been made to ensure the accuracy and completeness of the data provided, however, inadvertent errors or omissions can still occur. Please bring any errors or omissions to the Region's attention.

INTERSECTION SIGNAL TIMING REPORT

Location	Simcoe St. and Reach St.				
Date	01-29-2026	**C&E No.**	82709918	**Prepared by**	M. Farazian
Prepared for	Paradigm Transportation Solutions Limited				

AM Peak (6:00-9:00)

01-28-2026

Phase Number	2	3	4	6	7	8
Movement	NBTL	Ped	EBTL	SBTL	Ped	WBTL
Lead/Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize		Yes	Yes		Yes	Yes
Recall Mode	C-Max	None	None	C-Max	None	None
Maximum Split (s)	48.6	5	26.4	48.6	5	26.4
Maximum Split (%)	60.8%	6.3%	33.0%	60.8%	6.3%	33.0%
Minimum Split (s)	29.4	5	26.4	29.4	5	26.4
Yellow Time (s)	4	2	4	4	2	4
All-Red Time (s)	2.4	0	2.4	2.4	0	2.4
Minimum Initial (s)	20	3	8	20	3	8
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	7		2	7		2
Flash Dont Walk (s)	16		13	16		13
Intersection Summary						
Cycle Length			80			
Control Type	Actuated-Coordinated					
Natural Cycle			70			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green						

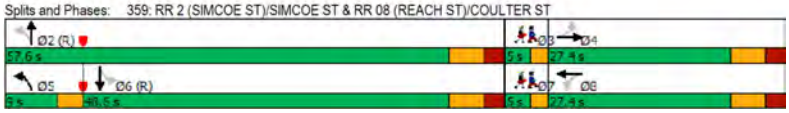
Splits and Phases: 359: RR 2 (SIMCOE ST) & RR 8 (REACH ST)



PM Peak (15:00-22:00)

Phase Number	2	3	4	5	6	7	8
Movement	NBTL	Ped	EBTL	NBL	SBTL	Ped	WBTL
Lead/Lag		Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	57.6	5	27.4	9	48.6	5	27.4
Maximum Split (%)	64.0%	5.6%	30.4%	10.0%	54.0%	5.6%	30.4%
Minimum Split (s)	29.4	5	26.4	8	29.4	5	26.4
Yellow Time (s)	4	2	4	3	4	2	4
All-Red Time (s)	2.4	0	2.4	0	2.4	0	2.4
Minimum Initial (s)	20	3	8	5	20	3	8
Vehicle Extension (s)	0.2	0.2	3	3	0.2	0.2	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)	7		2		7		2
Flash Dont Walk (s)	16		13		16		13
Intersection Summary							
Cycle Length			90				
Control Type	Actuated-Coordinated						
Natural Cycle			70				
Offset: 71.1 (79%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green							

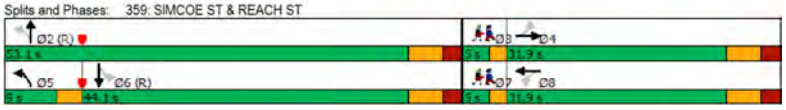
Splits and Phases: 359: RR 2 (SIMCOE ST)/SIMCOE ST & RR 08 (REACH ST)/COULTER ST



Weekend Peak (08:00-22:00)

Phase Number	2	3	4	5	6	7	8
Movement	NBTL	Ped	EBTL	NBL	SBTL	Ped	WBTL
Lead/Lag		Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	53.1	5	31.9	9	44.1	5	31.9
Maximum Split (%)	59.0%	5.6%	35.4%	10.0%	49.0%	5.6%	35.4%
Minimum Split (s)	29.4	5	26.4	8	29.4	5	26.4
Yellow Time (s)	4	2	4	3	4	2	4
All-Red Time (s)	2.4	0	2.4	0	2.4	0	2.4
Minimum Initial (s)	20	3	8	5	20	3	8
Vehicle Extension (s)	0.2	0.2	3	3	0.2	0.2	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)	7		2		7		2
Flash Dont Walk (s)	16		13		16		13
Intersection Summary							
Cycle Length			90				
Control Type	Actuated-Coordinated						
Natural Cycle			70				
Offset: 6.3 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green							

Splits and Phases: 359: SIMCOE ST & REACH ST



**Please note a concerted effort has been made to ensure the accuracy and completeness of the data provided, however, inadvertent errors or omissions can still occur. Please bring any errors or omissions to the Region's attention.*

INTERSECTION SIGNAL TIMING REPORT

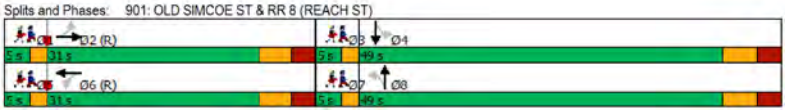
Location	Reach St. (RR 8) and Old Simcoe St.				
Date	01-28-2026	**C&E No.**	82709918	**Prepared by**	J. Chin
Prepared for	Paradigm Transportation Solutions				

AM Peak (8:30-9:15)

01-28-2026

Phase Number	1	2	3	4	5	6	7	8
Movement	Ped	EBTL	Ped	SBTL	Ped	WBTL	Ped	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	Max	None	C-Max	None	Max
Maximum Split (s)	5	31	5	49	5	31	5	49
Maximum Split (%)	5.6%	34.4%	5.6%	54.4%	5.6%	34.4%	5.6%	54.4%
Minimum Split (s)	5	29	5	29	5	29	5	29
Yellow Time (s)	2	3.8	2	4	2	3.8	2	4
All-Red Time (s)	0	2.8	0	2.9	0	2.8	0	2.9
Minimum Initial (s)	3	20	3	8	3	20	3	8
Vehicle Extension (s)	0.2	0.2	0.2	3	0.2	0.2	0.2	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		2		5		2		5
Flash Dont Walk (s)		14		16		14		16
Intersection Summary								
Cycle Length				90				
Control Type		Actuated-Coordinated						
Natural Cycle				70				
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green								

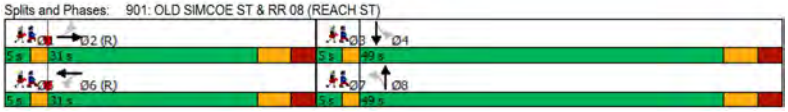
Splits and Phases: 901: OLD SIMCOE ST & RR 8 (REACH ST)



PM Peak (15:30-16:30)

Phase Number	1	2	3	4	5	6	7	8
Movement	Ped	EBTL	Ped	SBTL	Ped	WBTL	Ped	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	Max	None	C-Max	None	Max
Maximum Split (s)	5	31	5	49	5	31	5	49
Maximum Split (%)	5.6%	34.4%	5.6%	54.4%	5.6%	34.4%	5.6%	54.4%
Minimum Split (s)	5	26.8	5	28	5	26.8	5	28
Yellow Time (s)	2	3.9	2	4	2	3.9	2	4
All-Red Time (s)	0	2.9	0	3	0	2.9	0	3
Minimum Initial (s)	3	20	3	8	3	20	3	8
Vehicle Extension (s)	0.2	0.2	0.2	3	0.2	0.2	0.2	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		2		5		2		5
Flash Dont Walk (s)		14		16		14		16
Intersection Summary								
Cycle Length				90				
Control Type		Actuated-Coordinated						
Natural Cycle				65				
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green								

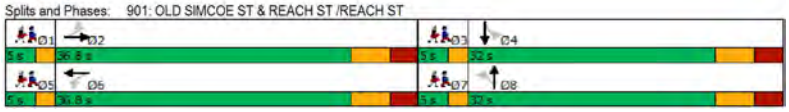
Splits and Phases: 901: OLD SIMCOE ST & RR 08 (REACH ST)



Weekend Peak (Runs Local All Day)

Phase Number	1	2	3	4	5	6	7	8
Movement	Ped	EBTL	Ped	SBTL	Ped	WBTL	Ped	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	None	None	None	Max
Maximum Split (s)	5	36.8	5	32	5	36.8	5	32
Maximum Split (%)	6.3%	46.7%	6.3%	40.6%	6.3%	46.7%	6.3%	40.6%
Minimum Split (s)	5	26.8	5	28	5	26.8	5	28
Yellow Time (s)	2	3.9	2	4	2	3.9	2	4
All-Red Time (s)	0	2.9	0	3	0	2.9	0	3
Minimum Initial (s)	3	20	3	8	3	20	3	8
Vehicle Extension (s)	0.2	0.2	0.2	3	0.2	0.2	0.2	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		2		5		2		5
Flash Dont Walk (s)		14		16		14		16
Intersection Summary								
Cycle Length				78.8				
Control Type		Actuated-Uncoordinated						
Natural Cycle				65				

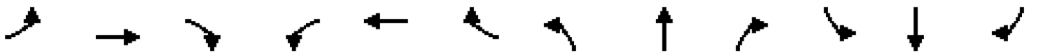
Splits and Phases: 901: OLD SIMCOE ST & REACH ST /REACH ST



**Please note a concerted effort has been made to ensure the accuracy and completeness of the data provided, however, inadvertent errors or omissions can still occur. Please bring any errors or omissions to the Region's attention.*

Appendix C

Existing Traffic Operations Reports

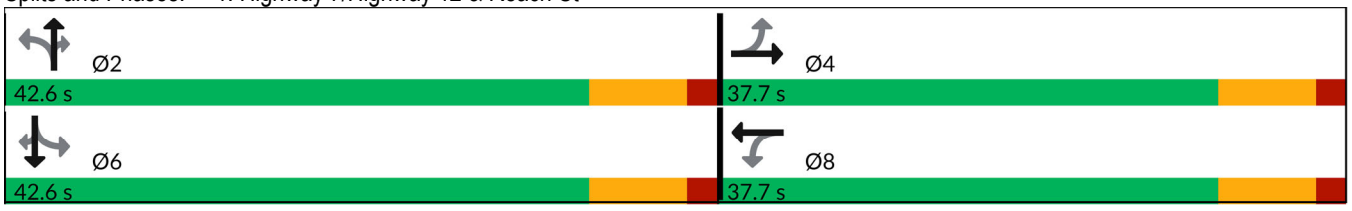


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	125	86	111	117	72	86	207	91	107	241	1
Future Volume (vph)	1	125	86	111	117	72	86	207	91	107	241	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.945			0.968				0.850			0.850
Flt Protected					0.982		0.950			0.950		
Satd. Flow (prot)	0	1679	0	0	1592	0	1597	1606	1390	1643	1579	772
Flt Permitted		0.998			0.807		0.597			0.618		
Satd. Flow (perm)	0	1676	0	0	1308	0	1004	1606	1390	1069	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			23				99			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			3061.0			298.7			443.4	
Travel Time (s)		54.8			157.4			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	136	93	121	127	78	93	225	99	116	262	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	230	0	0	326	0	93	225	99	116	262	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		19.5			19.5		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio		0.32			0.32		0.42	0.42	0.42	0.42	0.42	0.42
v/c Ratio		0.40			0.74		0.22	0.33	0.15	0.26	0.40	0.00
Control Delay (s/veh)		13.8			27.6		15.3	15.4	4.4	15.7	16.2	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		13.8			27.6		15.3	15.4	4.4	15.7	16.2	0.0
LOS		B			C		B	B	A	B	B	A
Approach Delay (s/veh)		13.8			27.6			12.8			16.0	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 60.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 17.4		Intersection LOS: B	
Intersection Capacity Utilization 95.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	230	326	93	225	99	116	262	1
v/c Ratio	0.40	0.74	0.22	0.33	0.15	0.26	0.40	0.00
Control Delay (s/veh)	13.8	27.6	15.3	15.4	4.4	15.7	16.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.8	27.6	15.3	15.4	4.4	15.7	16.2	0.0
Queue Length 50th (m)	14.7	28.8	6.2	15.6	0.0	7.8	18.8	0.0
Queue Length 95th (m)	28.8	52.8	18.9	38.7	8.5	22.8	45.5	0.0
Internal Link Dist (m)	1041.3	3037.0		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	868	670	589	943	857	628	927	479
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.49	0.16	0.24	0.12	0.18	0.28	0.00

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	125	86	111	117	72	86	207	91	107	241	1
Future Volume (vph)	1	125	86	111	117	72	86	207	91	107	241	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1679			1591		1597	1606	1390	1643	1579	772
Flt Permitted		1.00			0.81		0.60	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)		1677			1307		1004	1606	1390	1068	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	136	93	121	127	78	93	225	99	116	262	1
RTOR Reduction (vph)	0	33	0	0	16	0	0	0	57	0	0	1
Lane Group Flow (vph)	0	197	0	0	310	0	93	225	42	116	262	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		19.5			19.5		25.3	25.3	25.3	25.3	25.3	25.3
Effective Green, g (s)		19.5			19.5		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio		0.32			0.32		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		544			424		422	676	585	449	664	324
v/s Ratio Prot								0.14			c0.17	
v/s Ratio Perm		0.12			c0.24		0.09		0.03	0.11		0.00
v/c Ratio		0.36			0.73		0.22	0.33	0.07	0.26	0.39	0.00
Uniform Delay, d1		15.5			18.0		11.1	11.7	10.4	11.3	12.1	10.1
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4			6.4		0.1	0.1	0.0	0.1	0.1	0.0
Delay (s)		16.0			24.4		11.2	11.8	10.4	11.4	12.2	10.1
Level of Service		B			C		B	B	B	B	B	B
Approach Delay (s/veh)		16.0			24.4			11.3			12.0	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	15.3
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

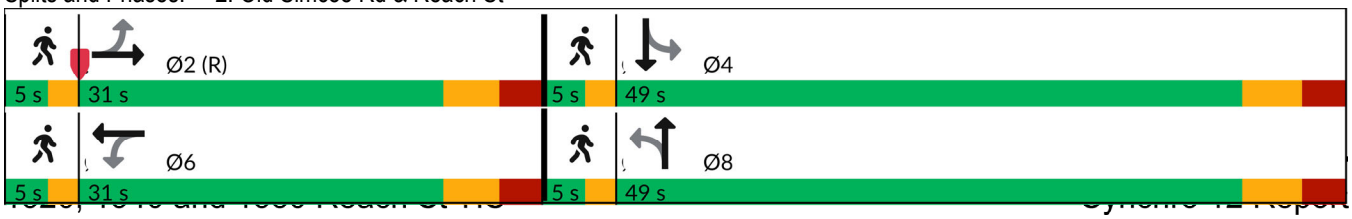
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	183	94	114	228	55	100	74	61	54	115	55
Future Volume (vph)	45	183	94	114	228	55	100	74	61	54	115	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.97			0.84	0.99		1.00	0.93	
Frt		0.949			0.971			0.932			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1535	0	1658	1683	0	1627	1664	0	1500	1570	0
Flt Permitted	0.458			0.467			0.641			0.664		
Satd. Flow (perm)	815	1535	0	792	1683	0	923	1664	0	1046	1570	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			13			62			36	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		3061.0			491.4			406.1			330.3	
Travel Time (s)		220.4			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	49	199	102	124	248	60	109	80	66	59	125	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	301	0	124	308	0	109	146	0	59	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.4	24.4		24.4	24.4		42.1	42.1		42.1	42.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
v/c Ratio	0.18	0.58		0.48	0.55		0.23	0.16		0.11	0.22	
Control Delay (s/veh)	24.1	28.0		31.8	28.3		13.2	7.0		11.6	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	24.1	28.0		31.8	28.3		13.2	7.0		11.6	10.0	
LOS	C	C		C	C		B	A		B	B	
Approach Delay (s/veh)		27.4			29.3			9.6			10.4	
Approach LOS		C			C			A			B	

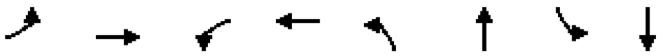
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 21.3		Intersection LOS: C	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



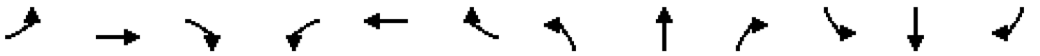
Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



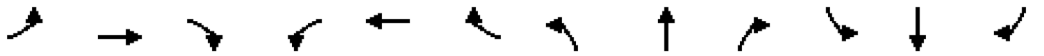
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	301	124	308	109	146	59	185
v/c Ratio	0.18	0.58	0.48	0.55	0.23	0.16	0.11	0.22
Control Delay (s/veh)	24.1	28.0	31.8	28.3	13.2	7.0	11.6	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.1	28.0	31.8	28.3	13.2	7.0	11.6	10.0
Queue Length 50th (m)	6.0	38.8	17.0	41.5	9.6	6.9	4.9	12.9
Queue Length 95th (m)	14.7	64.8	34.3	66.9	19.4	16.0	11.1	24.1
Internal Link Dist (m)		3037.0		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	266	520	258	558	483	900	547	838
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.58	0.48	0.55	0.23	0.16	0.11	0.22

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	183	94	114	228	55	100	74	61	54	115	55
Future Volume (vph)	45	183	94	114	228	55	100	74	61	54	115	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.93	
Flpb, ped/bikes	1.00	1.00		0.97	1.00		0.84	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	0.93		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1536		1610	1682		1368	1665		1497	1571	
Flt Permitted	0.46	1.00		0.47	1.00		0.64	1.00		0.66	1.00	
Satd. Flow (perm)	815	1536		792	1682		923	1665		1046	1571	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	199	102	124	248	60	109	80	66	59	125	60
RTOR Reduction (vph)	0	19	0	0	9	0	0	30	0	0	17	0
Lane Group Flow (vph)	49	282	0	124	299	0	109	116	0	59	168	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Effective Green, g (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	266	501		258	549		483	871		547	822	
v/s Ratio Prot		c0.18			0.18			0.07			0.11	
v/s Ratio Perm	0.06			0.16			c0.12			0.06		
v/c Ratio	0.18	0.56		0.48	0.55		0.23	0.13		0.11	0.20	
Uniform Delay, d1	21.7	25.0		24.2	24.8		11.6	11.0		10.8	11.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	4.5		6.3	3.9		1.1	0.3		0.4	0.6	
Delay (s)	23.2	29.5		30.5	28.7		12.7	11.3		11.2	12.0	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s/veh)		28.6			29.2			11.9			11.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



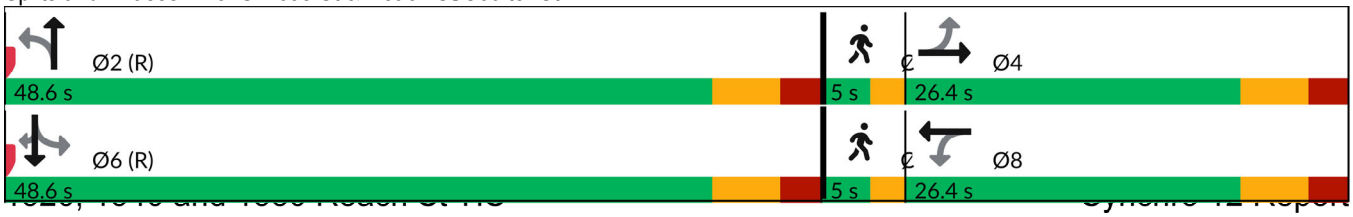
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	32	203	35	31	6	184	222	21	5	382	124
Future Volume (vph)	69	32	203	35	31	6	184	222	21	5	382	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.871			0.974			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1477	0	1675	1770	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.730			0.357			0.512			0.596		
Satd. Flow (perm)	1207	1477	0	621	1770	0	827	1754	0	1077	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		221			7			9				135
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	75	35	221	38	34	7	200	241	23	5	415	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	256	0	38	41	0	200	264	0	5	415	135
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	11.2	11.2		11.2	11.2		56.0	56.0		56.0	56.0	56.0
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.70	0.70		0.70	0.70	0.70
v/c Ratio	0.45	0.65		0.44	0.16		0.35	0.21		0.01	0.33	0.13
Control Delay (s/veh)	39.0	14.9		46.4	26.1		7.6	5.1		4.8	6.1	1.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.0	14.9		46.4	26.1		7.6	5.1		4.8	6.1	1.4
LOS	D	B		D	C		A	A		A	A	A
Approach Delay (s/veh)		20.3			35.9			6.2			4.9	
Approach LOS		C			D			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 10.6		Intersection LOS: B	
Intersection Capacity Utilization 79.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



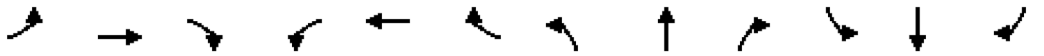
Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	75	256	38	41	200	264	5	415	135
v/c Ratio	0.45	0.65	0.44	0.16	0.35	0.21	0.01	0.33	0.13
Control Delay (s/veh)	39.0	14.9	46.4	26.1	7.6	5.1	4.8	6.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.0	14.9	46.4	26.1	7.6	5.1	4.8	6.1	1.4
Queue Length 50th (m)	10.8	4.8	5.4	4.7	9.5	10.8	0.2	19.4	0.0
Queue Length 95th (m)	21.3	23.9	13.5	12.0	26.3	25.3	1.4	42.5	5.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	301	535	155	447	579	1231	754	1265	1024
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.48	0.25	0.09	0.35	0.21	0.01	0.33	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	32	203	35	31	6	184	222	21	5	382	124
Future Volume (vph)	69	32	203	35	31	6	184	222	21	5	382	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1570	1476		1654	1771		1534	1754		1716	1807	1404
Flt Permitted	0.73	1.00		0.36	1.00		0.51	1.00		0.60	1.00	1.00
Satd. Flow (perm)	1207	1476		622	1771		827	1754		1077	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	35	221	38	34	7	200	241	23	5	415	135
RTOR Reduction (vph)	0	190	0	0	6	0	0	3	0	0	0	41
Lane Group Flow (vph)	75	66	0	38	35	0	200	261	0	5	415	95
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	11.2	11.2		11.2	11.2		56.0	56.0		56.0	56.0	56.0
Effective Green, g (s)	11.2	11.2		11.2	11.2		56.0	56.0		56.0	56.0	56.0
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.70	0.70		0.70	0.70	0.70
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	168	206		87	247		578	1227		753	1264	982
v/s Ratio Prot		0.04			0.02			0.15			0.23	
v/s Ratio Perm	c0.06			0.06			c0.24			0.00		0.07
v/c Ratio	0.45	0.32		0.44	0.14		0.35	0.21		0.01	0.33	0.10
Uniform Delay, d1	31.6	31.0		31.5	30.2		4.8	4.2		3.6	4.7	3.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.9		3.5	0.3		1.6	0.4		0.0	0.7	0.2
Delay (s)	33.4	31.9		35.0	30.4		6.4	4.6		3.6	5.4	4.1
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s/veh)		32.2			32.6			5.4			5.0	
Approach LOS		C			C			A			A	

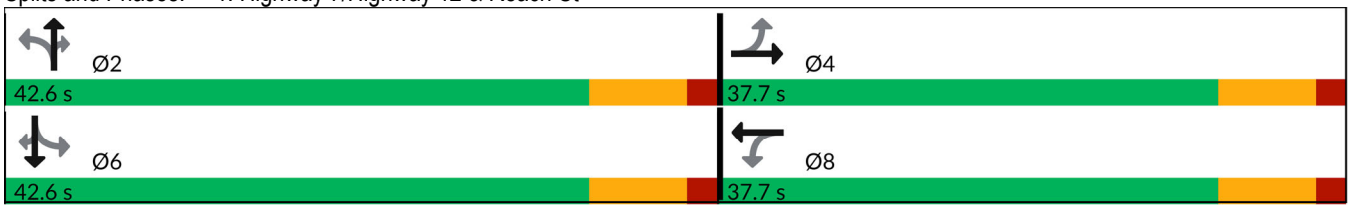
Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	180	118	131	174	120	70	520	189	91	292	2
Future Volume (vph)	10	180	118	131	174	120	70	520	189	91	292	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948			0.962				0.850			0.850
Flt Protected		0.998			0.985		0.950			0.950		
Satd. Flow (prot)	0	1762	0	0	1702	0	1708	1807	1366	1568	1740	1543
Flt Permitted		0.979			0.766		0.533			0.251		
Satd. Flow (perm)	0	1728	0	0	1324	0	958	1807	1366	414	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			28				205			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			3061.0			298.7			443.4	
Travel Time (s)		54.8			157.4			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	11	196	128	142	189	130	76	565	205	99	317	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	335	0	0	461	0	76	565	205	99	317	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		28.3			28.3		27.8	27.8	27.8	27.8	27.8	27.8
Actuated g/C Ratio		0.40			0.40		0.39	0.39	0.39	0.39	0.39	0.39
v/c Ratio		0.47			0.85		0.20	0.80	0.31	0.61	0.47	0.00
Control Delay (s/veh)		17.0			36.7		16.6	29.9	3.7	37.2	19.3	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		17.0			36.7		16.6	29.9	3.7	37.2	19.3	0.0
LOS		B			D		B	C	A	D	B	A
Approach Delay (s/veh)		17.0			36.7			22.4			23.5	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 71.5			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 24.9		Intersection LOS: C	
Intersection Capacity Utilization 114.7%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St

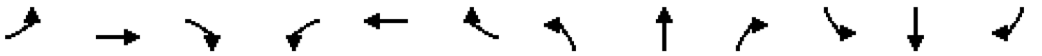




Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	335	461	76	565	205	99	317	2
v/c Ratio	0.47	0.85	0.20	0.80	0.31	0.61	0.47	0.00
Control Delay (s/veh)	17.0	36.7	16.6	29.9	3.7	37.2	19.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.0	36.7	16.6	29.9	3.7	37.2	19.3	0.0
Queue Length 50th (m)	25.5	47.6	6.9	68.3	0.0	10.8	32.2	0.0
Queue Length 95th (m)	56.3	#117.6	15.4	105.0	11.1	#31.5	52.2	0.0
Internal Link Dist (m)	1041.3	3037.0		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	755	575	471	890	777	203	857	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.80	0.16	0.63	0.26	0.49	0.37	0.00

Intersection Summary

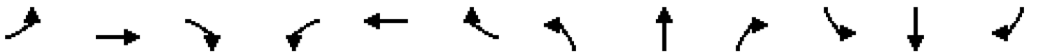
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	180	118	131	174	120	70	520	189	91	292	2
Future Volume (vph)	10	180	118	131	174	120	70	520	189	91	292	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1763			1702		1708	1807	1366	1568	1740	1543
Flt Permitted		0.98			0.77		0.53	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)		1728			1324		958	1807	1366	415	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	196	128	142	189	130	76	565	205	99	317	2
RTOR Reduction (vph)	0	27	0	0	17	0	0	0	125	0	0	1
Lane Group Flow (vph)	0	308	0	0	444	0	76	565	80	99	317	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		28.3			28.3		27.8	27.8	27.8	27.8	27.8	27.8
Effective Green, g (s)		28.3			28.3		27.8	27.8	27.8	27.8	27.8	27.8
Actuated g/C Ratio		0.40			0.40		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		684			524		373	703	531	161	677	600
v/s Ratio Prot								c0.31			0.18	
v/s Ratio Perm		0.18			c0.34		0.08		0.06	0.24		0.00
v/c Ratio		0.45			0.85		0.20	0.80	0.15	0.61	0.47	0.00
Uniform Delay, d1		15.8			19.6		14.5	19.4	14.1	17.5	16.3	13.3
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5			12.1		0.1	6.3	0.0	4.8	0.2	0.0
Delay (s)		16.3			31.7		14.6	25.6	14.2	22.3	16.5	13.3
Level of Service		B			C		B	C	B	C	B	B
Approach Delay (s/veh)		16.3			31.7			21.9			17.8	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	15.3
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



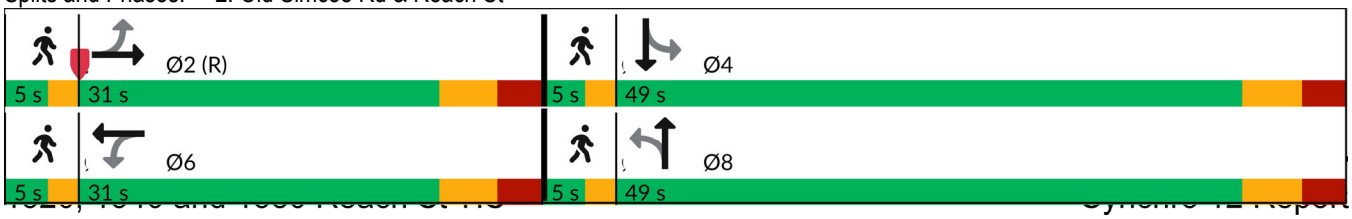
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	317	109	66	284	39	120	90	104	74	74	60
Future Volume (vph)	56	317	109	66	284	39	120	90	104	74	74	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.98	0.99		0.79	0.98		0.98	0.88	
Frt		0.962			0.982			0.920			0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1635	0	1643	1660	0	1658	1620	0	1500	1466	0
Flt Permitted	0.401			0.254			0.665			0.626		
Satd. Flow (perm)	721	1635	0	431	1660	0	913	1620	0	969	1466	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			7			86			61	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		3061.0			491.4			406.1			330.3	
Travel Time (s)		220.4			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	61	345	118	72	309	42	130	98	113	80	80	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	463	0	72	351	0	130	211	0	80	145	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.2	24.2		24.2	24.2		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
v/c Ratio	0.26	0.85		0.52	0.65		0.27	0.24		0.16	0.18	
Control Delay (s/veh)	26.3	44.2		52.0	41.3		13.9	7.5		12.3	7.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	26.3	44.2		52.0	41.3		13.9	7.5		12.3	7.3	
LOS	C	D		D	D		B	A		B	A	
Approach Delay (s/veh)		42.1			43.1			10.0			9.1	
Approach LOS		D			D			A			A	

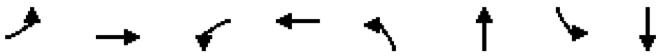
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 30.2		Intersection LOS: C	
Intersection Capacity Utilization 87.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



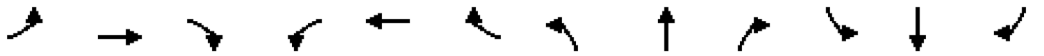
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	61	463	72	351	130	211	80	145
v/c Ratio	0.26	0.85	0.52	0.65	0.27	0.24	0.16	0.18
Control Delay (s/veh)	26.3	44.2	52.0	41.3	13.9	7.5	12.3	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.3	44.2	52.0	41.3	13.9	7.5	12.3	7.3
Queue Length 50th (m)	7.7	71.3	11.7	57.3	11.8	10.6	6.8	7.0
Queue Length 95th (m)	18.0	#124.0	#28.0	89.5	23.2	22.1	14.6	16.2
Internal Link Dist (m)		3037.0		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	233	543	139	543	476	887	506	794
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.85	0.52	0.65	0.27	0.24	0.16	0.18

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	317	109	66	284	39	120	90	104	74	74	60
Future Volume (vph)	56	317	109	66	284	39	120	90	104	74	74	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.98		1.00	0.88	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.79	1.00		0.98	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1707	1634		1608	1660		1304	1619		1471	1465	
Flt Permitted	0.40	1.00		0.25	1.00		0.66	1.00		0.63	1.00	
Satd. Flow (perm)	721	1634		430	1660		912	1619		969	1465	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	345	118	72	309	42	130	98	113	80	80	65
RTOR Reduction (vph)	0	13	0	0	5	0	0	41	0	0	29	0
Lane Group Flow (vph)	61	450	0	72	346	0	130	170	0	80	116	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Effective Green, g (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	233	530		139	538		476	845		506	765	
v/s Ratio Prot		c0.28			0.21			0.10			0.08	
v/s Ratio Perm	0.08			0.17			c0.14			0.08		
v/c Ratio	0.26	0.85		0.52	0.64		0.27	0.20		0.16	0.15	
Uniform Delay, d1	22.4	28.3		24.7	26.0		12.0	11.5		11.2	11.2	
Progression Factor	1.00	1.00		1.43	1.36		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	15.6		12.9	5.7		1.4	0.5		0.7	0.4	
Delay (s)	25.2	43.9		48.3	41.0		13.4	12.0		11.9	11.6	
Level of Service	C	D		D	D		B	B		B	B	
Approach Delay (s/veh)		41.7			42.3			12.5			11.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



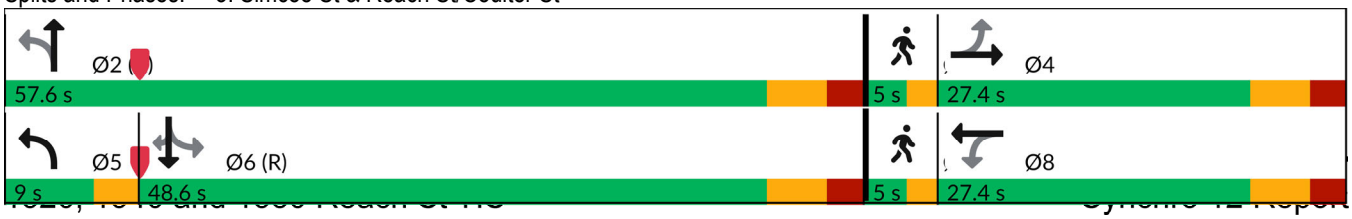
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	34	294	40	17	6	210	516	32	4	291	101
Future Volume (vph)	211	34	294	40	17	6	210	516	32	4	291	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		1.00				1.00		1.00		
Frt		0.866			0.958			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1487	0	1675	1800	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.741			0.279			0.496			0.439		
Satd. Flow (perm)	1269	1487	0	489	1800	0	804	1842	0	796	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		320			7			6				110
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	229	37	320	43	18	7	228	561	35	4	316	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	357	0	43	25	0	228	596	0	4	316	110
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	27.4	27.4		27.4	27.4		9.0	57.6		48.6	48.6	48.6
Total Split (%)	30.4%	30.4%		30.4%	30.4%		10.0%	64.0%		54.0%	54.0%	54.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		6.0	51.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	21.5	21.5		21.5	21.5		59.1	55.7		45.2	45.2	45.2
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.66	0.62		0.50	0.50	0.50
v/c Ratio	0.76	0.60		0.37	0.06		0.39	0.52		0.01	0.34	0.14
Control Delay (s/veh)	34.3	7.8		36.4	19.3		9.4	12.6		13.0	15.7	3.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	34.3	7.8		36.4	19.3		9.4	12.6		13.0	15.7	3.3
LOS	C	A		D	B		A	B		B	B	A
Approach Delay (s/veh)		18.2			30.1			11.7			12.5	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 14.5		Intersection LOS: B	
Intersection Capacity Utilization 94.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

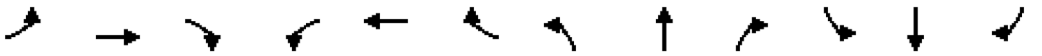
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	229	357	43	25	228	596	4	316	110
v/c Ratio	0.76	0.60	0.37	0.06	0.39	0.52	0.01	0.34	0.14
Control Delay (s/veh)	34.3	7.8	36.4	19.3	9.4	12.6	13.0	15.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.3	7.8	36.4	19.3	9.4	12.6	13.0	15.7	3.3
Queue Length 50th (m)	35.4	18.3	6.1	2.3	14.9	54.7	0.4	33.7	0.0
Queue Length 95th (m)	m46.6	m23.7	15.4	7.9	27.8	89.9	2.1	52.7	8.2
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	329	623	127	472	588	1142	400	925	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.57	0.34	0.05	0.39	0.52	0.01	0.34	0.14

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	34	294	40	17	6	210	516	32	4	291	101
Future Volume (vph)	211	34	294	40	17	6	210	516	32	4	291	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1487		1667	1800		1540	1843		1723	1842	1403
Flt Permitted	0.74	1.00		0.28	1.00		0.50	1.00		0.44	1.00	1.00
Satd. Flow (perm)	1269	1487		489	1800		804	1843		796	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	37	320	43	18	7	228	561	35	4	316	110
RTOR Reduction (vph)	0	244	0	0	5	0	0	2	0	0	0	55
Lane Group Flow (vph)	229	113	0	43	20	0	228	594	0	4	316	55
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	21.5	21.5		21.5	21.5		55.7	55.7		45.2	45.2	45.2
Effective Green, g (s)	21.5	21.5		21.5	21.5		55.7	55.7		45.2	45.2	45.2
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.62	0.62		0.50	0.50	0.50
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	303	355		116	430		558	1140		399	925	704
v/s Ratio Prot		0.08			0.01		0.03	c0.32			0.17	
v/s Ratio Perm	c0.18			0.09			0.22			0.01		0.04
v/c Ratio	0.76	0.32		0.37	0.05		0.41	0.52		0.01	0.34	0.08
Uniform Delay, d1	31.8	28.2		28.6	26.4		8.0	9.6		11.2	13.5	11.6
Progression Factor	0.66	0.86		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.6	0.4		2.0	0.0		0.5	1.7		0.0	1.0	0.2
Delay (s)	29.7	24.7		30.6	26.4		8.4	11.3		11.3	14.5	11.8
Level of Service	C	C		C	C		A	B		B	B	B
Approach Delay (s/veh)		26.7			29.1			10.5			13.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Appendix D

Site Trip Generation – Internal Trip Capture Diagrams and Pass-By Trips

Project: 1520, 1540 and 1580 Reach St
Project #: 250853
Task: Trip Generation

Land Use Code (General Urban/Suburban)	Units	Trip Type	AM Peak Hour				PM Peak Hour			
			Rate	In	Out	Total	Rate	In	Out	Total
130 (Industrial Park)	806,217 ft2	Total	Eqn.	136	41	177	Eqn.	68	175	243
		Pass-by	0%	0	0	0	0%	0	0	0
		Internal Capture	0%	0	0	0	0%	0	0	0
		Net		**136**	**41**	**177**		**68**	**175**	**243**
210 (Single-Family Detached Housing)	382 units	Total	Eqn.	71	191	262	Eqn.	205	125	330
		Pass-by	0%	0	0	0	0%	0	0	0
		Internal Capture	1%	1	1	2	2%	4	2	6
		Net		**70**	**190**	**260**		**201**	**123**	**324**
220 (Multifamily Housing (Low-Rise))	350 units	Total	Eqn.	33	102	135	Eqn.	109	66	175
		Pass-by	0%	0	0	0	0%	0	0	0
		Internal Capture	1%	1	1	2	3%	3	1	5
		Net		**32**	**101**	**133**		**106**	**65**	**170**
221 (Multifamily Housing (Mid-Rise))	285 units	Total	Eqn.	26	86	112	Eqn.	68	38	106
		Pass-by	0%	0	0	0	0%	0	0	0
		Internal Capture	1%	1	1	2	4%	3	1	4
		Net		**25**	**85**	**110**		**65**	**37**	**102**
254 (Assisted Living)	250 units	Total	Eqn.	28	20	48	Eqn.	23	37	60
		Pass-by	0%	0	0	0	0%	0	0	0
		Internal Capture	2%	0	1	1	6%	2	1	3
		Net		**28**	**19**	**47**		**21**	**36**	**57**
822 (Strip Retail Plaza (<40k))	15,000 ft2	Total	Eqn.	32	27	59	Eqn.	47	47	94
		Pass-by	0%	0	0	0	34%	16	16	32
		Internal Capture	12%	4	3	7	18%	5	12	17
		Net		**28**	**24**	**52**		**26**	**19**	**45**
Total (All Land Uses)		**Total**		**326**	**467**	**793**		**520**	**488**	**1008**
		Pass-by		**0**	**0**	**0**		**16**	**16**	**32**
		Internal Capture		**7**	**7**	**14**		**17**	**17**	**34**
		Net		**319**	**460**	**779**		**487**	**455**	**942**

Project: 1520, 1540 and 1580 Reach St
Project #: 250853
Task: Trip Generation

Unconstrained Internal Capture Rates for Trip Origins within a Multi-Use Development

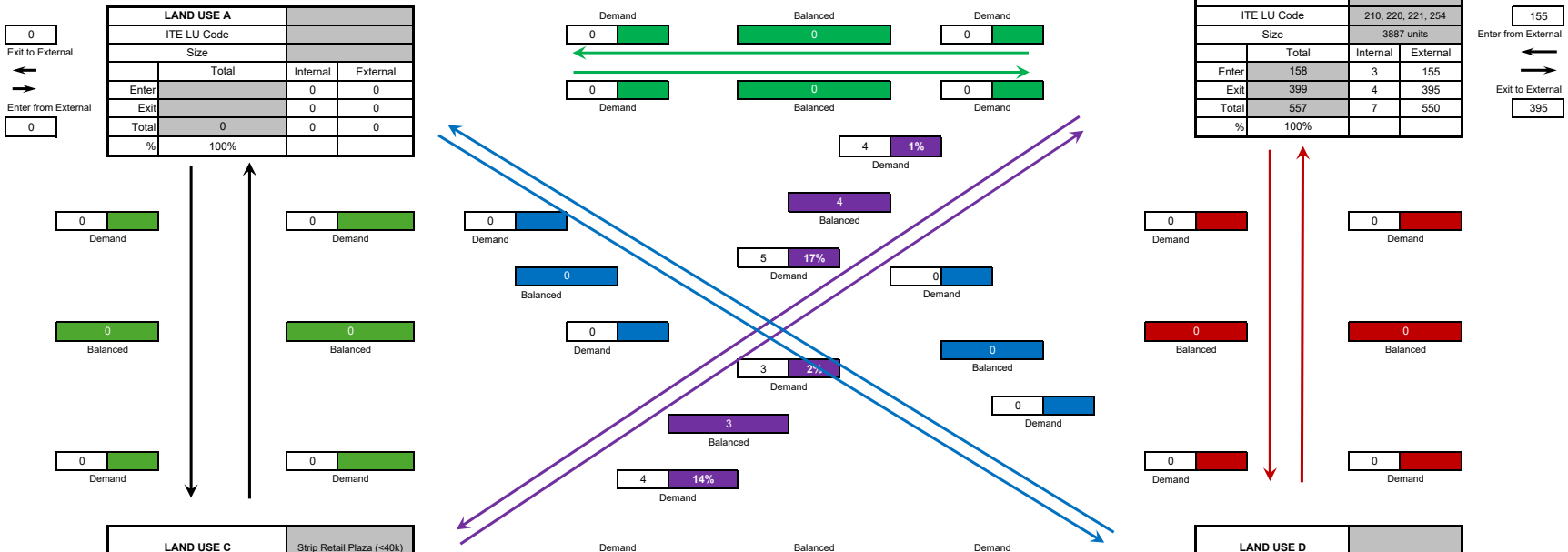
From Residential	to Retail	1%
From Retail	to Residential	14%

Unconstrained Internal Capture Rates for Trip Destinations within a Multi-Use Development

To Residential	from Retail	2%
To Retail	from Residential	17%

Time Period

AM Peak Hour



Net External Trips for Multi-Use Development

	Land Use A	Land Use B	Land Use C	Land Use D	TOTAL
Enter	0	155	28	0	183
Exit	0	395	24	0	419
Total	0	550	52	0	602
Single Use Trip Gen	0	557	59	0	616

Internal Capture
2%

Project: 1520, 1540 and 1580 Reach St
Project #: 250853
Task: Trip Generation

Unconstrained Internal Capture Rates for Trip Origins within a Multi-Use Development

From Residential	to Retail	42%
From Retail	to Residential	26%

Unconstrained Internal Capture Rates for Trip Destinations within a Multi-Use Development

To Residential	from Retail	46%
To Retail	from Residential	10%

Time Period

PM Peak Hour

LAND USE A			
ITE LU Code			
Size			
	Total	Internal	External
Enter		0	0
Exit		0	0
Total	0	0	0
%	100%		

0 Exit to External
0 Enter from External

LAND USE B	Residential		
ITE LU Code	210, 220, 221, 254		
Size	3887 units		
	Total	Internal	External
Enter	405	12	393
Exit	266	5	261
Total	671	17	654
%	100%		

393 Enter from External
261 Exit to External

LAND USE C	Strip Retail Plaza (<40k)		
ITE LU Code	822		
Size	15,000 ft2		
	Total	Internal	External
Enter	47	5	42
Exit	47	12	35
Total	94	17	77
%	100%		

35 Exit to External
42 Enter from External

LAND USE D			
ITE LU Code			
Size			
	Total	Internal	External
Enter		0	0
Exit		0	0
Total	0	0	0
%	100%		

0 Enter from External
0 Exit to External

Net External Trips for Multi-Use Development					
	Land Use A	Land Use B	Land Use C	Land Use D	TOTAL
Enter	0	393	42	0	435
Exit	0	261	35	0	296
Total	0	654	77	0	731
Single Use Trip Gen	0	671	94	0	765

Internal Capture: 4%

Appendix E

TTS Mode Split Data

AM Outbound
Thu Jan 15 2026 15:14:34 GMT-0500 (Eastern Standard Time) - Run Time: 3035ms

Cross Tabulation Query Form - Trip - 2022

Row: 2022 TTS zone of origin - tts22_orig
Column: Primary travel mode of trip - mode_prime

Filters:
2022 TTS zone of origin - tts22_orig In 2296
and
Start time of trip - start_time In 699-900

Trip 2022
ROW : tts22_orig
COLUMN : mode_prime

tts22_orig	mode_prime	total	TTS_mode	%
2296	D	252	Auto driver	100%
		252		

PM Outbound
Thu Jan 15 2026 15:09:17 GMT-0500 (Eastern Standard Time) - Run Time: 2984ms

Cross Tabulation Query Form - Trip - 2022

Row: 2022 TTS zone of origin - tts22_orig
Column: Primary travel mode of trip - mode_prime

Filters:
2022 TTS zone of origin - tts22_orig In 2296
and
Start time of trip - start_time In 1599-1800

Trip 2022
ROW : tts22_orig
COLUMN : mode_prime

tts22_orig	mode_prime	total	TTS_mode	%
2296	D	362	Auto driver	100%
		362		

		AM Outbound	AM Inbound	PM Outbound	PM Inbound
Transit	Transit excluding GO rail	0%	0%	0%	0%
Bicycle	Cycle	0%	0%	0%	0%
Driver	Auto driver	100%	100%	100%	100%
Transit	GO rail only	0%	0%	0%	0%
Transit	Joint GO rail and local transit	0%	0%	0%	0%
Driver	Motorcycle	0%	0%	0%	0%
Other	Other	0%	0%	0%	0%
Driver	Auto passenger	0%	0%	0%	0%
School bus	School bus	0%	0%	0%	0%
Taxi passenger	Taxi passenger	0%	0%	0%	0%
Paid rideshare	Paid rideshare (2016)	0%	0%	0%	0%
Walk	Walk	0%	0%	0%	0%
Other	Unknown	0%	0%	0%	0%
	Total	**100%**	**100%**	**100%**	**100%**

	AM Outbound	AM Inbound	PM Outbound	PM Inbound
Driver	100%	100%	100%	100%
Transit	0%	0%	0%	0%
Bicycle	0%	0%	0%	0%
Walk	0%	0%	0%	0%
Taxi passenger	0%	0%	0%	0%
Paid rideshare	0%	0%	0%	0%
School bus	0%	0%	0%	0%
Other	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**

AM Inbound
Thu Jan 15 2026 15:11:25 GMT-0500 (Eastern Standard Time) - Run Time: 2943ms

Cross Tabulation Query Form - Trip - 2022

Row: 2022 TTS zone of destination - tts22_dest
Column: Primary travel mode of trip - mode_prime

Filters:
2022 TTS zone of destination - tts22_dest In 2296
and
Start time of trip - start_time In 699-900

Trip 2022
ROW : tts22_dest
COLUMN : mode_prime

tts22_dest	mode_prime	total	TTS_mode	%
2296	D	185	Auto driver	100%
		185		

PM Inbound
Thu Jan 15 2026 15:10:54 GMT-0500 (Eastern Standard Time) - Run Time: 3279ms

Cross Tabulation Query Form - Trip - 2022

Row: 2022 TTS zone of destination - tts22_dest
Column: Primary travel mode of trip - mode_prime

Filters:
2022 TTS zone of destination - tts22_dest In 2296
and
Start time of trip - start_time In 1599-1800

Trip 2022
ROW : tts22_dest
COLUMN : mode_prime

tts22_dest	mode_prime	total	TTS_mode	%
2296	D	54	Auto driver	100%
		54		

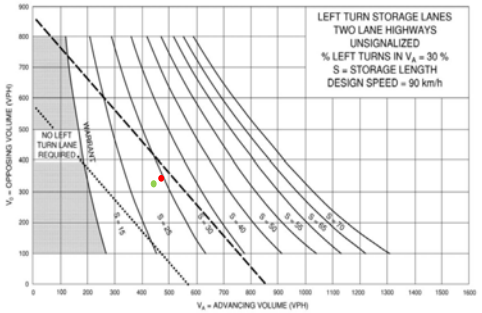
	Out	In	Out	In
Vehicle mode only	**460**	**319**	**455**	**487**
All modes	**460**	**319**	**455**	**487**
Driver/Auto Passenger	460	319	455	487
Transit	0	0	0	0
Bicycle	0	0	0	0
Walk	0	0	0	0
Taxi passenger	0	0	0	0
Paid rideshare	0	0	0	0
School bus	0	0	0	0
Other	0	0	0	0
Total	**460**	**319**	**455**	**487**

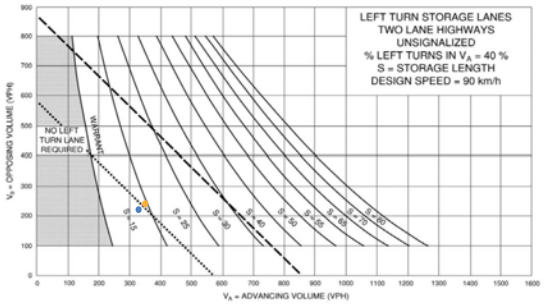
Appendix F

Left Turn Lane Warrant Analysis under Background Conditions

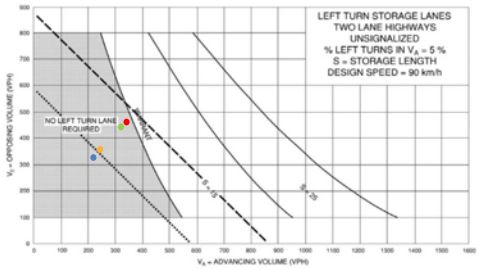
Highway 7/Highway 12 & Reach St

WB LTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Advancing vol	336	449	350	471
Opposing vol	221	318	233	333
LT vol	127	140	132	147
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	15	25	15	25
Deceleration Length	106	106	106	106
Taper Length	70	70	70	70
LT %	38%	31%	38%	31%
MTO Exhibit	9A-22	9A-21	9A-22	9A-21



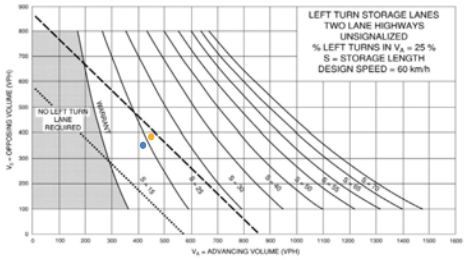


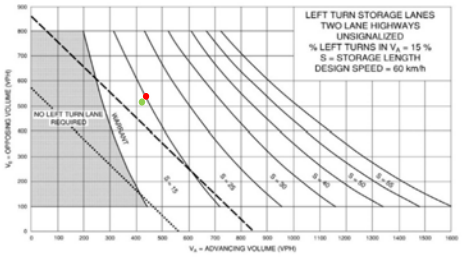
EB LTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Advancing vol	221	318	233	333
Opposing vol	336	449	350	471
LT vol	1	11	1	11
LTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-
LT %	0%	3%	0%	3%
MTO Exhibit	9A-19	9A-19	9A-19	9A-19



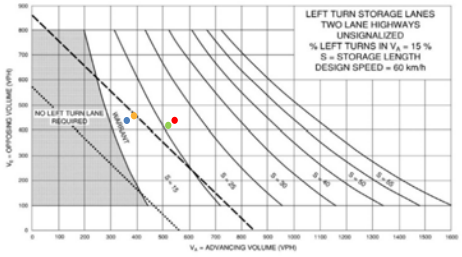
Old Simcoe Rd & Reach St

WB LTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Advancing vol	435	411	456	432
Opposing vol	372	511	390	536
LT vol	117	67	123	71
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	15	15	25	25
Deceleration Length	43	43	43	43
Taper Length	55	55	55	55
LT %	27%	16%	27%	16%
MTO Exhibit	9A-9	9A-8	9A-9	9A-8



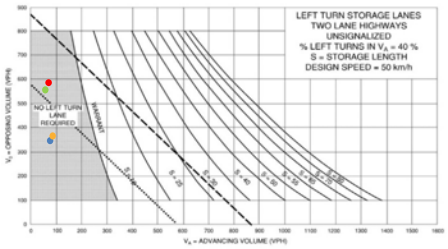


EB LTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Advancing vol	372	511	390	536
Opposing vol	435	411	456	432
LT vol	50	59	53	62
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	15	25	15	25
Deceleration Length	43	43	43	43
Taper Length	55	55	55	55
LT %	13%	12%	14%	12%
MTO Exhibit	9A-8	9A-8	9A-8	9A-8

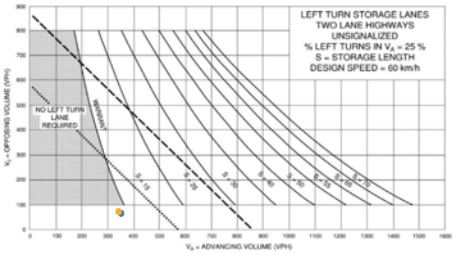


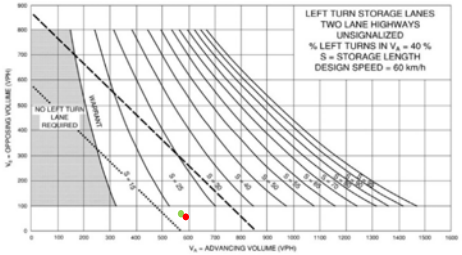
Simcoe St & Reach St/Coulter St

WB LTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Advancing vol	74	65	79	69
Opposing vol	340	563	356	591
LT vol	35	41	37	43
LTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-
LT %	47%	63%	47%	62%
MTO Exhibit	9A-6	9A-6	9A-6	9A-6



EB LTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Advancing vol	340	563	356	591
Opposing vol	74	65	79	69
LT vol	80	222	83	233
LTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-
LT %	24%	39%	23%	39%
MTO Exhibit	9A-9	9A-10	9A-9	9A-10

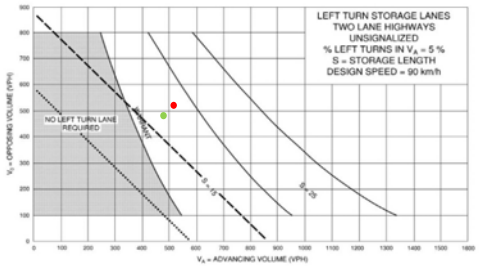


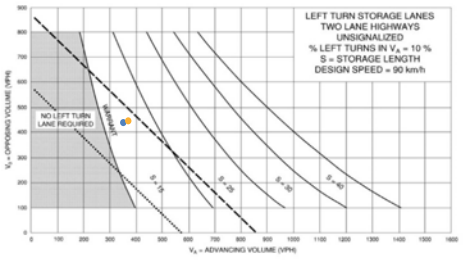


Driveway 4 & Reach St

WB LTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Advancing vol	N/A	N/A	N/A	N/A
Opposing vol	N/A	N/A	N/A	N/A
LT vol	N/A	N/A	N/A	N/A
LTL Warranted	N/A	N/A	N/A	N/A
Storage Length	N/A	N/A	N/A	N/A
Deceleration Length	N/A	N/A	N/A	N/A
Taper Length	N/A	N/A	N/A	N/A
MTO Exhibit	N/A	N/A	N/A	N/A

EB LTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Advancing vol	356	484	374	508
Opposing vol	433	492	453	516
LT vol	28	16	28	16
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	15	15	15	15
Deceleration Length	106	106	106	106
Taper Length	70	70	70	70
LT %	8%	3%	7%	3%
MTO Exhibit	9A-19	9A-19	9A-19	9A-19





Appendix G

Right Turn Lane Warrant Analysis under Background Conditions

Highway 7/Highway 12 & Reach St

WB RTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Approach vol	336	449	350	471
RT vol	83	129	86	135
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

EB RTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Approach vol	221	318	233	333
RT vol	87	121	92	127
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

The Regional Municipality of Durham
Works Department

April 2025

Old Simcoe Rd & Reach St

WB RTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Approach vol	435	411	456	432
RT vol	56	40	59	42
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

EB RTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Approach vol	372	511	390	536
RT vol	105	114	110	120
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

The Regional Municipality of Durham
Works Department

April 2025

Simcoe St & Reach St/Coulter St

WB RTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Approach vol	74	65	79	69
RT vol	6	6	7	7
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

EB RTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Approach vol	340	563	356	591
RT vol	226	307	237	322
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

The Regional Municipality of Durham
Works Department

April 2025

Driveway 4 & Reach St

WB RTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Approach vol	433	492	453	516
RT vol	43	19	43	19
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

EB RTL Warrant	2028 BG AM	2028 BG PM	2033 BG AM	2033 BG PM
Approach vol	N/A	N/A	N/A	N/A
RT vol	N/A	N/A	N/A	N/A
RTL Warranted	N/A	N/A	N/A	N/A
Storage Length	N/A	N/A	N/A	N/A
Deceleration Length	N/A	N/A	N/A	N/A
Taper Length	N/A	N/A	N/A	N/A

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

Appendix H

Traffic Signal Control Warrant Analysis under Background Conditions

Justification 7 - Projected Volumes

Intersection: Reach St and Driveway 4 Count Date: 2024-01-01

Return to Justifications 1 - 6

INPUT

PRIOR TO START - FILL OUT GEOMETRY INPUTS IN THE INPUT DATA SPREADSHEET - STEPS A to D

a.- Both Intersection Roads Exist? No

b.- What kind of count estimate available? AM PM Peak Hour **Proceed to c2**

c1.- 8-Hour Count Estimate

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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

c2.- Peak Hour Estimate

Peak Hour	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	
AM Peak Hour	28	328	0	0	0	0	0	390	43	43	0	28	
PM Peak Hour	16	468	0	0	0	0	0	473	19	19	0	16	
AHV	11	199	0	0	0	0	0	216	16	16	0	11	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	441			**27**									

c3.- AADT Estimate - can leave movements without data blank. If midblock reading, can assign demand to through movement.

AADT	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	
AHV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	0			**0**									

d. Justification 7 Result

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		Case?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	-	720	-	-	468	65.0	**Case 3 - Warrant is Unlikely**
	B. Vehicle volume, along minor streets (average hour)	-	170	-	-	27	15.6	
2. Delay to cross Traffic	A. Vehicle volume, major street (average hour)	-	720	-	-	441	61.3	
	B. Combined vehicle and pedestrian volume crossing	-	75	-	-	16	20.7	

Justification 7 - Projected Volumes

Intersection: Reach St and Driveway 4 Count Date: 2024-01-01

Return to Justifications 1 - 6

INPUT

PRIOR TO START - FILL OUT GEOMETRY INPUTS IN THE INPUT DATA SPREADSHEET - STEPS A to D

a.- Both Intersection Roads Exist? No

b.- What kind of count estimate available? AM PM Peak Hour **Proceed to c2**

c1.- 8-Hour Count Estimate

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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

c2.- Peak Hour Estimate

Peak Hour	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	
AM Peak Hour	28	346	0	0	0	0	0	410	43	43	0	28	
PM Peak Hour	16	492	0	0	0	0	0	497	19	19	0	16	
AHV	11	210	0	0	0	0	0	227	16	16	0	11	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	463			**27**									

c3.- AADT Estimate - can leave movements without data blank. If midblock reading, can assign demand to through movement.

AADT	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	
AHV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	0			**0**									

d. Justification 7 Result

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		Case?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	-	720	-	-	489	68.0	**Case 3 - Warrant is Unlikely**
	B. Vehicle volume, along minor streets (average hour)	-	170	-	-	27	15.6	
2. Delay to cross Traffic	A. Vehicle volume, major street (average hour)	-	720	-	-	463	64.3	
	B. Combined vehicle and pedestrian volume crossing	-	75	-	-	16	20.7	

Appendix I

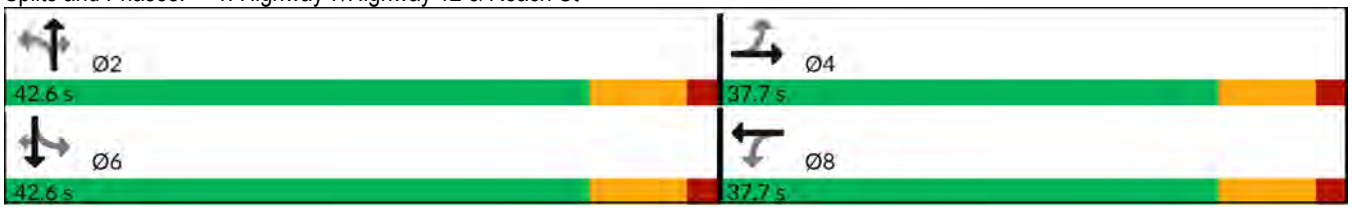
Background Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	133	87	127	126	83	87	211	103	120	246	1
Future Volume (vph)	1	133	87	127	126	83	87	211	103	120	246	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.947			0.967				0.850			0.850
Flt Protected					0.981		0.950			0.950		
Satd. Flow (prot)	0	1682	0	0	1588	0	1597	1606	1390	1643	1579	772
Flt Permitted		0.998			0.796		0.595			0.616		
Satd. Flow (perm)	0	1679	0	0	1288	0	1000	1606	1390	1065	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			23				112			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	145	95	138	137	90	95	229	112	130	267	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	241	0	0	365	0	95	229	112	130	267	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		22.1			22.1		25.2	25.2	25.2	25.2	25.2	25.2
Actuated g/C Ratio		0.35			0.35		0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio		0.39			0.78		0.24	0.36	0.18	0.30	0.42	0.00
Control Delay (s/veh)		13.5			29.1		16.7	16.8	4.5	17.4	17.8	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		13.5			29.1		16.7	16.8	4.5	17.4	17.8	0.0
LOS		B			C		B	B	A	B	B	A
Approach Delay (s/veh)		13.5			29.1			13.6			17.6	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 62.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 18.6		Intersection LOS: B	
Intersection Capacity Utilization 98.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	241	365	95	229	112	130	267	1
v/c Ratio	0.39	0.78	0.24	0.36	0.18	0.30	0.42	0.00
Control Delay (s/veh)	13.5	29.1	16.7	16.8	4.5	17.4	17.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.5	29.1	16.7	16.8	4.5	17.4	17.8	0.0
Queue Length 50th (m)	15.9	34.2	7.1	18.1	0.0	10.0	21.8	0.0
Queue Length 95th (m)	30.7	62.2	19.3	39.4	9.0	25.4	46.4	0.0
Internal Link Dist (m)	1041.3	1546.3		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	834	632	562	903	830	598	888	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.58	0.17	0.25	0.13	0.22	0.30	0.00

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	133	87	127	126	83	87	211	103	120	246	1
Future Volume (vph)	1	133	87	127	126	83	87	211	103	120	246	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1681			1588		1597	1606	1390	1643	1579	772
Flt Permitted		1.00			0.80		0.59	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)		1679			1289		1000	1606	1390	1065	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	145	95	138	137	90	95	229	112	130	267	1
RTOR Reduction (vph)	0	30	0	0	15	0	0	0	67	0	0	1
Lane Group Flow (vph)	0	211	0	0	350	0	95	229	45	130	267	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		22.1			22.1		25.2	25.2	25.2	25.2	25.2	25.2
Effective Green, g (s)		22.1			22.1		25.2	25.2	25.2	25.2	25.2	25.2
Actuated g/C Ratio		0.35			0.35		0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		592			455		402	646	559	428	635	310
v/s Ratio Prot								0.14			c0.17	
v/s Ratio Perm		0.13			c0.27		0.10		0.03	0.12		0.00
v/c Ratio		0.36			0.77		0.24	0.35	0.08	0.30	0.42	0.00
Uniform Delay, d1		15.0			18.0		12.3	13.0	11.5	12.7	13.4	11.2
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4			7.7		0.1	0.1	0.0	0.1	0.2	0.0
Delay (s)		15.4			25.7		12.5	13.2	11.6	12.9	13.6	11.2
Level of Service		B			C		B	B	B	B	B	B
Approach Delay (s/veh)		15.4			25.7			12.6			13.4	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	15.3
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

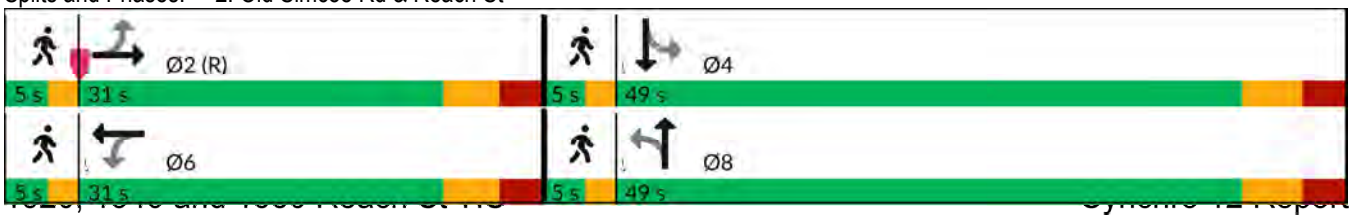
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	217	105	117	262	56	109	76	62	55	118	62
Future Volume (vph)	50	217	105	117	262	56	109	76	62	55	118	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.98			0.84	0.99		1.00	0.92	
Frt		0.951			0.974			0.933			0.948	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1539	0	1658	1687	0	1627	1667	0	1500	1557	0
Flt Permitted	0.406			0.401			0.635			0.662		
Satd. Flow (perm)	723	1539	0	684	1687	0	917	1667	0	1043	1557	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			12			61			39	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	54	236	114	127	285	61	118	83	67	60	128	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	350	0	127	346	0	118	150	0	60	195	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.4	24.4		24.4	24.4		42.1	42.1		42.1	42.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
v/c Ratio	0.23	0.67		0.57	0.62		0.25	0.17		0.11	0.23	
Control Delay (s/veh)	25.3	31.6		36.9	30.4		13.5	7.2		11.6	10.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	25.3	31.6		36.9	30.4		13.5	7.2		11.6	10.1	
LOS	C	C		D	C		B	A		B	B	
Approach Delay (s/veh)		30.8			32.1			9.9			10.4	
Approach LOS		C			C			A			B	

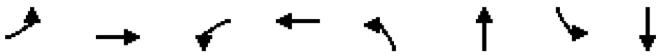
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay (s/veh): 23.5		Intersection LOS: C	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	350	127	346	118	150	60	195
v/c Ratio	0.23	0.67	0.57	0.62	0.25	0.17	0.11	0.23
Control Delay (s/veh)	25.3	31.6	36.9	30.4	13.5	7.2	11.6	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.3	31.6	36.9	30.4	13.5	7.2	11.6	10.1
Queue Length 50th (m)	6.7	47.8	18.0	48.3	10.6	7.4	5.0	13.5
Queue Length 95th (m)	16.1	78.1	37.4	76.6	21.0	16.5	11.3	25.3
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	236	520	223	559	479	901	545	833
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.67	0.57	0.62	0.25	0.17	0.11	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	217	105	117	262	56	109	76	62	55	118	62
Future Volume (vph)	50	217	105	117	262	56	109	76	62	55	118	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.92	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.84	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	0.93		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1539		1618	1686		1372	1667		1497	1557	
Flt Permitted	0.41	1.00		0.40	1.00		0.64	1.00		0.66	1.00	
Satd. Flow (perm)	723	1539		682	1686		917	1667		1043	1557	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	236	114	127	285	61	118	83	67	60	128	67
RTOR Reduction (vph)	0	18	0	0	8	0	0	29	0	0	19	0
Lane Group Flow (vph)	54	332	0	127	338	0	118	121	0	60	176	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Effective Green, g (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	236	502		222	550		479	872		545	814	
v/s Ratio Prot		c0.22			0.20			0.07			0.11	
v/s Ratio Perm	0.07			0.19			c0.13			0.06		
v/c Ratio	0.23	0.66		0.57	0.61		0.25	0.14		0.11	0.22	
Uniform Delay, d1	22.1	26.0		25.1	25.5		11.7	11.0		10.8	11.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	6.7		10.3	5.1		1.2	0.3		0.4	0.6	
Delay (s)	24.3	32.7		35.4	30.6		13.0	11.4		11.3	12.1	
Level of Service	C	C		D	C		B	B		B	B	
Approach Delay (s/veh)		31.6			31.9			12.1			11.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

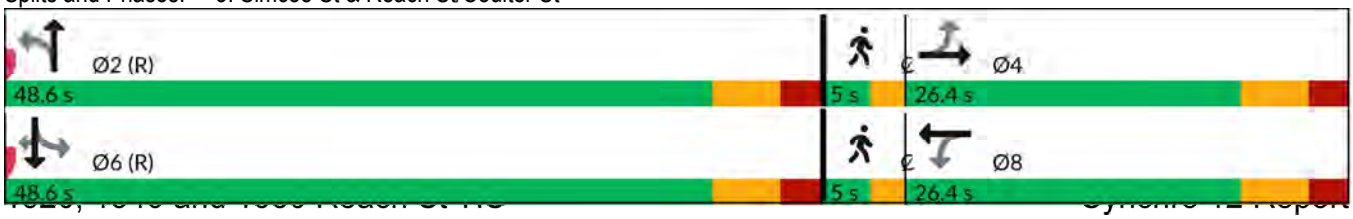
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	34	226	35	33	6	200	227	22	5	389	142
Future Volume (vph)	80	34	226	35	33	6	200	227	22	5	389	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.870			0.976			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1474	0	1675	1776	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.729			0.339			0.505			0.593		
Satd. Flow (perm)	1205	1474	0	590	1776	0	816	1754	0	1072	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		246			7			9				154
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	87	37	246	38	36	7	217	247	24	5	423	154
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	283	0	38	43	0	217	271	0	5	423	154
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	11.8	11.8		11.8	11.8		55.4	55.4		55.4	55.4	55.4
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.69	0.69		0.69	0.69	0.69
v/c Ratio	0.49	0.66		0.44	0.16		0.38	0.22		0.01	0.34	0.15
Control Delay (s/veh)	39.7	14.4		45.5	25.7		8.5	5.5		5.2	6.5	1.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.7	14.4		45.5	25.7		8.5	5.5		5.2	6.5	1.5
LOS	D	B		D	C		A	A		A	A	A
Approach Delay (s/veh)		20.4			35.0			6.8			5.1	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 11.0		Intersection LOS: B	
Intersection Capacity Utilization 81.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



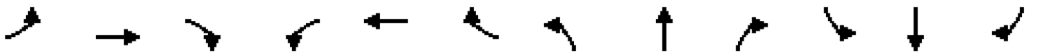
Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	87	283	38	43	217	271	5	423	154
v/c Ratio	0.49	0.66	0.44	0.16	0.38	0.22	0.01	0.34	0.15
Control Delay (s/veh)	39.7	14.4	45.5	25.7	8.5	5.5	5.2	6.5	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.7	14.4	45.5	25.7	8.5	5.5	5.2	6.5	1.5
Queue Length 50th (m)	12.4	5.1	5.4	4.9	11.2	11.7	0.2	21.0	0.0
Queue Length 95th (m)	23.6	24.9	13.5	12.2	30.6	26.9	1.4	45.0	6.1
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	301	553	147	449	564	1217	742	1251	1019
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.51	0.26	0.10	0.38	0.22	0.01	0.34	0.15

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	34	226	35	33	6	200	227	22	5	389	142
Future Volume (vph)	80	34	226	35	33	6	200	227	22	5	389	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1570	1473		1656	1776		1534	1754		1717	1807	1404
Flt Permitted	0.73	1.00		0.34	1.00		0.50	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1205	1473		591	1776		815	1754		1071	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	37	246	38	36	7	217	247	24	5	423	154
RTOR Reduction (vph)	0	210	0	0	6	0	0	3	0	0	0	47
Lane Group Flow (vph)	87	73	0	38	37	0	217	268	0	5	423	107
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	11.8	11.8		11.8	11.8		55.4	55.4		55.4	55.4	55.4
Effective Green, g (s)	11.8	11.8		11.8	11.8		55.4	55.4		55.4	55.4	55.4
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.69	0.69		0.69	0.69	0.69
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	177	217		87	261		564	1214		741	1251	972
v/s Ratio Prot		0.05			0.02			0.15			0.23	
v/s Ratio Perm	c0.07			0.06			c0.27			0.00		0.08
v/c Ratio	0.49	0.34		0.44	0.14		0.38	0.22		0.01	0.34	0.11
Uniform Delay, d1	31.3	30.6		31.1	29.7		5.2	4.5		3.8	4.9	4.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.9		3.5	0.3		2.0	0.4		0.0	0.7	0.2
Delay (s)	33.5	31.5		34.6	29.9		7.1	4.9		3.8	5.7	4.3
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s/veh)		32.0			32.1			5.9			5.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	356	0	0	418	0	0
Future Volume (vph)	356	0	0	418	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	387	0	0	454	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	0	0	454	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	356	0	0	418	0	0
Future Volume (Veh/h)	356	0	0	418	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	387	0	0	454	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			387		841	387
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			387		841	387
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1171		335	661

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	387	454	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1171	1700
Volume to Capacity	0.23	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	356	0	0	418	0	0
Future Volume (vph)	356	0	0	418	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	387	0	0	454	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	0	0	454	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.3%		ICU Level of Service A	
Analysis Period (min) 15			



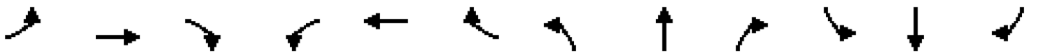
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	356	0	0	418	0	0
Future Volume (Veh/h)	356	0	0	418	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	387	0	0	454	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			387		841	387
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			387		841	387
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1171		335	661

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	387	454	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1171	1700
Volume to Capacity	0.23	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	328	0	0	390	43	0	0	0	43	0	28
Future Volume (vph)	28	328	0	0	390	43	0	0	0	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.987						0.947	
Flt Protected		0.996									0.970	
Satd. Flow (prot)	0	1876	0	0	1859	0	0	1842	0	0	1692	0
Flt Permitted		0.996									0.970	
Satd. Flow (perm)	0	1876	0	0	1859	0	0	1842	0	0	1692	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	357	0	0	424	47	0	0	0	47	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	387	0	0	471	0	0	0	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

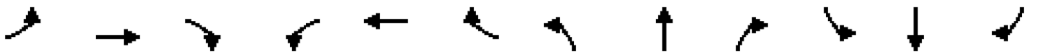
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	328	0	0	390	43	0	0	0	43	0	28
Future Volume (Veh/h)	28	328	0	0	390	43	0	0	0	43	0	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	357	0	0	424	47	0	0	0	47	0	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	471			357			895	888	357	865	865	448
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	471			357			895	888	357	865	865	448
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	82	100	95
cM capacity (veh/h)	1091			1202			244	275	687	268	284	611

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	387	471	0	77
Volume Left	30	0	0	47
Volume Right	0	47	0	30
cSH	1091	1202	1700	343
Volume to Capacity	0.03	0.00	0.00	0.22
Queue Length 95th (m)	0.6	0.0	0.0	6.4
Control Delay (s/veh)	0.9	0.0	0.0	18.5
Lane LOS	A		A	C
Approach Delay (s/veh)	0.9	0.0	0.0	18.5
Approach LOS			A	C

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	51.2%	ICU Level of Service	A	
Analysis Period (min)	15			

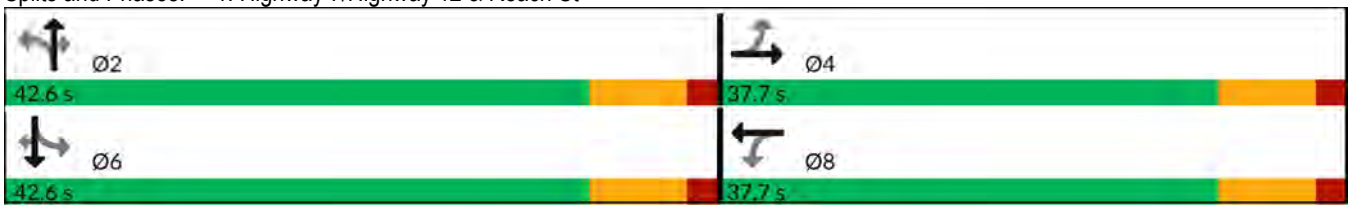


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	186	121	140	180	129	71	531	201	97	297	2
Future Volume (vph)	11	186	121	140	180	129	71	531	201	97	297	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948			0.961				0.850			0.850
Flt Protected		0.998			0.985		0.950			0.950		
Satd. Flow (prot)	0	1761	0	0	1700	0	1708	1807	1366	1568	1740	1543
Flt Permitted		0.977			0.758		0.518			0.226		
Satd. Flow (perm)	0	1724	0	0	1308	0	931	1807	1366	373	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			29				218			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	202	132	152	196	140	77	577	218	105	323	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	346	0	0	488	0	77	577	218	105	323	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		30.1			30.1		28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio		0.41			0.41		0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio		0.47			0.88		0.22	0.84	0.33	0.74	0.49	0.00
Control Delay (s/veh)		17.1			40.5		16.8	32.8	3.8	52.5	19.9	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		17.1			40.5		16.8	32.8	3.8	52.5	19.9	0.0
LOS		B			D		B	C	A	D	B	A
Approach Delay (s/veh)		17.1			40.5			24.1			27.8	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 73.4			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 27.5		Intersection LOS: C	
Intersection Capacity Utilization 117.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St

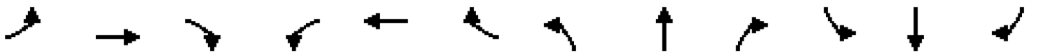




Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	346	488	77	577	218	105	323	2
v/c Ratio	0.47	0.88	0.22	0.84	0.33	0.74	0.49	0.00
Control Delay (s/veh)	17.1	40.5	16.8	32.8	3.8	52.5	19.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.1	40.5	16.8	32.8	3.8	52.5	19.9	0.0
Queue Length 50th (m)	26.8	52.8	7.0	70.4	0.0	12.1	33.0	0.0
Queue Length 95th (m)	58.6	#128.6	15.7	108.4	11.4	#37.0	53.3	0.0
Internal Link Dist (m)	1041.3	1564.3		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	732	553	445	864	766	178	832	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.88	0.17	0.67	0.28	0.59	0.39	0.00

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	186	121	140	180	129	71	531	201	97	297	2
Future Volume (vph)	11	186	121	140	180	129	71	531	201	97	297	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1763			1700		1708	1807	1366	1568	1740	1543
Flt Permitted		0.98			0.76		0.52	1.00	1.00	0.23	1.00	1.00
Satd. Flow (perm)		1724			1308		931	1807	1366	374	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	202	132	152	196	140	77	577	218	105	323	2
RTOR Reduction (vph)	0	26	0	0	17	0	0	0	135	0	0	1
Lane Group Flow (vph)	0	320	0	0	471	0	77	577	83	105	323	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		30.1			30.1		28.0	28.0	28.0	28.0	28.0	28.0
Effective Green, g (s)		30.1			30.1		28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio		0.41			0.41		0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		706			536		355	689	521	142	663	588
v/s Ratio Prot								c0.32			0.19	
v/s Ratio Perm		0.19			c0.36		0.08		0.06	0.28		0.00
v/c Ratio		0.45			0.88		0.22	0.84	0.16	0.74	0.49	0.00
Uniform Delay, d1		15.7			20.0		15.3	20.6	15.0	19.6	17.2	14.0
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5			15.1		0.1	8.4	0.1	15.8	0.2	0.0
Delay (s)		16.2			35.0		15.4	29.0	15.0	35.4	17.5	14.0
Level of Service		B			D		B	C	B	D	B	B
Approach Delay (s/veh)		16.2			35.0			24.3			21.8	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	15.3
Intersection Capacity Utilization	117.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

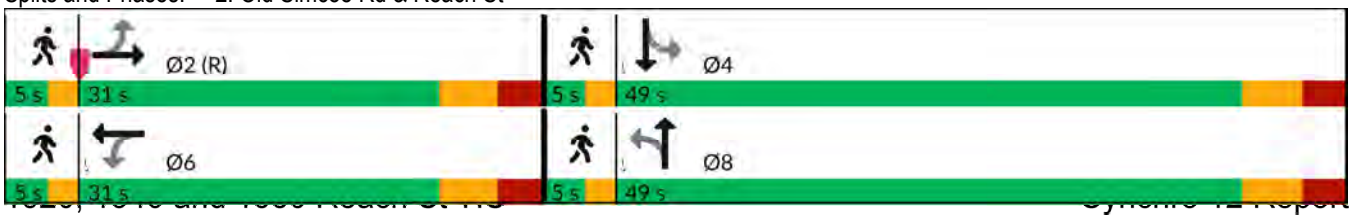
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	338	114	67	304	40	125	91	106	76	76	63
Future Volume (vph)	59	338	114	67	304	40	125	91	106	76	76	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			1.00		0.79	0.98		0.98	0.88	
Frt		0.962			0.983			0.919			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1635	0	1643	1662	0	1658	1618	0	1500	1463	0
Flt Permitted	0.372			0.219			0.661			0.624		
Satd. Flow (perm)	669	1635	0	379	1662	0	909	1618	0	966	1463	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			7			87			61	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	64	367	124	73	330	43	136	99	115	83	83	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	491	0	73	373	0	136	214	0	83	151	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.2	24.2		24.2	24.2		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
v/c Ratio	0.29	0.91		0.60	0.69		0.29	0.24		0.16	0.19	
Control Delay (s/veh)	27.4	51.0		60.5	43.9		14.2	7.6		12.4	7.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	27.4	51.0		60.5	43.9		14.2	7.6		12.4	7.5	
LOS	C	D		E	D		B	A		B	A	
Approach Delay (s/veh)		48.3			46.6			10.1			9.2	
Approach LOS		D			D			B			A	

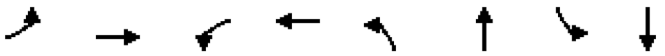
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay (s/veh): 33.6		Intersection LOS: C	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	64	491	73	373	136	214	83	151
v/c Ratio	0.29	0.91	0.60	0.69	0.29	0.24	0.16	0.19
Control Delay (s/veh)	27.4	51.0	60.5	43.9	14.2	7.6	12.4	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.4	51.0	60.5	43.9	14.2	7.6	12.4	7.5
Queue Length 50th (m)	8.2	78.0	12.5	64.1	12.5	10.8	7.1	7.5
Queue Length 95th (m)	19.0	#136.2	#31.9	94.9	24.2	22.4	15.0	17.1
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	217	542	122	543	474	886	504	793
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.91	0.60	0.69	0.29	0.24	0.16	0.19

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	338	114	67	304	40	125	91	106	76	76	63
Future Volume (vph)	59	338	114	67	304	40	125	91	106	76	76	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.88	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.79	1.00		0.98	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1708	1635		1643	1661		1307	1618		1471	1464	
Flt Permitted	0.37	1.00		0.22	1.00		0.66	1.00		0.62	1.00	
Satd. Flow (perm)	668	1635		378	1661		909	1618		967	1464	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	367	124	73	330	43	136	99	115	83	83	68
RTOR Reduction (vph)	0	12	0	0	5	0	0	42	0	0	29	0
Lane Group Flow (vph)	64	479	0	73	368	0	136	172	0	83	122	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Effective Green, g (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	216	530		122	538		474	844		504	764	
v/s Ratio Prot		c0.29			0.22			0.11			0.08	
v/s Ratio Perm	0.10			0.19			c0.15			0.09		
v/c Ratio	0.30	0.90		0.60	0.68		0.29	0.20		0.16	0.16	
Uniform Delay, d1	22.7	29.1		25.5	26.4		12.1	11.5		11.2	11.2	
Progression Factor	1.00	1.00		1.45	1.39		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	21.3		19.4	6.8		1.5	0.5		0.7	0.4	
Delay (s)	26.2	50.4		56.4	43.6		13.6	12.0		11.9	11.7	
Level of Service	C	D		E	D		B	B		B	B	
Approach Delay (s/veh)		47.6			45.7			12.7			11.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

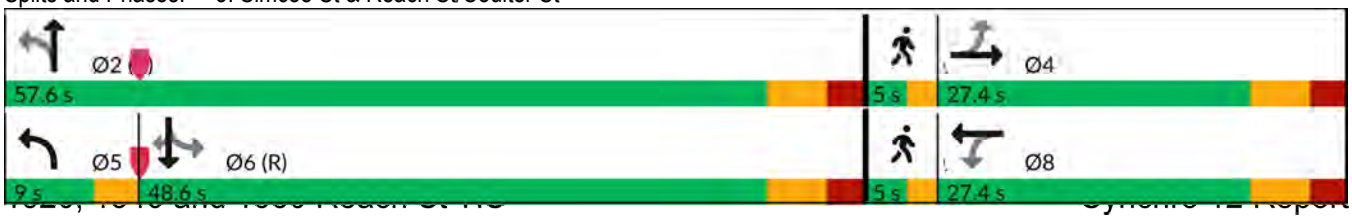
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	34	307	41	18	6	223	527	32	4	297	108
Future Volume (vph)	222	34	307	41	18	6	223	527	32	4	297	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		1.00				1.00		1.00		
Frt		0.865			0.961			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1485	0	1675	1806	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.740			0.273			0.486			0.423		
Satd. Flow (perm)	1267	1485	0	479	1806	0	788	1842	0	767	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		334			7			6				117
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	241	37	334	45	20	7	242	573	35	4	323	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	371	0	45	27	0	242	608	0	4	323	117
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	27.4	27.4		27.4	27.4		9.0	57.6		48.6	48.6	48.6
Total Split (%)	30.4%	30.4%		30.4%	30.4%		10.0%	64.0%		54.0%	54.0%	54.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		6.0	51.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	22.5	22.5		22.5	22.5		58.1	54.7		44.4	44.4	44.4
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.65	0.61		0.49	0.49	0.49
v/c Ratio	0.76	0.60		0.38	0.06		0.42	0.54		0.01	0.36	0.16
Control Delay (s/veh)	32.6	7.5		36.4	19.5		10.2	13.3		13.0	16.2	3.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	32.6	7.5		36.4	19.5		10.2	13.3		13.0	16.2	3.3
LOS	C	A		D	B		B	B		B	B	A
Approach Delay (s/veh)		17.4			30.0			12.4			12.8	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 14.7		Intersection LOS: B	
Intersection Capacity Utilization 95.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	241	371	45	27	242	608	4	323	117
v/c Ratio	0.76	0.60	0.38	0.06	0.42	0.54	0.01	0.36	0.16
Control Delay (s/veh)	32.6	7.5	36.4	19.5	10.2	13.3	13.0	16.2	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.6	7.5	36.4	19.5	10.2	13.3	13.0	16.2	3.3
Queue Length 50th (m)	37.4	17.4	6.3	2.6	16.8	58.9	0.4	34.6	0.0
Queue Length 95th (m)	m47.6	m23.7	16.3	8.4	29.6	92.8	2.1	53.9	8.5
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	333	636	125	479	570	1122	377	907	750
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.58	0.36	0.06	0.42	0.54	0.01	0.36	0.16

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	34	307	41	18	6	223	527	32	4	297	108
Future Volume (vph)	222	34	307	41	18	6	223	527	32	4	297	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1485		1667	1806		1540	1843		1723	1842	1403
Flt Permitted	0.74	1.00		0.27	1.00		0.49	1.00		0.42	1.00	1.00
Satd. Flow (perm)	1267	1485		480	1806		788	1843		767	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	241	37	334	45	20	7	242	573	35	4	323	117
RTOR Reduction (vph)	0	251	0	0	5	0	0	2	0	0	0	59
Lane Group Flow (vph)	241	121	0	45	22	0	242	606	0	4	323	58
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	22.5	22.5		22.5	22.5		54.7	54.7		44.3	44.3	44.3
Effective Green, g (s)	22.5	22.5		22.5	22.5		54.7	54.7		44.3	44.3	44.3
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.61	0.61		0.49	0.49	0.49
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	316	371		120	451		540	1120		377	906	690
v/s Ratio Prot		0.08			0.01		0.04	c0.33			0.18	
v/s Ratio Perm	c0.19			0.09			0.24			0.01		0.04
v/c Ratio	0.76	0.32		0.38	0.05		0.45	0.54		0.01	0.36	0.08
Uniform Delay, d1	31.3	27.5		27.9	25.6		8.5	10.3		11.7	14.1	12.1
Progression Factor	0.64	0.89		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.4	0.4		2.0	0.0		0.6	1.9		0.1	1.1	0.2
Delay (s)	28.3	24.8		29.9	25.7		9.1	12.2		11.7	15.2	12.3
Level of Service	C	C		C	C		A	B		B	B	B
Approach Delay (s/veh)		26.2			28.3			11.3			14.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	484	0	0	489	0	0
Future Volume (vph)	484	0	0	489	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	526	0	0	532	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	526	0	0	532	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	484	0	0	489	0	0
Future Volume (Veh/h)	484	0	0	489	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	526	0	0	532	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			526		1058	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			526		1058	526
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1041		249	552

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	526	532	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1041	1700
Volume to Capacity	0.31	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	484	0	0	489	0	0
Future Volume (vph)	484	0	0	489	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	526	0	0	532	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	526	0	0	532	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.1%		ICU Level of Service A	
Analysis Period (min) 15			



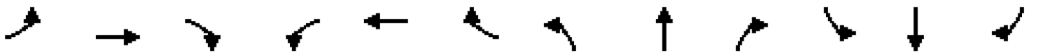
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	484	0	0	489	0	0
Future Volume (Veh/h)	484	0	0	489	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	526	0	0	532	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			526		1058	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			526		1058	526
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1041		249	552

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	526	532	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1041	1700
Volume to Capacity	0.31	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	468	0	0	473	19	0	0	0	19	0	16
Future Volume (vph)	16	468	0	0	473	19	0	0	0	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.995						0.940	
Flt Protected		0.998									0.973	
Satd. Flow (prot)	0	1880	0	0	1874	0	0	1842	0	0	1685	0
Flt Permitted		0.998									0.973	
Satd. Flow (perm)	0	1880	0	0	1874	0	0	1842	0	0	1685	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	509	0	0	514	21	0	0	0	21	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	526	0	0	535	0	0	0	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

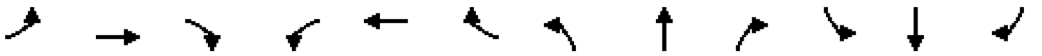
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	468	0	0	473	19	0	0	0	19	0	16
Future Volume (Veh/h)	16	468	0	0	473	19	0	0	0	19	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	509	0	0	514	21	0	0	0	21	0	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	535			509			1085	1078	509	1068	1068	525
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	535			509			1085	1078	509	1068	1068	525
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	89	100	97
cM capacity (veh/h)	1033			1056			186	215	564	197	218	553

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	526	535	0	38
Volume Left	17	0	0	21
Volume Right	0	21	0	17
cSH	1033	1056	1700	277
Volume to Capacity	0.02	0.00	0.00	0.14
Queue Length 95th (m)	0.4	0.0	0.0	3.6
Control Delay (s/veh)	0.5	0.0	0.0	20.1
Lane LOS	A		A	C
Approach Delay (s/veh)	0.5	0.0	0.0	20.1
Approach LOS			A	C

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A	
Analysis Period (min)	15			

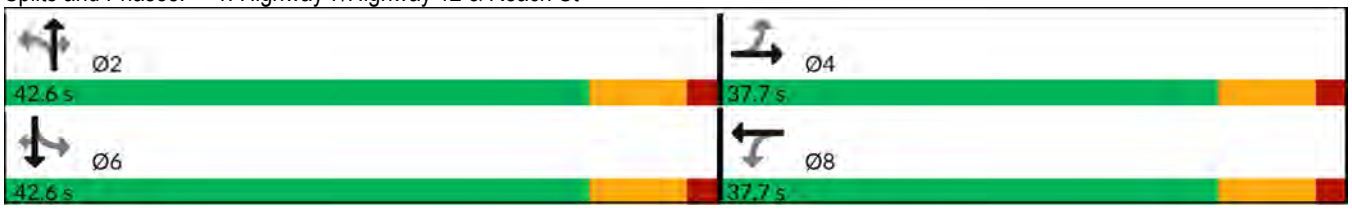


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	140	92	132	132	86	92	222	108	126	258	1
Future Volume (vph)	1	140	92	132	132	86	92	222	108	126	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.947			0.967				0.850			0.850
Flt Protected					0.981		0.950			0.950		
Satd. Flow (prot)	0	1682	0	0	1588	0	1597	1606	1390	1643	1579	772
Flt Permitted		0.998			0.790		0.588			0.609		
Satd. Flow (perm)	0	1679	0	0	1279	0	988	1606	1390	1053	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			23				117			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	152	100	143	143	93	100	241	117	137	280	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	253	0	0	379	0	100	241	117	137	280	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		23.5			23.5		25.2	25.2	25.2	25.2	25.2	25.2
Actuated g/C Ratio		0.37			0.37		0.39	0.39	0.39	0.39	0.39	0.39
v/c Ratio		0.39			0.79		0.26	0.38	0.19	0.33	0.45	0.00
Control Delay (s/veh)		13.5			29.3		17.6	17.7	4.5	18.4	18.9	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		13.5			29.3		17.6	17.7	4.5	18.4	18.9	0.0
LOS		B			C		B	B	A	B	B	A
Approach Delay (s/veh)		13.5			29.3			14.3			18.7	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 64.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 19.2		Intersection LOS: B	
Intersection Capacity Utilization 99.7%		ICU Level of Service F	
Analysis Period (min) 15			

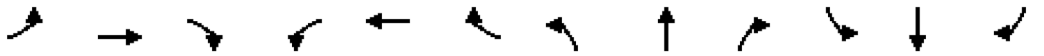
Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	253	379	100	241	117	137	280	1
v/c Ratio	0.39	0.79	0.26	0.38	0.19	0.33	0.45	0.00
Control Delay (s/veh)	13.5	29.3	17.6	17.7	4.5	18.4	18.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.5	29.3	17.6	17.7	4.5	18.4	18.9	0.0
Queue Length 50th (m)	17.0	36.3	8.0	20.3	0.0	11.3	24.4	0.0
Queue Length 95th (m)	32.3	65.8	20.3	41.7	9.2	26.9	48.9	0.0
Internal Link Dist (m)	1041.3	1546.3		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	817	615	543	884	817	579	869	453
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.62	0.18	0.27	0.14	0.24	0.32	0.00

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	140	92	132	132	86	92	222	108	126	258	1
Future Volume (vph)	1	140	92	132	132	86	92	222	108	126	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1681			1588		1597	1606	1390	1643	1579	772
Flt Permitted		1.00			0.79		0.59	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)		1679			1278		988	1606	1390	1053	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	152	100	143	143	93	100	241	117	137	280	1
RTOR Reduction (vph)	0	30	0	0	15	0	0	0	71	0	0	1
Lane Group Flow (vph)	0	223	0	0	364	0	100	241	46	137	280	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		23.5			23.5		25.2	25.2	25.2	25.2	25.2	25.2
Effective Green, g (s)		23.5			23.5		25.2	25.2	25.2	25.2	25.2	25.2
Actuated g/C Ratio		0.37			0.37		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		616			469		389	632	547	414	621	303
v/s Ratio Prot								0.15			c0.18	
v/s Ratio Perm		0.13			c0.29		0.10		0.03	0.13		0.00
v/c Ratio		0.36			0.78		0.26	0.38	0.08	0.33	0.45	0.00
Uniform Delay, d1		14.8			17.9		13.1	13.8	12.2	13.5	14.3	11.8
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4			7.9		0.1	0.1	0.0	0.2	0.2	0.0
Delay (s)		15.1			25.8		13.2	14.0	12.2	13.7	14.5	11.8
Level of Service		B			C		B	B	B	B	B	B
Approach Delay (s/veh)		15.1			25.8			13.4			14.2	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

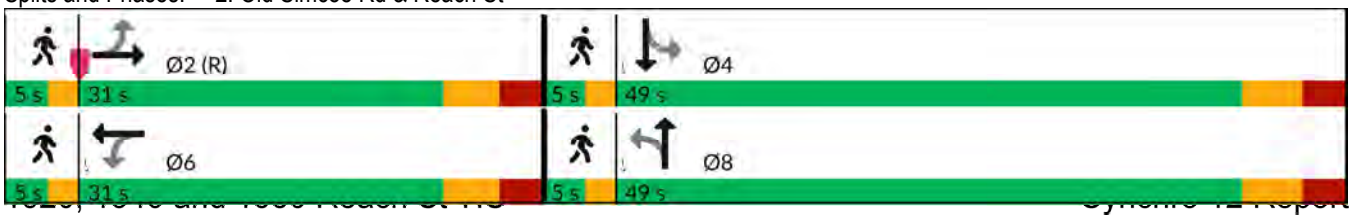
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	227	110	123	274	59	114	80	65	57	124	65
Future Volume (vph)	53	227	110	123	274	59	114	80	65	57	124	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.98			0.85	0.99		1.00	0.92	
Frt		0.951			0.973			0.933			0.948	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1539	0	1658	1685	0	1627	1667	0	1500	1556	0
Flt Permitted	0.385			0.378			0.629			0.657		
Satd. Flow (perm)	685	1539	0	645	1685	0	911	1667	0	1035	1556	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			12			61			40	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	58	247	120	134	298	64	124	87	71	62	135	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	367	0	134	362	0	124	158	0	62	206	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.4	24.4		24.4	24.4		42.1	42.1		42.1	42.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
v/c Ratio	0.26	0.71		0.64	0.65		0.26	0.18		0.11	0.25	
Control Delay (s/veh)	26.2	33.1		42.0	31.4		13.7	7.4		11.6	10.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	26.2	33.1		42.0	31.4		13.7	7.4		11.6	10.2	
LOS	C	C		D	C		B	A		B	B	
Approach Delay (s/veh)		32.2			34.3			10.2			10.6	
Approach LOS		C			C			B			B	

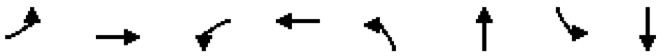
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 24.7		Intersection LOS: C	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



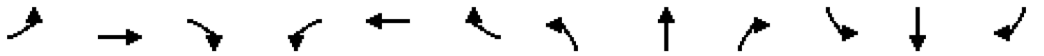
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	367	134	362	124	158	62	206
v/c Ratio	0.26	0.71	0.64	0.65	0.26	0.18	0.11	0.25
Control Delay (s/veh)	26.2	33.1	42.0	31.4	13.7	7.4	11.6	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.2	33.1	42.0	31.4	13.7	7.4	11.6	10.2
Queue Length 50th (m)	7.3	51.1	19.5	51.2	11.2	8.0	5.1	14.5
Queue Length 95th (m)	17.3	82.5	#44.9	80.8	22.1	17.6	11.6	26.9
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	223	520	210	558	476	901	541	833
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.71	0.64	0.65	0.26	0.18	0.11	0.25

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	227	110	123	274	59	114	80	65	57	124	65
Future Volume (vph)	53	227	110	123	274	59	114	80	65	57	124	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.92	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.85	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	0.93		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1539		1620	1686		1376	1666		1497	1557	
Flt Permitted	0.38	1.00		0.38	1.00		0.63	1.00		0.66	1.00	
Satd. Flow (perm)	685	1539		645	1686		910	1666		1035	1557	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	247	120	134	298	64	124	87	71	62	135	71
RTOR Reduction (vph)	0	18	0	0	8	0	0	29	0	0	19	0
Lane Group Flow (vph)	58	349	0	134	354	0	124	129	0	62	187	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Effective Green, g (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	502		210	550		476	871		541	814	
v/s Ratio Prot		c0.23			0.21			0.08			0.12	
v/s Ratio Perm	0.08			0.21			c0.14			0.06		
v/c Ratio	0.26	0.69		0.64	0.64		0.26	0.15		0.11	0.23	
Uniform Delay, d1	22.3	26.4		25.8	25.8		11.8	11.1		10.9	11.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	7.7		13.9	5.7		1.3	0.4		0.4	0.7	
Delay (s)	25.1	34.1		39.7	31.5		13.2	11.4		11.3	12.3	
Level of Service	C	C		D	C		B	B		B	B	
Approach Delay (s/veh)		32.9			33.7			12.2			12.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



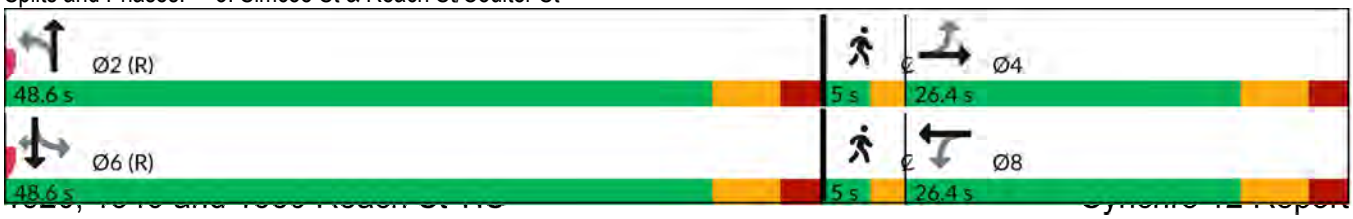
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	36	237	37	35	7	210	238	23	5	409	148
Future Volume (vph)	83	36	237	37	35	7	210	238	23	5	409	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.870			0.974			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1474	0	1675	1769	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.727			0.328			0.489			0.586		
Satd. Flow (perm)	1202	1474	0	571	1769	0	790	1754	0	1059	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		258			8			9				161
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	90	39	258	40	38	8	228	259	25	5	445	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	297	0	40	46	0	228	284	0	5	445	161
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	12.2	12.2		12.2	12.2		55.0	55.0		55.0	55.0	55.0
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.69	0.69		0.69	0.69	0.69
v/c Ratio	0.49	0.67		0.47	0.17		0.42	0.23		0.01	0.36	0.16
Control Delay (s/veh)	39.2	14.2		46.8	25.0		9.5	5.8		5.4	6.9	1.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.2	14.2		46.8	25.0		9.5	5.8		5.4	6.9	1.5
LOS	D	B		D	C		A	A		A	A	A
Approach Delay (s/veh)		20.0			35.1			7.4			5.4	
Approach LOS		C			D			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay (s/veh): 11.2		Intersection LOS: B	
Intersection Capacity Utilization 83.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	90	297	40	46	228	284	5	445	161
v/c Ratio	0.49	0.67	0.47	0.17	0.42	0.23	0.01	0.36	0.16
Control Delay (s/veh)	39.2	14.2	46.8	25.0	9.5	5.8	5.4	6.9	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.2	14.2	46.8	25.0	9.5	5.8	5.4	6.9	1.5
Queue Length 50th (m)	12.9	5.3	5.7	5.1	12.3	12.5	0.2	22.6	0.0
Queue Length 95th (m)	24.3	25.6	14.1	12.6	34.2	28.7	1.5	48.6	6.3
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	300	562	142	448	543	1209	728	1242	1015
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.53	0.28	0.10	0.42	0.23	0.01	0.36	0.16

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	36	237	37	35	7	210	238	23	5	409	148
Future Volume (vph)	83	36	237	37	35	7	210	238	23	5	409	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1570	1474		1656	1769		1534	1754		1717	1807	1404
Flt Permitted	0.73	1.00		0.33	1.00		0.49	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1202	1474		572	1769		789	1754		1058	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	39	258	40	38	8	228	259	25	5	445	161
RTOR Reduction (vph)	0	219	0	0	7	0	0	3	0	0	0	50
Lane Group Flow (vph)	90	78	0	40	39	0	228	281	0	5	445	111
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	12.2	12.2		12.2	12.2		55.0	55.0		55.0	55.0	55.0
Effective Green, g (s)	12.2	12.2		12.2	12.2		55.0	55.0		55.0	55.0	55.0
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.69	0.69		0.69	0.69	0.69
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	183	224		87	269		542	1205		727	1242	965
v/s Ratio Prot		0.05			0.02			0.16			0.25	
v/s Ratio Perm	c0.07			0.07			c0.29			0.00		0.08
v/c Ratio	0.49	0.35		0.46	0.15		0.42	0.23		0.01	0.36	0.11
Uniform Delay, d1	31.1	30.3		30.9	29.4		5.5	4.7		3.9	5.2	4.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.9		3.8	0.3		2.4	0.5		0.0	0.8	0.2
Delay (s)	33.1	31.3		34.7	29.6		7.9	5.1		3.9	6.0	4.5
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s/veh)		31.7			32.0			6.3			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	374	0	0	438	0	0
Future Volume (vph)	374	0	0	438	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	0	0	476	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	407	0	0	476	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	374	0	0	438	0	0
Future Volume (Veh/h)	374	0	0	438	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	407	0	0	476	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			407		883	407
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			407		883	407
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1152		316	644

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	407	476	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1152	1700
Volume to Capacity	0.24	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	374	0	0	438	0	0
Future Volume (vph)	374	0	0	438	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	0	0	476	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	407	0	0	476	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.4%		ICU Level of Service A	
Analysis Period (min) 15			



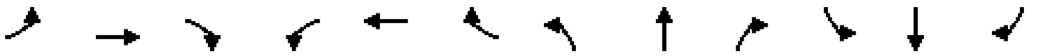
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	374	0	0	438	0	0
Future Volume (Veh/h)	374	0	0	438	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	407	0	0	476	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			407		883	407
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			407		883	407
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1152		316	644

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	407	476	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1152	1700
Volume to Capacity	0.24	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	346	0	0	410	43	0	0	0	43	0	28
Future Volume (vph)	28	346	0	0	410	43	0	0	0	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.987						0.947	
Flt Protected		0.996									0.970	
Satd. Flow (prot)	0	1876	0	0	1859	0	0	1842	0	0	1692	0
Flt Permitted		0.996									0.970	
Satd. Flow (perm)	0	1876	0	0	1859	0	0	1842	0	0	1692	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	376	0	0	446	47	0	0	0	47	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	406	0	0	493	0	0	0	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
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 52.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	346	0	0	410	43	0	0	0	43	0	28
Future Volume (Veh/h)	28	346	0	0	410	43	0	0	0	43	0	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	376	0	0	446	47	0	0	0	47	0	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	493			376			936	929	376	906	906	470
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			376			936	929	376	906	906	470
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	81	100	95
cM capacity (veh/h)	1071			1182			228	260	670	252	268	594

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	406	493	0	77
Volume Left	30	0	0	47
Volume Right	0	47	0	30
cSH	1071	1182	1700	325
Volume to Capacity	0.03	0.00	0.00	0.24
Queue Length 95th (m)	0.7	0.0	0.0	6.9
Control Delay (s/veh)	0.9	0.0	0.0	19.5
Lane LOS	A		A	C
Approach Delay (s/veh)	0.9	0.0	0.0	19.5
Approach LOS			A	C

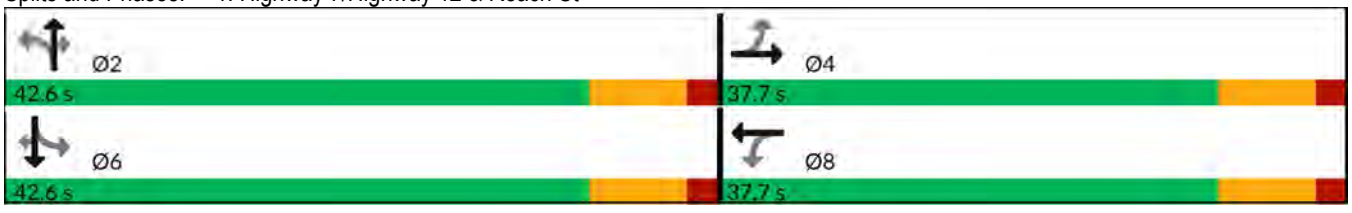
Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	195	127	147	189	135	75	558	211	102	313	2
Future Volume (vph)	11	195	127	147	189	135	75	558	211	102	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949			0.961				0.850			0.850
Flt Protected		0.998			0.985		0.950			0.950		
Satd. Flow (prot)	0	1763	0	0	1700	0	1708	1807	1366	1568	1740	1543
Flt Permitted		0.977			0.742		0.499			0.202		
Satd. Flow (perm)	0	1726	0	0	1281	0	897	1807	1366	333	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			29				229			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	212	138	160	205	147	82	607	229	111	340	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	362	0	0	512	0	82	607	229	111	340	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		30.1			30.1		29.0	29.0	29.0	29.0	29.0	29.0
Actuated g/C Ratio		0.40			0.40		0.39	0.39	0.39	0.39	0.39	0.39
v/c Ratio		0.50			0.96		0.24	0.86	0.34	0.86	0.50	0.00
Control Delay (s/veh)		18.1			53.8		16.9	34.8	3.7	74.2	20.0	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		18.1			53.8		16.9	34.8	3.7	74.2	20.0	0.0
LOS		B			D		B	C	A	E	B	A
Approach Delay (s/veh)		18.1			53.8			25.5			33.2	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 74.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay (s/veh): 32.3		Intersection LOS: C	
Intersection Capacity Utilization 120.6%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St



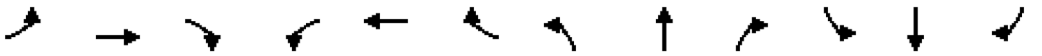
1: Highway 7/Highway 12 & Reach St



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	362	512	82	607	229	111	340	2
v/c Ratio	0.50	0.96	0.24	0.86	0.34	0.86	0.50	0.00
Control Delay (s/veh)	18.1	53.8	16.9	34.8	3.7	74.2	20.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.1	53.8	16.9	34.8	3.7	74.2	20.0	0.0
Queue Length 50th (m)	30.5	61.9	7.5	75.9	0.0	13.8	35.2	0.0
Queue Length 95th (m)	62.0	#139.3	16.7	#117.4	11.6	#42.4	56.5	0.0
Internal Link Dist (m)	1041.3	1564.3		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	724	535	423	852	765	157	821	762
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.96	0.19	0.71	0.30	0.71	0.41	0.00

Intersection Summary

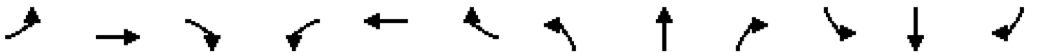
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	195	127	147	189	135	75	558	211	102	313	2
Future Volume (vph)	11	195	127	147	189	135	75	558	211	102	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1763			1700		1708	1807	1366	1568	1740	1543
Flt Permitted		0.98			0.74		0.50	1.00	1.00	0.20	1.00	1.00
Satd. Flow (perm)		1725			1281		897	1807	1366	334	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	212	138	160	205	147	82	607	229	111	340	2
RTOR Reduction (vph)	0	26	0	0	17	0	0	0	140	0	0	1
Lane Group Flow (vph)	0	336	0	0	495	0	82	607	89	111	340	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		30.1			30.1		29.0	29.0	29.0	29.0	29.0	29.0
Effective Green, g (s)		30.1			30.1		29.0	29.0	29.0	29.0	29.0	29.0
Actuated g/C Ratio		0.40			0.40		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		697			518		349	704	532	130	678	601
v/s Ratio Prot								c0.34			0.20	
v/s Ratio Perm		0.19			c0.39		0.09		0.07	0.33		0.00
v/c Ratio		0.48			0.96		0.23	0.86	0.17	0.85	0.50	0.00
Uniform Delay, d1		16.4			21.5		15.2	20.9	14.8	20.8	17.2	13.9
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5			28.3		0.1	10.3	0.1	37.6	0.2	0.0
Delay (s)		16.9			49.8		15.4	31.1	14.9	58.3	17.4	13.9
Level of Service		B			D		B	C	B	E	B	B
Approach Delay (s/veh)		16.9			49.8			25.7			27.4	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	15.3
Intersection Capacity Utilization	120.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



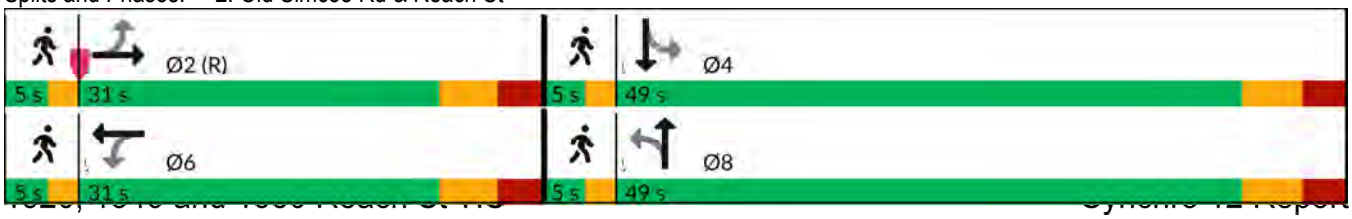
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	354	120	71	319	42	131	96	112	80	80	66
Future Volume (vph)	62	354	120	71	319	42	131	96	112	80	80	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			1.00		0.79	0.98		0.98	0.87	
Frt		0.962			0.982			0.919			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1635	0	1643	1660	0	1658	1617	0	1500	1462	0
Flt Permitted	0.345			0.189			0.656			0.617		
Satd. Flow (perm)	621	1635	0	327	1660	0	905	1617	0	956	1462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			7			88			62	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	67	385	130	77	347	46	142	104	122	87	87	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	515	0	77	393	0	142	226	0	87	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.2	24.2		24.2	24.2		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
v/c Ratio	0.33	0.95		0.73	0.72		0.30	0.26		0.17	0.20	
Control Delay (s/veh)	28.8	58.6		77.6	46.2		14.4	7.9		12.5	7.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	28.8	58.6		77.6	46.2		14.4	7.9		12.5	7.6	
LOS	C	E		E	D		B	A		B	A	
Approach Delay (s/veh)		55.2			51.3			10.4			9.4	
Approach LOS		E			D			B			A	

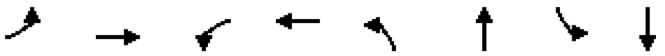
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 37.4		Intersection LOS: D	
Intersection Capacity Utilization 91.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



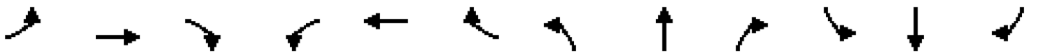
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	515	77	393	142	226	87	159
v/c Ratio	0.33	0.95	0.73	0.72	0.30	0.26	0.17	0.20
Control Delay (s/veh)	28.8	58.6	77.6	46.2	14.4	7.9	12.5	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.8	58.6	77.6	46.2	14.4	7.9	12.5	7.6
Queue Length 50th (m)	8.7	83.6	13.6	68.0	13.2	11.8	7.5	8.1
Queue Length 95th (m)	20.4	#145.8	#37.2	99.4	25.4	24.0	15.7	18.0
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	201	542	106	543	472	886	499	793
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.95	0.73	0.72	0.30	0.26	0.17	0.20

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	354	120	71	319	42	131	96	112	80	80	66
Future Volume (vph)	62	354	120	71	319	42	131	96	112	80	80	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.87	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.79	1.00		0.98	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1709	1635		1643	1661		1311	1617		1472	1462	
Flt Permitted	0.35	1.00		0.19	1.00		0.66	1.00		0.62	1.00	
Satd. Flow (perm)	621	1635		326	1661		905	1617		956	1462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	385	130	77	347	46	142	104	122	87	87	72
RTOR Reduction (vph)	0	12	0	0	5	0	0	42	0	0	30	0
Lane Group Flow (vph)	67	503	0	77	388	0	142	184	0	87	129	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Effective Green, g (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	201	530		105	538		472	844		499	763	
v/s Ratio Prot		c0.31			0.23			0.11			0.09	
v/s Ratio Perm	0.11			0.24			c0.16			0.09		
v/c Ratio	0.33	0.95		0.73	0.72		0.30	0.22		0.17	0.17	
Uniform Delay, d1	23.0	29.7		26.9	26.8		12.2	11.6		11.3	11.3	
Progression Factor	1.00	1.00		1.45	1.41		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	28.3		35.3	7.9		1.6	0.6		0.8	0.5	
Delay (s)	27.4	57.9		74.4	45.7		13.8	12.2		12.1	11.8	
Level of Service	C	E		E	D		B	B		B	B	
Approach Delay (s/veh)		54.4			50.4			12.8			11.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



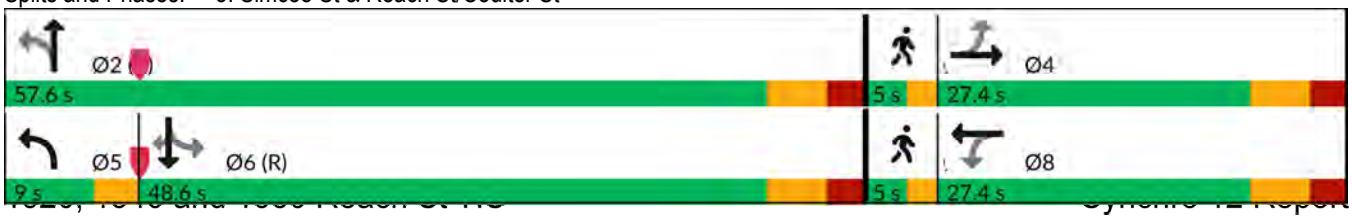
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	36	322	43	19	7	234	553	34	4	312	113
Future Volume (vph)	233	36	322	43	19	7	234	553	34	4	312	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		1.00				1.00		1.00		
Frt		0.865			0.959			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1485	0	1675	1802	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.738			0.260			0.469			0.390		
Satd. Flow (perm)	1264	1485	0	456	1802	0	760	1842	0	708	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		350			8			6				123
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	253	39	350	47	21	8	254	601	37	4	339	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	253	389	0	47	29	0	254	638	0	4	339	123
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	27.4	27.4		27.4	27.4		9.0	57.6		48.6	48.6	48.6
Total Split (%)	30.4%	30.4%		30.4%	30.4%		10.0%	64.0%		54.0%	54.0%	54.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		6.0	51.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	23.4	23.4		23.4	23.4		57.2	53.8		43.8	43.8	43.8
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.64	0.60		0.49	0.49	0.49
v/c Ratio	0.77	0.60		0.40	0.06		0.47	0.58		0.01	0.38	0.17
Control Delay (s/veh)	32.9	7.3		37.4	19.0		11.3	14.3		13.0	16.7	3.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	32.9	7.3		37.4	19.0		11.3	14.3		13.0	16.7	3.3
LOS	C	A		D	B		B	B		B	B	A
Approach Delay (s/veh)		17.4			30.4			13.5			13.1	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 15.2		Intersection LOS: B	
Intersection Capacity Utilization 98.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	253	389	47	29	254	638	4	339	123
v/c Ratio	0.77	0.60	0.40	0.06	0.47	0.58	0.01	0.38	0.17
Control Delay (s/veh)	32.9	7.3	37.4	19.0	11.3	14.3	13.0	16.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	7.3	37.4	19.0	11.3	14.3	13.0	16.7	3.3
Queue Length 50th (m)	38.7	16.7	6.4	2.6	18.9	66.9	0.4	36.7	0.0
Queue Length 95th (m)	m48.9	m23.4	16.9	8.8	31.2	99.4	2.1	57.0	8.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	341	655	122	492	544	1104	344	895	745
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.59	0.39	0.06	0.47	0.58	0.01	0.38	0.17

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	36	322	43	19	7	234	553	34	4	312	113
Future Volume (vph)	233	36	322	43	19	7	234	553	34	4	312	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1485		1668	1801		1540	1843		1723	1842	1403
Flt Permitted	0.74	1.00		0.26	1.00		0.47	1.00		0.39	1.00	1.00
Satd. Flow (perm)	1265	1485		456	1801		761	1843		707	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	253	39	350	47	21	8	254	601	37	4	339	123
RTOR Reduction (vph)	0	259	0	0	6	0	0	2	0	0	0	63
Lane Group Flow (vph)	253	130	0	47	23	0	254	636	0	4	339	60
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	23.4	23.4		23.4	23.4		53.8	53.8		43.7	43.7	43.7
Effective Green, g (s)	23.4	23.4		23.4	23.4		53.8	53.8		43.7	43.7	43.7
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.60	0.60		0.49	0.49	0.49
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	328	386		118	468		516	1101		343	894	681
v/s Ratio Prot		0.09			0.01		0.04	c0.34			0.18	
v/s Ratio Perm	c0.20			0.10			0.26			0.01		0.04
v/c Ratio	0.77	0.34		0.40	0.05		0.49	0.58		0.01	0.38	0.09
Uniform Delay, d1	30.8	27.0		27.5	25.0		9.2	11.1		12.0	14.6	12.4
Progression Factor	0.64	0.89		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.3	0.4		2.2	0.0		0.7	2.2		0.1	1.2	0.3
Delay (s)	28.2	24.4		29.7	25.0		9.9	13.3		12.0	15.8	12.7
Level of Service	C	C		C	C		A	B		B	B	B
Approach Delay (s/veh)		25.9			27.9			12.4			15.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	508	0	0	513	0	0
Future Volume (vph)	508	0	0	513	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	0	0	558	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	552	0	0	558	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	508	0	0	513	0	0
Future Volume (Veh/h)	508	0	0	513	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	552	0	0	558	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			552		1110	552
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			552		1110	552
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1018		232	533

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	552	558	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1018	1700
Volume to Capacity	0.32	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		30.3%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	508	0	0	513	0	0
Future Volume (vph)	508	0	0	513	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	0	0	558	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	552	0	0	558	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

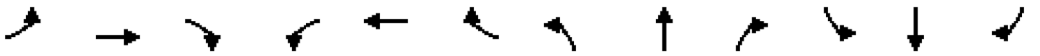
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	508	0	0	513	0	0
Future Volume (Veh/h)	508	0	0	513	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	552	0	0	558	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			552		1110	552
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			552		1110	552
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1018		232	533

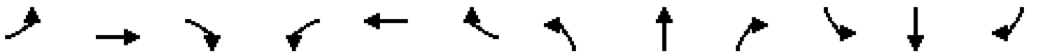
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	552	558	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1018	1700
Volume to Capacity	0.32	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		30.3%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	492	0	0	497	19	0	0	0	19	0	16
Future Volume (vph)	16	492	0	0	497	19	0	0	0	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.995						0.940	
Flt Protected		0.998									0.973	
Satd. Flow (prot)	0	1880	0	0	1874	0	0	1842	0	0	1685	0
Flt Permitted		0.998									0.973	
Satd. Flow (perm)	0	1880	0	0	1874	0	0	1842	0	0	1685	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	535	0	0	540	21	0	0	0	21	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	552	0	0	561	0	0	0	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
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 48.8%		ICU Level of Service A	
Analysis Period (min) 15			



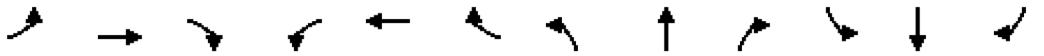
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	492	0	0	497	19	0	0	0	19	0	16
Future Volume (Veh/h)	16	492	0	0	497	19	0	0	0	19	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	535	0	0	540	21	0	0	0	21	0	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	561			535			1137	1130	535	1120	1120	551
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	561			535			1137	1130	535	1120	1120	551
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	88	100	97
cM capacity (veh/h)	1010			1033			171	200	545	182	203	534

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	552	561	0	38
Volume Left	17	0	0	21
Volume Right	0	21	0	17
cSH	1010	1033	1700	258
Volume to Capacity	0.02	0.00	0.00	0.15
Queue Length 95th (m)	0.4	0.0	0.0	3.9
Control Delay (s/veh)	0.5	0.0	0.0	21.4
Lane LOS	A		A	C
Approach Delay (s/veh)	0.5	0.0	0.0	21.4
Approach LOS			A	C

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix J

2033 Background Traffic Operations Reports - Mitigation



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	140	92	132	132	86	92	222	108	126	258	1
Future Volume (vph)	1	140	92	132	132	86	92	222	108	126	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940			0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1669	0	1526	1616	0	1597	1606	1390	1643	1579	772
Flt Permitted	0.612			0.603			0.588			0.609		
Satd. Flow (perm)	1150	1669	0	968	1616	0	988	1606	1390	1053	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			47				117			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	152	100	143	143	93	100	241	117	137	280	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	252	0	143	236	0	100	241	117	137	280	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	14.7	14.7		14.7	14.7		25.1	25.1	25.1	25.1	25.1	25.1
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.46	0.46	0.46	0.46	0.46	0.46
v/c Ratio	0.00	0.53		0.56	0.51		0.22	0.33	0.17	0.29	0.39	0.00
Control Delay (s/veh)	14.0	18.0		26.2	17.5		12.0	12.1	3.4	12.6	12.9	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	18.0		26.2	17.5		12.0	12.1	3.4	12.6	12.9	0.0
LOS	B	B		C	B		B	B	A	B	B	A
Approach Delay (s/veh)		18.0			20.8			9.9			12.8	
Approach LOS		B			C			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 55.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 14.8		Intersection LOS: B	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St



1: Highway 7/Highway 12 & Reach St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	252	143	236	100	241	117	137	280	1
v/c Ratio	0.00	0.53	0.56	0.51	0.22	0.33	0.17	0.29	0.39	0.00
Control Delay (s/veh)	14.0	18.0	26.2	17.5	12.0	12.1	3.4	12.6	12.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	18.0	26.2	17.5	12.0	12.1	3.4	12.6	12.9	0.0
Queue Length 50th (m)	0.1	17.0	12.2	15.5	5.2	13.4	0.0	7.4	16.0	0.0
Queue Length 95th (m)	1.0	33.6	26.3	31.5	16.6	33.7	7.9	21.9	39.7	0.0
Internal Link Dist (m)		1041.3		1546.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	628	932	528	904	629	1023	928	670	1006	514
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.27	0.27	0.26	0.16	0.24	0.13	0.20	0.28	0.00

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	140	92	132	132	86	92	222	108	126	258	1
Future Volume (vph)	1	140	92	132	132	86	92	222	108	126	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1670		1526	1616		1597	1606	1390	1643	1579	772
Flt Permitted	0.61	1.00		0.60	1.00		0.59	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	1149	1670		968	1616		988	1606	1390	1053	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	152	100	143	143	93	100	241	117	137	280	1
RTOR Reduction (vph)	0	34	0	0	34	0	0	0	64	0	0	1
Lane Group Flow (vph)	1	218	0	143	202	0	100	241	53	137	280	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	14.7	14.7		14.7	14.7		25.1	25.1	25.1	25.1	25.1	25.1
Effective Green, g (s)	14.7	14.7		14.7	14.7		25.1	25.1	25.1	25.1	25.1	25.1
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.46	0.46	0.46	0.46	0.46	0.46
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	306	445		258	431		450	731	633	479	719	351
v/s Ratio Prot		0.13			0.12			0.15			c0.18	
v/s Ratio Perm	0.00			c0.15			0.10		0.04	0.13		0.00
v/c Ratio	0.00	0.49		0.55	0.47		0.22	0.33	0.08	0.29	0.39	0.00
Uniform Delay, d1	14.8	17.0		17.4	16.9		9.1	9.6	8.5	9.4	9.9	8.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.8		2.6	0.8		0.1	0.1	0.0	0.1	0.1	0.0
Delay (s)	14.8	17.9		20.0	17.7		9.2	9.7	8.5	9.5	10.1	8.2
Level of Service	B	B		B	B		A	A	A	A	B	A
Approach Delay (s/veh)		17.9			18.6			9.3			9.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	15.3
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

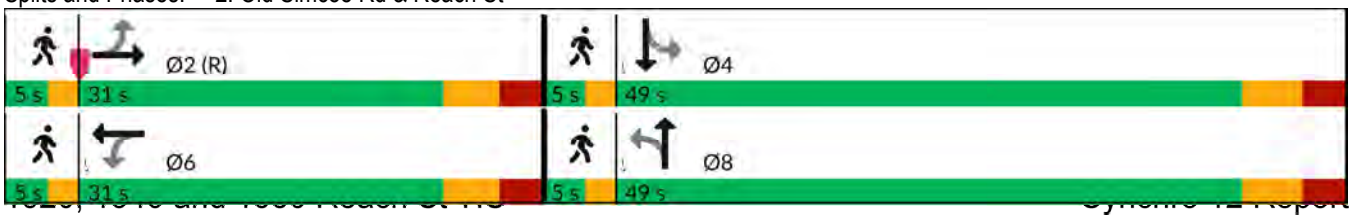
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	227	110	123	274	59	114	80	65	57	124	65
Future Volume (vph)	53	227	110	123	274	59	114	80	65	57	124	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.98			0.85	0.99		1.00	0.92	
Frt		0.951			0.973			0.933			0.948	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1539	0	1658	1685	0	1627	1667	0	1500	1556	0
Flt Permitted	0.385			0.378			0.629			0.657		
Satd. Flow (perm)	685	1539	0	645	1685	0	911	1667	0	1035	1556	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			12			61			40	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	58	247	120	134	298	64	124	87	71	62	135	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	367	0	134	362	0	124	158	0	62	206	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.4	24.4		24.4	24.4		42.1	42.1		42.1	42.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
v/c Ratio	0.26	0.71		0.64	0.65		0.26	0.18		0.11	0.25	
Control Delay (s/veh)	26.2	33.1		42.0	31.4		13.7	7.4		11.6	10.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	26.2	33.1		42.0	31.4		13.7	7.4		11.6	10.2	
LOS	C	C		D	C		B	A		B	B	
Approach Delay (s/veh)		32.2			34.3			10.2			10.6	
Approach LOS		C			C			B			B	

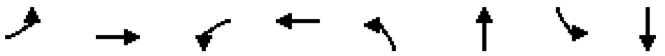
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 24.7		Intersection LOS: C	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



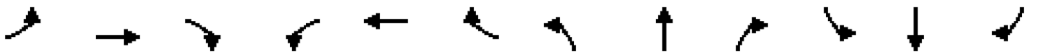
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	367	134	362	124	158	62	206
v/c Ratio	0.26	0.71	0.64	0.65	0.26	0.18	0.11	0.25
Control Delay (s/veh)	26.2	33.1	42.0	31.4	13.7	7.4	11.6	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.2	33.1	42.0	31.4	13.7	7.4	11.6	10.2
Queue Length 50th (m)	7.3	51.1	19.5	51.2	11.2	8.0	5.1	14.5
Queue Length 95th (m)	17.3	82.5	#44.9	80.8	22.1	17.6	11.6	26.9
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	223	520	210	558	476	901	541	833
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.71	0.64	0.65	0.26	0.18	0.11	0.25

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	227	110	123	274	59	114	80	65	57	124	65
Future Volume (vph)	53	227	110	123	274	59	114	80	65	57	124	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.92	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.85	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	0.93		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1539		1620	1686		1376	1666		1497	1557	
Flt Permitted	0.38	1.00		0.38	1.00		0.63	1.00		0.66	1.00	
Satd. Flow (perm)	685	1539		645	1686		910	1666		1035	1557	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	247	120	134	298	64	124	87	71	62	135	71
RTOR Reduction (vph)	0	18	0	0	8	0	0	29	0	0	19	0
Lane Group Flow (vph)	58	349	0	134	354	0	124	129	0	62	187	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Effective Green, g (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	502		210	550		476	871		541	814	
v/s Ratio Prot		c0.23			0.21			0.08			0.12	
v/s Ratio Perm	0.08			0.21			c0.14			0.06		
v/c Ratio	0.26	0.69		0.64	0.64		0.26	0.15		0.11	0.23	
Uniform Delay, d1	22.3	26.4		25.8	25.8		11.8	11.1		10.9	11.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	7.7		13.9	5.7		1.3	0.4		0.4	0.7	
Delay (s)	25.1	34.1		39.7	31.5		13.2	11.4		11.3	12.3	
Level of Service	C	C		D	C		B	B		B	B	
Approach Delay (s/veh)		32.9			33.7			12.2			12.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



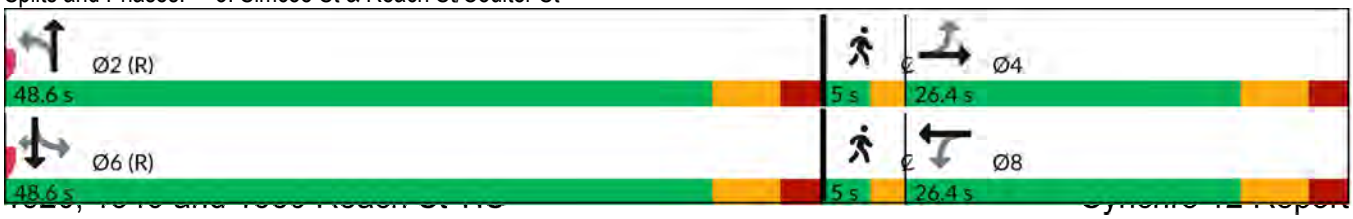
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	36	237	37	35	7	210	238	23	5	409	148
Future Volume (vph)	83	36	237	37	35	7	210	238	23	5	409	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.870			0.974			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1474	0	1675	1769	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.727			0.328			0.489			0.586		
Satd. Flow (perm)	1202	1474	0	571	1769	0	790	1754	0	1059	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		258			8			9				161
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	90	39	258	40	38	8	228	259	25	5	445	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	297	0	40	46	0	228	284	0	5	445	161
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	12.2	12.2		12.2	12.2		55.0	55.0		55.0	55.0	55.0
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.69	0.69		0.69	0.69	0.69
v/c Ratio	0.49	0.67		0.47	0.17		0.42	0.23		0.01	0.36	0.16
Control Delay (s/veh)	39.2	14.2		46.8	25.0		9.5	5.8		5.4	6.9	1.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.2	14.2		46.8	25.0		9.5	5.8		5.4	6.9	1.5
LOS	D	B		D	C		A	A		A	A	A
Approach Delay (s/veh)		20.0			35.1			7.4			5.4	
Approach LOS		C			D			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay (s/veh): 11.2		Intersection LOS: B	
Intersection Capacity Utilization 83.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	90	297	40	46	228	284	5	445	161
v/c Ratio	0.49	0.67	0.47	0.17	0.42	0.23	0.01	0.36	0.16
Control Delay (s/veh)	39.2	14.2	46.8	25.0	9.5	5.8	5.4	6.9	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.2	14.2	46.8	25.0	9.5	5.8	5.4	6.9	1.5
Queue Length 50th (m)	12.9	5.3	5.7	5.1	12.3	12.5	0.2	22.6	0.0
Queue Length 95th (m)	24.3	25.6	14.1	12.6	34.2	28.7	1.5	48.6	6.3
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	300	562	142	448	543	1209	728	1242	1015
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.53	0.28	0.10	0.42	0.23	0.01	0.36	0.16

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	36	237	37	35	7	210	238	23	5	409	148
Future Volume (vph)	83	36	237	37	35	7	210	238	23	5	409	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1570	1474		1656	1769		1534	1754		1717	1807	1404
Flt Permitted	0.73	1.00		0.33	1.00		0.49	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1202	1474		572	1769		789	1754		1058	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	39	258	40	38	8	228	259	25	5	445	161
RTOR Reduction (vph)	0	219	0	0	7	0	0	3	0	0	0	50
Lane Group Flow (vph)	90	78	0	40	39	0	228	281	0	5	445	111
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	12.2	12.2		12.2	12.2		55.0	55.0		55.0	55.0	55.0
Effective Green, g (s)	12.2	12.2		12.2	12.2		55.0	55.0		55.0	55.0	55.0
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.69	0.69		0.69	0.69	0.69
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	183	224		87	269		542	1205		727	1242	965
v/s Ratio Prot		0.05			0.02			0.16			0.25	
v/s Ratio Perm	c0.07			0.07			c0.29			0.00		0.08
v/c Ratio	0.49	0.35		0.46	0.15		0.42	0.23		0.01	0.36	0.11
Uniform Delay, d1	31.1	30.3		30.9	29.4		5.5	4.7		3.9	5.2	4.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.9		3.8	0.3		2.4	0.5		0.0	0.8	0.2
Delay (s)	33.1	31.3		34.7	29.6		7.9	5.1		3.9	6.0	4.5
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s/veh)		31.7			32.0			6.3			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	374	0	0	438	0	0
Future Volume (vph)	374	0	0	438	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	0	0	476	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	407	0	0	476	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	374	0	0	438	0	0
Future Volume (Veh/h)	374	0	0	438	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	407	0	0	476	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			407		883	407
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			407		883	407
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1152		316	644

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	407	476	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1152	1700
Volume to Capacity	0.24	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	374	0	0	438	0	0
Future Volume (vph)	374	0	0	438	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	0	0	476	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	407	0	0	476	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	374	0	0	438	0	0
Future Volume (Veh/h)	374	0	0	438	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	407	0	0	476	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			407		883	407
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			407		883	407
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1152		316	644

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	407	476	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1152	1700
Volume to Capacity	0.24	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	346	0	0	410	43	0	0	0	43	0	28
Future Volume (vph)	28	346	0	0	410	43	0	0	0	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.987						0.947	
Flt Protected		0.996									0.970	
Satd. Flow (prot)	0	1876	0	0	1859	0	0	1842	0	0	1692	0
Flt Permitted		0.996									0.970	
Satd. Flow (perm)	0	1876	0	0	1859	0	0	1842	0	0	1692	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	376	0	0	446	47	0	0	0	47	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	406	0	0	493	0	0	0	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
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 52.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	346	0	0	410	43	0	0	0	43	0	28
Future Volume (Veh/h)	28	346	0	0	410	43	0	0	0	43	0	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	376	0	0	446	47	0	0	0	47	0	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	493			376			936	929	376	906	906	470
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			376			936	929	376	906	906	470
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	81	100	95
cM capacity (veh/h)	1071			1182			228	260	670	252	268	594

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	406	493	0	77
Volume Left	30	0	0	47
Volume Right	0	47	0	30
cSH	1071	1182	1700	325
Volume to Capacity	0.03	0.00	0.00	0.24
Queue Length 95th (m)	0.7	0.0	0.0	6.9
Control Delay (s/veh)	0.9	0.0	0.0	19.5
Lane LOS	A		A	C
Approach Delay (s/veh)	0.9	0.0	0.0	19.5
Approach LOS			A	C

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	195	127	147	189	135	75	558	211	102	313	2
Future Volume (vph)	11	195	127	147	189	135	75	558	211	102	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.941			0.937				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	1757	0	1700	1686	0	1708	1807	1366	1568	1740	1543
Flt Permitted	0.464			0.467			0.553			0.289		
Satd. Flow (perm)	793	1757	0	836	1686	0	994	1807	1366	477	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			51				229			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	212	138	160	205	147	82	607	229	111	340	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	350	0	160	352	0	82	607	229	111	340	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	18.1	18.1		18.1	18.1		28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.05	0.64		0.65	0.66		0.18	0.74	0.31	0.52	0.43	0.00
Control Delay (s/veh)	16.3	22.0		32.9	22.8		13.3	22.3	3.4	24.9	14.9	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.3	22.0		32.9	22.8		13.3	22.3	3.4	24.9	14.9	0.0
LOS	B	C		C	C		B	C	A	C	B	A
Approach Delay (s/veh)		21.8			26.0			16.8			17.3	
Approach LOS		C			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 61.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 19.8		Intersection LOS: B	
Intersection Capacity Utilization 103.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	12	350	160	352	82	607	229	111	340	2
v/c Ratio	0.05	0.64	0.65	0.66	0.18	0.74	0.31	0.52	0.43	0.00
Control Delay (s/veh)	16.3	22.0	32.9	22.8	13.3	22.3	3.4	24.9	14.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.3	22.0	32.9	22.8	13.3	22.3	3.4	24.9	14.9	0.0
Queue Length 50th (m)	0.9	26.6	14.4	26.7	4.8	49.0	0.0	7.8	22.7	0.0
Queue Length 95th (m)	4.5	58.4	37.1	59.4	16.3	#117.4	11.6	29.6	56.5	0.0
Internal Link Dist (m)		1041.3		1564.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	395	899	416	866	578	1051	890	277	1012	924
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.39	0.38	0.41	0.14	0.58	0.26	0.40	0.34	0.00

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	195	127	147	189	135	75	558	211	102	313	2
Future Volume (vph)	11	195	127	147	189	135	75	558	211	102	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1623	1757		1700	1687		1708	1807	1366	1568	1740	1543
Flt Permitted	0.46	1.00		0.47	1.00		0.55	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	793	1757		836	1687		994	1807	1366	477	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	212	138	160	205	147	82	607	229	111	340	2
RTOR Reduction (vph)	0	33	0	0	36	0	0	0	125	0	0	1
Lane Group Flow (vph)	12	317	0	160	316	0	82	607	104	111	340	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	18.1	18.1		18.1	18.1		28.0	28.0	28.0	28.0	28.0	28.0
Effective Green, g (s)	18.1	18.1		18.1	18.1		28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.46	0.46	0.46	0.46	0.46	0.46
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	233	517		246	497		453	824	622	217	793	703
v/s Ratio Prot		0.18			0.19			c0.34			0.20	
v/s Ratio Perm	0.02			c0.19			0.08		0.08	0.23		0.00
v/c Ratio	0.05	0.61		0.65	0.64		0.18	0.74	0.17	0.51	0.43	0.00
Uniform Delay, d1	15.5	18.6		18.9	18.8		9.9	13.7	9.8	11.8	11.3	9.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.2		6.0	2.7		0.1	3.0	0.0	0.8	0.1	0.0
Delay (s)	15.6	20.8		24.9	21.5		10.0	16.7	9.9	12.7	11.4	9.1
Level of Service	B	C		C	C		A	B	A	B	B	A
Approach Delay (s/veh)		20.6			22.5			14.4			11.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	15.3
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

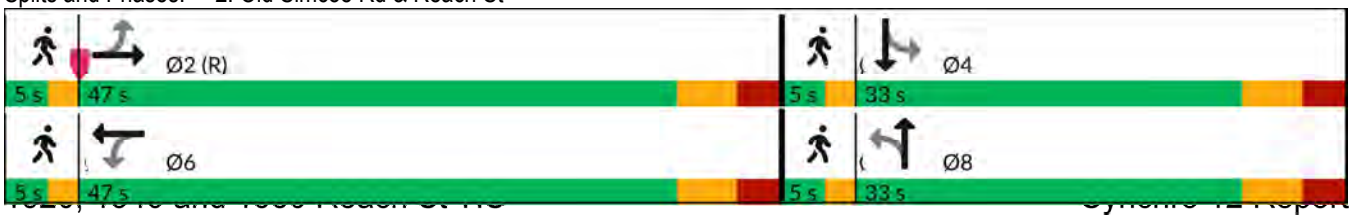
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	354	120	71	319	42	131	96	112	80	80	66
Future Volume (vph)	62	354	120	71	319	42	131	96	112	80	80	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.98	1.00		0.79	0.98		0.98	0.87	
Frt		0.962			0.982			0.919			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1635	0	1643	1660	0	1658	1617	0	1500	1462	0
Flt Permitted	0.463			0.357			0.656			0.588		
Satd. Flow (perm)	832	1635	0	604	1660	0	905	1617	0	912	1462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			10			66			47	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	67	385	130	77	347	46	142	104	122	87	87	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	515	0	77	393	0	142	226	0	87	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	47.0	47.0		47.0	47.0		33.0	33.0		33.0	33.0	
Total Split (%)	52.2%	52.2%		52.2%	52.2%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	40.2	40.2		40.2	40.2		26.0	26.0		26.0	26.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.2	45.2		45.2	45.2		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.34	0.34		0.34	0.34	
v/c Ratio	0.16	0.62		0.25	0.47		0.46	0.38		0.28	0.30	
Control Delay (s/veh)	13.5	19.4		15.9	16.1		28.8	17.6		24.4	16.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	13.5	19.4		15.9	16.1		28.8	17.6		24.4	16.7	
LOS	B	B		B	B		C	B		C	B	
Approach Delay (s/veh)		18.7			16.0			21.9			19.5	
Approach LOS		B			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 18.8		Intersection LOS: B	
Intersection Capacity Utilization 91.0%		ICU Level of Service E	
Analysis Period (min) 15			

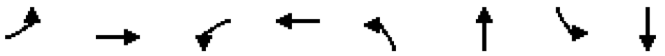
Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary

2: Old Simcoe Rd & Reach St

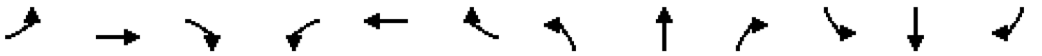


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	515	77	393	142	226	87	159
v/c Ratio	0.16	0.62	0.25	0.47	0.46	0.38	0.28	0.30
Control Delay (s/veh)	13.5	19.4	15.9	16.1	28.8	17.6	24.4	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.5	19.4	15.9	16.1	28.8	17.6	24.4	16.7
Queue Length 50th (m)	6.0	58.4	7.0	36.8	18.8	19.9	10.8	13.6
Queue Length 95th (m)	13.5	90.6	16.1	57.9	36.4	38.5	22.7	28.4
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	417	833	303	838	311	600	314	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.62	0.25	0.47	0.46	0.38	0.28	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	354	120	71	319	42	131	96	112	80	80	66
Future Volume (vph)	62	354	120	71	319	42	131	96	112	80	80	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.87	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.79	1.00		0.98	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1706	1635		1604	1661		1311	1617		1473	1462	
Flt Permitted	0.46	1.00		0.36	1.00		0.66	1.00		0.59	1.00	
Satd. Flow (perm)	831	1635		602	1661		905	1617		912	1462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	385	130	77	347	46	142	104	122	87	87	72
RTOR Reduction (vph)	0	12	0	0	5	0	0	43	0	0	31	0
Lane Group Flow (vph)	67	503	0	77	388	0	142	183	0	87	128	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	45.2	45.2		45.2	45.2		31.0	31.0		31.0	31.0	
Effective Green, g (s)	45.2	45.2		45.2	45.2		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.34	0.34		0.34	0.34	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	417	821		302	834		311	556		314	503	
v/s Ratio Prot		c0.31			0.23			0.11			0.09	
v/s Ratio Perm	0.08			0.13			c0.16			0.10		
v/c Ratio	0.16	0.61		0.25	0.47		0.46	0.33		0.28	0.25	
Uniform Delay, d1	12.1	16.1		12.8	14.5		22.9	21.8		21.4	21.2	
Progression Factor	1.00	1.00		1.02	0.97		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	3.4		2.0	1.8		4.8	1.6		2.2	1.2	
Delay (s)	13.0	19.5		15.0	16.0		27.7	23.4		23.6	22.4	
Level of Service	B	B		B	B		C	C		C	C	
Approach Delay (s/veh)		18.8			15.8			25.1			22.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



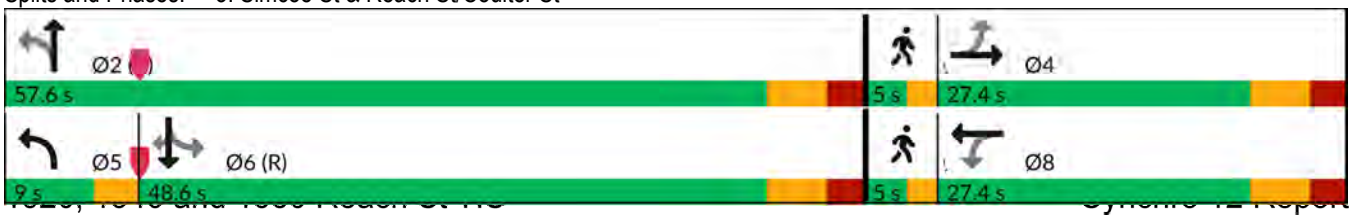
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	36	322	43	19	7	234	553	34	4	312	113
Future Volume (vph)	233	36	322	43	19	7	234	553	34	4	312	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		1.00				1.00		1.00		
Frt		0.865			0.959			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1485	0	1675	1802	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.738			0.260			0.469			0.390		
Satd. Flow (perm)	1264	1485	0	456	1802	0	760	1842	0	708	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		350			8			6				123
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	253	39	350	47	21	8	254	601	37	4	339	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	253	389	0	47	29	0	254	638	0	4	339	123
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	27.4	27.4		27.4	27.4		9.0	57.6		48.6	48.6	48.6
Total Split (%)	30.4%	30.4%		30.4%	30.4%		10.0%	64.0%		54.0%	54.0%	54.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		6.0	51.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	23.4	23.4		23.4	23.4		57.2	53.8		43.8	43.8	43.8
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.64	0.60		0.49	0.49	0.49
v/c Ratio	0.77	0.60		0.40	0.06		0.47	0.58		0.01	0.38	0.17
Control Delay (s/veh)	43.5	10.2		37.4	19.0		11.3	14.3		13.0	16.7	3.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	43.5	10.2		37.4	19.0		11.3	14.3		13.0	16.7	3.3
LOS	D	B		D	B		B	B		B	B	A
Approach Delay (s/veh)		23.3			30.4			13.5			13.1	
Approach LOS		C			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 17.0		Intersection LOS: B	
Intersection Capacity Utilization 98.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	253	389	47	29	254	638	4	339	123
v/c Ratio	0.77	0.60	0.40	0.06	0.47	0.58	0.01	0.38	0.17
Control Delay (s/veh)	43.5	10.2	37.4	19.0	11.3	14.3	13.0	16.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.5	10.2	37.4	19.0	11.3	14.3	13.0	16.7	3.3
Queue Length 50th (m)	41.8	16.3	6.4	2.6	18.9	66.9	0.4	36.7	0.0
Queue Length 95th (m)	#71.3	32.1	16.9	8.8	31.2	99.4	2.1	57.0	8.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	341	655	122	492	544	1104	344	895	745
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.59	0.39	0.06	0.47	0.58	0.01	0.38	0.17

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	36	322	43	19	7	234	553	34	4	312	113
Future Volume (vph)	233	36	322	43	19	7	234	553	34	4	312	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1485		1668	1801		1540	1843		1723	1842	1403
Flt Permitted	0.74	1.00		0.26	1.00		0.47	1.00		0.39	1.00	1.00
Satd. Flow (perm)	1265	1485		456	1801		761	1843		707	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	253	39	350	47	21	8	254	601	37	4	339	123
RTOR Reduction (vph)	0	259	0	0	6	0	0	2	0	0	0	63
Lane Group Flow (vph)	253	130	0	47	23	0	254	636	0	4	339	60
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	23.4	23.4		23.4	23.4		53.8	53.8		43.7	43.7	43.7
Effective Green, g (s)	23.4	23.4		23.4	23.4		53.8	53.8		43.7	43.7	43.7
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.60	0.60		0.49	0.49	0.49
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	328	386		118	468		516	1101		343	894	681
v/s Ratio Prot		0.09			0.01		0.04	c0.34			0.18	
v/s Ratio Perm	c0.20			0.10			0.26			0.01		0.04
v/c Ratio	0.77	0.34		0.40	0.05		0.49	0.58		0.01	0.38	0.09
Uniform Delay, d1	30.8	27.0		27.5	25.0		9.2	11.1		12.0	14.6	12.4
Progression Factor	0.93	1.40		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.6	0.5		2.2	0.0		0.7	2.2		0.1	1.2	0.3
Delay (s)	38.3	38.2		29.7	25.0		9.9	13.3		12.0	15.8	12.7
Level of Service	D	D		C	C		A	B		B	B	B
Approach Delay (s/veh)		38.3			27.9			12.4			15.0	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	508	0	0	513	0	0
Future Volume (vph)	508	0	0	513	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	0	0	558	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	552	0	0	558	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	508	0	0	513	0	0
Future Volume (Veh/h)	508	0	0	513	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	552	0	0	558	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			552		1110	552
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			552		1110	552
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1018		232	533

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	552	558	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1018	1700
Volume to Capacity	0.32	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		30.3%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	508	0	0	513	0	0
Future Volume (vph)	508	0	0	513	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1842	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1842	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	0	0	558	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	552	0	0	558	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

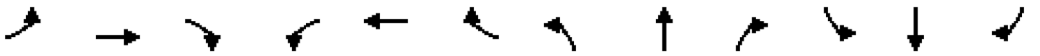
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	508	0	0	513	0	0
Future Volume (Veh/h)	508	0	0	513	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	552	0	0	558	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			552		1110	552
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			552		1110	552
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1018		232	533

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	552	558	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1018	1700
Volume to Capacity	0.32	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		30.3%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	492	0	0	497	19	0	0	0	19	0	16
Future Volume (vph)	16	492	0	0	497	19	0	0	0	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.995						0.940	
Flt Protected		0.998									0.973	
Satd. Flow (prot)	0	1880	0	0	1874	0	0	1842	0	0	1685	0
Flt Permitted		0.998									0.973	
Satd. Flow (perm)	0	1880	0	0	1874	0	0	1842	0	0	1685	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	535	0	0	540	21	0	0	0	21	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	552	0	0	561	0	0	0	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
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 48.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	492	0	0	497	19	0	0	0	19	0	16
Future Volume (Veh/h)	16	492	0	0	497	19	0	0	0	19	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	535	0	0	540	21	0	0	0	21	0	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	561			535			1137	1130	535	1120	1120	551
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	561			535			1137	1130	535	1120	1120	551
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	88	100	97
cM capacity (veh/h)	1010			1033			171	200	545	182	203	534

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	552	561	0	38
Volume Left	17	0	0	21
Volume Right	0	21	0	17
cSH	1010	1033	1700	258
Volume to Capacity	0.02	0.00	0.00	0.15
Queue Length 95th (m)	0.4	0.0	0.0	3.9
Control Delay (s/veh)	0.5	0.0	0.0	21.4
Lane LOS	A		A	C
Approach Delay (s/veh)	0.5	0.0	0.0	21.4
Approach LOS			A	C

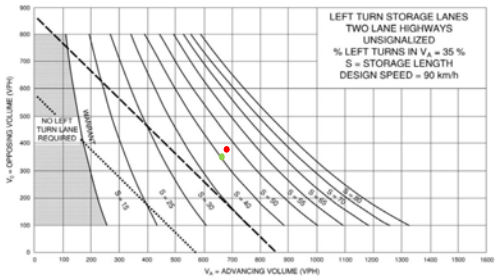
Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A	
Analysis Period (min)	15			

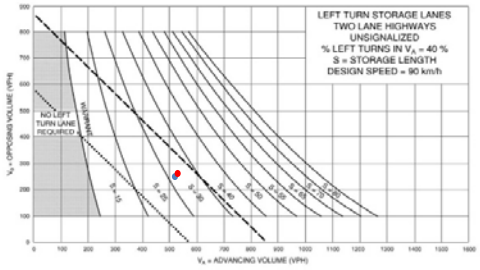
Appendix K

Left Turn Lane Warrant Analysis under Total Traffic Conditions

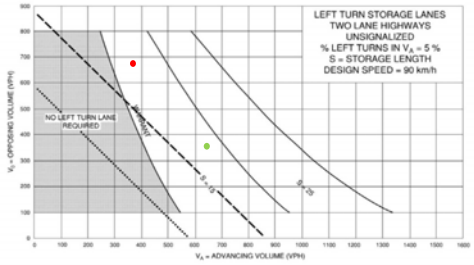
Highway 7/Highway 12 & Reach St

WB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	513	647	527	669
Opposing vol	249	365	261	380
LT vol	211	215	216	222
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	30	50	30	50
Deceleration Length	106	106	106	106
Taper Length	70	70	70	70
LT %	41%	33%	41%	33%
MTO Exhibit	9A-22	9A-22	9A-22	9A-22



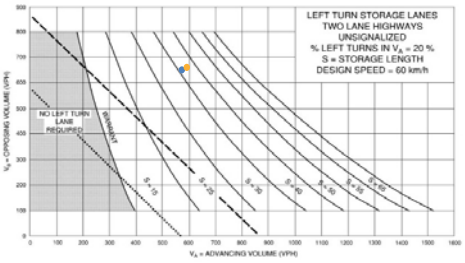


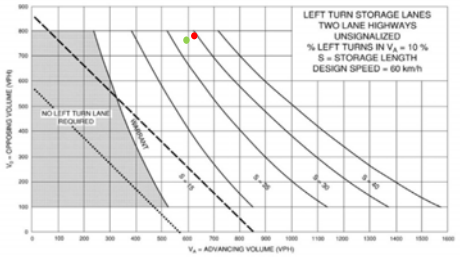
EB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	249	365	261	380
Opposing vol	513	647	527	669
LT vol	1	11	1	11
LTL Warranted	No	Yes	No	Yes
Storage Length	-	15	-	15
Deceleration Length	-	106	-	106
Taper Length	-	70	-	70
LT %	0%	3%	0%	3%
MTO Exhibit	9A-19	9A-19	9A-19	9A-19



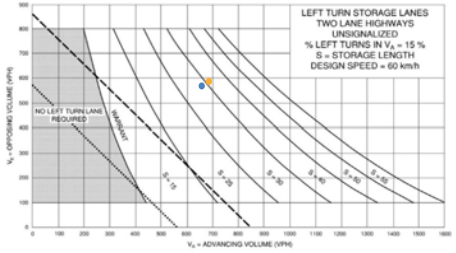
Old Simcoe Rd & Reach St

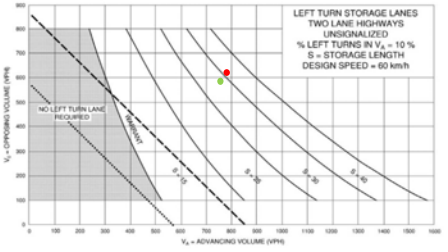
WB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	569	595	590	616
Opposing vol	655	768	673	793
LT vol	117	67	123	71
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	40	30	40	30
Deceleration Length	43	43	43	43
Taper Length	55	55	55	55
LT %	21%	11%	21%	12%
MTO Exhibit	9A-8	9A-7	9A-8	9A-7





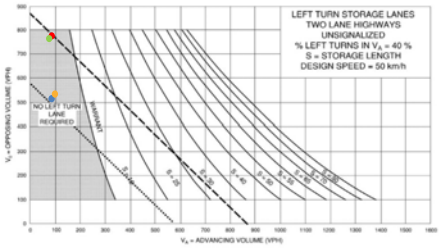
EB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	655	768	673	793
Opposing vol	569	595	590	616
LT vol	83	85	86	88
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	30	30	40	40
Deceleration Length	43	43	43	43
Taper Length	55	55	55	55
LT %	13%	11%	13%	11%
MTO Exhibit	9A-8	9A-7	9A-8	9A-7



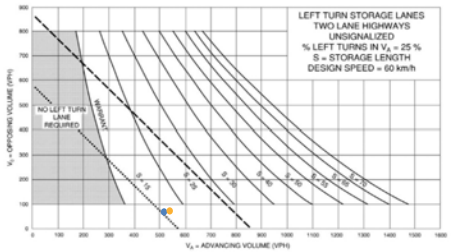


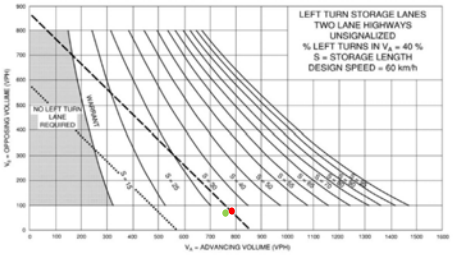
Simcoe St & Reach St/Coulter St

WB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	84	74	89	78
Opposing vol	527	760	543	788
LT vol	35	41	37	43
LTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-
LT %	42%	55%	42%	55%
MTO Exhibit	9A-6	9A-6	9A-6	9A-6



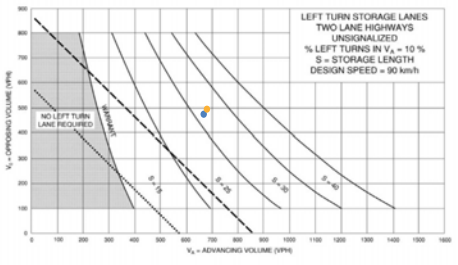
EB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	527	760	543	788
Opposing vol	84	74	89	78
LT vol	137	323	140	334
LTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-
LT %	26%	43%	26%	42%
MTO Exhibit	9A-9	9A-10	9A-9	9A-10

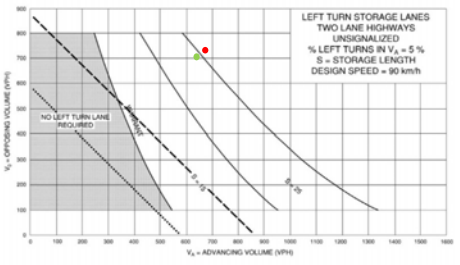




Driveway 1 & Reach St

WB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	662	647	682	671
Opposing vol	481	708	499	732
LT vol	82	36	82	36
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	30	25	30	25
Deceleration Length	106	106	106	106
Taper Length	70	70	70	70
LT %	12%	6%	12%	5%
MTO Exhibit	9A-19	9A-19	9A-19	9A-19

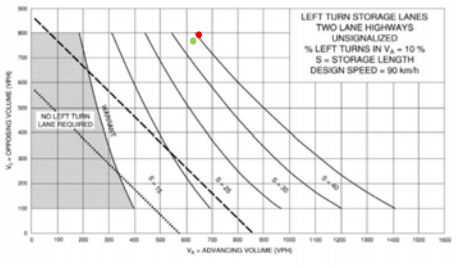


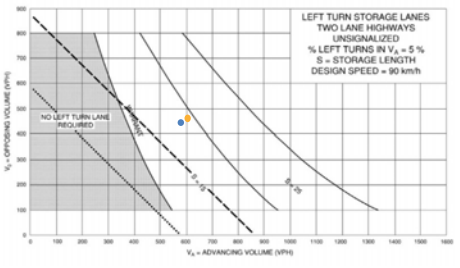


EB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	N/A	N/A	N/A	N/A
Opposing vol	N/A	N/A	N/A	N/A
LT vol	N/A	N/A	N/A	N/A
LTL Warranted	N/A	N/A	N/A	N/A
Storage Length	N/A	N/A	N/A	N/A
Deceleration Length	N/A	N/A	N/A	N/A
Taper Length	N/A	N/A	N/A	N/A

Driveway 2 & Reach St

WB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	583	629	603	653
Opposing vol	453	775	471	799
LT vol	34	68	34	68
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	15	40	15	40
Deceleration Length	106	106	106	106
Taper Length	70	70	70	70
LT %	6%	11%	6%	10%
MTO Exhibit	9A-19	9A-19	9A-19	9A-19

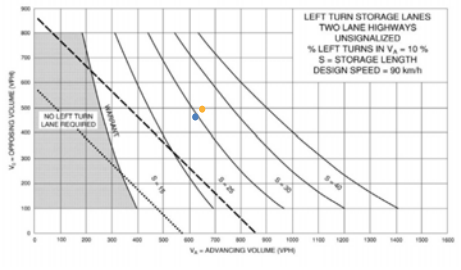


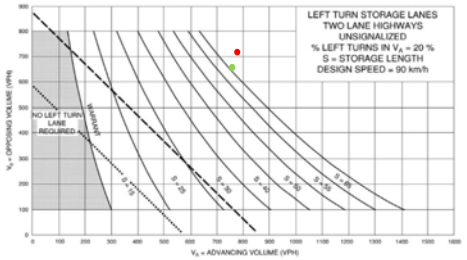


EB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	N/A	N/A	N/A	N/A
Opposing vol	N/A	N/A	N/A	N/A
LT vol	N/A	N/A	N/A	N/A
LTL Warranted	N/A	N/A	N/A	N/A
Storage Length	N/A	N/A	N/A	N/A
Deceleration Length	N/A	N/A	N/A	N/A
Taper Length	N/A	N/A	N/A	N/A

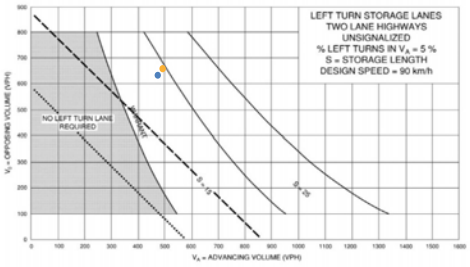
Driveway 3/4 & Reach St

WB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	627	755	647	779
Opposing vol	481	689	499	713
LT vol	78	159	78	159
LTL Warranted	Yes	Yes	Yes	Yes
Storage Length	25	65	30	65
Deceleration Length	106	106	106	106
Taper Length	70	70	70	70
LT %	12%	21%	12%	20%
MTO Exhibit	9A-19	9A-20	9A-19	9A-20





EB LTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Advancing vol	481	689	499	713
Opposing vol	627	755	647	779
LT vol	28	16	28	16
LTL Warranted	Yes	No	Yes	No
Storage Length	15	-	15	-
Deceleration Length	106	-	106	-
Taper Length	70	-	70	-
LT %	6%	2%	6%	2%
MTO Exhibit	9A-19	N/A	9A-19	N/A



Appendix L

Right Turn Lane Warrant Analysis under Total Traffic Conditions

Highway 7/Highway 12 & Reach St

WB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	513	647	527	669
RT vol	137	218	140	224
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

EB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	249	365	261	380
RT vol	87	121	92	127
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

Old Simcoe Rd & Reach St

WB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	569	595	590	616
RT vol	56	40	59	42
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

EB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	655	768	673	793
RT vol	168	148	173	154
RTL Warranted	No	Yes	No	Yes
Storage Length	-	20	-	20
Deceleration Length	-	40	-	40
Taper Length	-	55	-	55

Storage length is assumed to be 20 m

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

The Regional Municipality of Durham
Works Department

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Simcoe St & Reach St/Coulter St

WB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	84	74	89	78
RT vol	6	6	7	7
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

EB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	527	760	543	788
RT vol	345	393	356	408
RTL Warranted	No	Yes	No	Yes
Storage Length	-	20	-	20
Deceleration Length	-	40	-	40
Taper Length	-	55	-	55

Storage length is assumed to be 20 m

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

Driveway 1 & Reach St

WB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	N/A	N/A	N/A	N/A
RT vol	N/A	N/A	N/A	N/A
RTL Warranted	N/A	N/A	N/A	N/A
Storage Length	N/A	N/A	N/A	N/A
Deceleration Length	N/A	N/A	N/A	N/A
Taper Length	N/A	N/A	N/A	N/A

EB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	481	708	499	732
RT vol	54	32	54	32
RTL Warranted	No	Yes	No	Yes
Storage Length	-	No	-	No
Deceleration Length	-	No	-	No
Taper Length	-	75	-	75

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

The Regional Municipality of Durham
Works Department

April 2025

Driveway 2 & Reach St

WB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	N/A	N/A	N/A	N/A
RT vol	N/A	N/A	N/A	N/A
RTL Warranted	N/A	N/A	N/A	N/A
Storage Length	N/A	N/A	N/A	N/A
Deceleration Length	N/A	N/A	N/A	N/A
Taper Length	N/A	N/A	N/A	N/A

EB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	453	775	471	799
RT vol	49	134	49	134
RTL Warranted	No	Yes	No	Yes
Storage Length	-	20	-	20
Deceleration Length	-	70	-	70
Taper Length	-	75	-	75

Storage length is assumed to be 20 m

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

The Regional Municipality of Durham
Works Department

April 2025

Driveway 3/4 & Reach St

WB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	627	755	647	779
RT vol	43	19	43	19
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

EB RTL Warrant	2028 Total AM	2028 Total PM	2033 Total AM	2033 Total PM
Approach vol	481	689	499	713
RT vol	28	16	28	16
RTL Warranted	No	No	No	No
Storage Length	-	-	-	-
Deceleration Length	-	-	-	-
Taper Length	-	-	-	-

TABLE 1 – Right turn lanes on Regional Roads

Arterial Function	Type	Design Approach Volumes (vehicles per hour)	Right-Turn Lane Threshold (vehicles per hour)	Right-Turn Direct Taper Threshold (vehicles per hour)
Type A	Urban or Rural	800 to 1000	50 (four-lane)	10 (four-lane)
Type A	Urban or Rural	800 to 1000	40 (two-lane)	All (two-lane)
Type B	Urban	700	50 (four-lane)	20 (four-lane)
Type B	Urban	700	40 (two-lane)	20 (two-lane)
Type B	Rural	700	70 (four-lane)	20 (four-lane)
Type B	Rural	700	40 (two-lane)	20 (two-lane)
Type C	Urban	500	50 (two-lane)	20 (two-lane)

The Regional Municipality of Durham
Works Department

April 2025

Appendix M

Traffic Signal Control Warrant Analysis under Total Traffic Conditions

Justification 7 - Projected Volumes

Intersection: Reach St and Driveway 3/4 Count Date: 2024-01-01

Return to Justifications 1 - 6

INPUT

PRIOR TO START - FILL OUT GEOMETRY INPUTS IN THE INPUT DATA SPREADSHEET - STEPS A to D

a.- Both Intersection Roads Exist? No

b.- What kind of count estimate available? AM PM Peak Hour Proceed to c2

c1.- 8-Hour Count Estimate

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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

c2.- Peak Hour Estimate

Peak Hour	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	
AM Peak Hour	28	431	22	49	0	180	78	506	43	43	0	28	
PM Peak Hour	16	615	58	36	0	110	159	577	19	19	0	16	
AHV	11	262	20	21	0	73	59	271	16	16	0	11	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	638			**120**									

c3.- AADT Estimate - can leave movements without data blank. If midblock reading, can assign demand to through movement.

AADT	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	
	0	0	0	0	0	0	0	0	0	0	0	0	0
AHV	**Main Street AHV Sum**			**Minor Street AHV Sum**									
	0			**0**									

d. Justification 7 Result

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		Case?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	-	720	-	-	758	105.3	**Case 2 - Might be Warranted**
	B. Vehicle volume, along minor streets (average hour)	-	170	-	-	120	70.7	
2. Delay to cross Traffic	A. Vehicle volume, major street (average hour)	-	720	-	-	638	88.6	
	B. Combined vehicle and pedestrian volume crossing	-	75	-	-	37	49.0	

Justification 7 - Projected Volumes

Intersection: Reach St and Driveway 3/4 Count Date: 2024-01-01

Return to Justifications 1 - 6

INPUT

PRIOR TO START - FILL OUT GEOMETRY INPUTS IN THE INPUT DATA SPREADSHEET - STEPS A to D

a.- Both Intersection Roads Exist? No

b.- What kind of count estimate available? AM PM Peak Hour **Proceed to c2**

c1.- 8-Hour Count Estimate

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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

c2.- Peak Hour Estimate

Peak Hour	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	
AM Peak Hour	28	449	22	49	0	180	78	526	43	43	0	28	
PM Peak Hour	16	639	58	36	0	110	159	601	19	19	0	16	
AHV	11	272	20	21	0	73	59	282	16	16	0	11	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	660			**120**									

c3.- AADT Estimate - can leave movements without data blank. If midblock reading, can assign demand to through movement.

AADT	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	
AHV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	0			**0**									

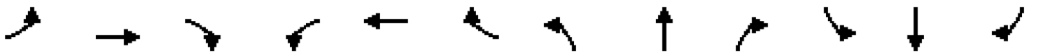
d. Justification 7 Result

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		Case?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	-	720	-	-	780	108.3	**Case 2 - Might be Warranted**
	B. Vehicle volume, along minor streets (average hour)	-	170	-	-	120	70.7	
2. Delay to cross Traffic	A. Vehicle volume, major street (average hour)	-	720	-	-	660	91.6	
	B. Combined vehicle and pedestrian volume crossing	-	75	-	-	37	49.0	

Appendix N

Total Traffic Operations Reports





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	161	87	211	165	137	87	211	154	166	246	1
Future Volume (vph)	1	161	87	211	165	137	87	211	154	166	246	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.953			0.964				0.850			0.850
Flt Protected					0.980		0.950			0.950		
Satd. Flow (prot)	0	1690	0	0	1577	0	1597	1606	1390	1643	1579	772
Flt Permitted		0.998			0.763		0.588			0.616		
Satd. Flow (perm)	0	1687	0	0	1228	0	988	1606	1390	1065	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			26				167			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	175	95	229	179	149	95	229	167	180	267	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	557	0	95	229	167	180	267	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		30.0			30.0		25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio		0.43			0.43		0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio		0.37			1.04		0.27	0.40	0.28	0.48	0.48	0.00
Control Delay (s/veh)		13.3			71.0		18.8	19.7	4.3	22.8	21.1	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		13.3			71.0		18.8	19.7	4.3	22.8	21.1	0.0
LOS		B			E		B	B	A	C	C	A
Approach Delay (s/veh)		13.3			71.0			14.3			21.7	
Approach LOS		B			E			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 70.3			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay (s/veh): 33.9		Intersection LOS: C	
Intersection Capacity Utilization 109.7%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	271	557	95	229	167	180	267	1
v/c Ratio	0.37	1.04	0.27	0.40	0.28	0.48	0.48	0.00
Control Delay (s/veh)	13.3	71.0	18.8	19.7	4.3	22.8	21.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.3	71.0	18.8	19.7	4.3	22.8	21.1	0.0
Queue Length 50th (m)	19.5	~78.5	8.7	22.2	0.0	18.0	26.7	0.0
Queue Length 95th (m)	36.0	#134.7	19.4	39.4	10.9	35.3	46.4	0.0
Internal Link Dist (m)	1041.3	1546.3		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	742	538	491	799	775	530	786	416
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.04	0.19	0.29	0.22	0.34	0.34	0.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	161	87	211	165	137	87	211	154	166	246	1
Future Volume (vph)	1	161	87	211	165	137	87	211	154	166	246	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1690			1577		1597	1606	1390	1643	1579	772
Flt Permitted		1.00			0.76		0.59	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)		1687			1228		988	1606	1390	1065	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	175	95	229	179	149	95	229	167	180	267	1
RTOR Reduction (vph)	0	22	0	0	15	0	0	0	108	0	0	1
Lane Group Flow (vph)	0	249	0	0	542	0	95	229	59	180	267	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		30.0			30.0		25.0	25.0	25.0	25.0	25.0	25.0
Effective Green, g (s)		30.0			30.0		25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio		0.43			0.43		0.36	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		719			524		351	571	494	378	561	274
v/s Ratio Prot								0.14			c0.17	
v/s Ratio Perm		0.15			c0.44		0.10		0.04	0.17		0.00
v/c Ratio		0.35			1.03		0.27	0.40	0.12	0.48	0.48	0.00
Uniform Delay, d1		13.6			20.2		16.1	17.0	15.2	17.6	17.6	14.6
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3			48.5		0.2	0.2	0.0	0.3	0.2	0.0
Delay (s)		13.8			68.7		16.3	17.2	15.3	17.9	17.8	14.6
Level of Service		B			E		B	B	B	B	B	B
Approach Delay (s/veh)		13.8			68.7			16.4			17.8	
Approach LOS		B			E			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	15.3
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

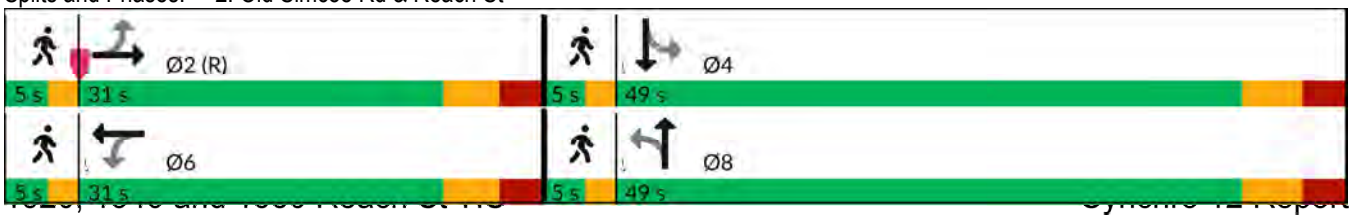
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	404	168	117	396	56	140	76	62	55	118	91
Future Volume (vph)	83	404	168	117	396	56	140	76	62	55	118	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.85	0.99		1.00	0.90	
Frt		0.956			0.981			0.933			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1547	0	1658	1697	0	1627	1667	0	1500	1495	0
Flt Permitted	0.219			0.136			0.617			0.662		
Satd. Flow (perm)	390	1547	0	237	1697	0	898	1667	0	1043	1495	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			8			61			58	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	90	439	183	127	430	61	152	83	67	60	128	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	622	0	127	491	0	152	150	0	60	227	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.4	24.4		24.4	24.4		42.1	42.1		42.1	42.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
v/c Ratio	0.71	1.20		1.65	0.88		0.32	0.17		0.11	0.28	
Control Delay (s/veh)	59.2	134.8		369.2	47.2		14.8	7.2		11.6	9.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	59.2	134.8		369.2	47.2		14.8	7.2		11.6	9.8	
LOS	E	F		F	D		B	A		B	A	
Approach Delay (s/veh)		125.3			113.4			11.0			10.2	
Approach LOS		F			F			B			B	

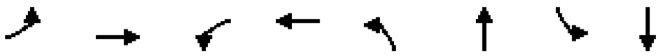
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.65			
Intersection Signal Delay (s/veh): 86.2		Intersection LOS: F	
Intersection Capacity Utilization 96.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	622	127	491	152	150	60	227
v/c Ratio	0.71	1.20	1.65	0.88	0.32	0.17	0.11	0.28
Control Delay (s/veh)	59.2	134.8	369.2	47.2	14.8	7.2	11.6	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.2	134.8	369.2	47.2	14.8	7.2	11.6	9.8
Queue Length 50th (m)	13.5	~129.3	~32.1	78.2	14.3	7.4	5.0	14.9
Queue Length 95th (m)	#38.6	#192.8	#65.9	#134.2	27.3	16.5	11.3	28.2
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	127	520	77	559	469	901	545	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	1.20	1.65	0.88	0.32	0.17	0.11	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	404	168	117	396	56	140	76	62	55	118	91
Future Volume (vph)	83	404	168	117	396	56	140	76	62	55	118	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.90	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.85	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.93		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1547		1658	1697		1383	1667		1497	1494	
Flt Permitted	0.22	1.00		0.14	1.00		0.62	1.00		0.66	1.00	
Satd. Flow (perm)	389	1547		238	1697		898	1667		1043	1494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	439	183	127	430	61	152	83	67	60	128	99
RTOR Reduction (vph)	0	15	0	0	5	0	0	29	0	0	28	0
Lane Group Flow (vph)	90	607	0	127	486	0	152	121	0	60	199	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Effective Green, g (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	127	505		77	554		469	872		545	781	
v/s Ratio Prot		0.39			0.29			0.07			0.13	
v/s Ratio Perm	0.23			c0.53			c0.17			0.06		
v/c Ratio	0.71	1.20		1.65	0.88		0.32	0.14		0.11	0.26	
Uniform Delay, d1	26.5	30.3		30.3	28.6		12.3	11.0		10.8	11.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	28.3	108.3		342.8	17.5		1.8	0.3		0.4	0.8	
Delay (s)	54.9	138.6		373.1	46.1		14.1	11.4		11.3	12.6	
Level of Service	D	F		F	D		B	B		B	B	
Approach Delay (s/veh)		128.0			113.3			12.8			12.3	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	87.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

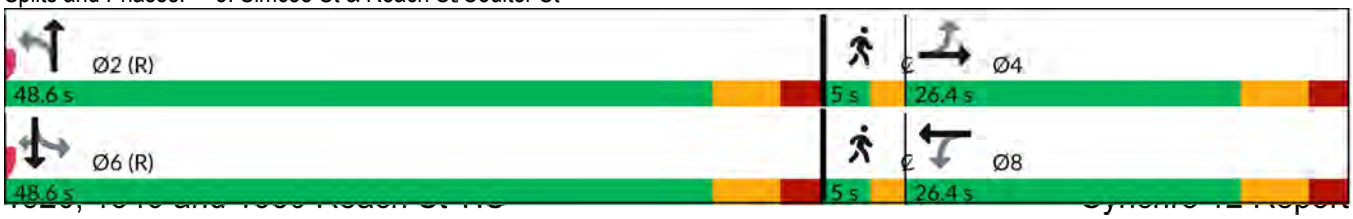
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	45	345	35	43	6	256	227	22	5	389	210
Future Volume (vph)	137	45	345	35	43	6	256	227	22	5	389	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.867			0.981			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1466	0	1675	1797	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.722			0.247			0.490			0.593		
Satd. Flow (perm)	1194	1466	0	432	1797	0	792	1754	0	1072	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		375			7			9				228
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	149	49	375	38	47	7	278	247	24	5	423	228
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	424	0	38	54	0	278	271	0	5	423	228
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	16.2	16.2		16.2	16.2		51.0	51.0		51.0	51.0	51.0
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.64	0.64		0.64	0.64	0.64
v/c Ratio	0.62	0.71		0.44	0.15		0.55	0.24		0.01	0.37	0.23
Control Delay (s/veh)	38.7	11.7		41.0	21.6		15.7	8.0		8.0	9.3	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	38.7	11.7		41.0	21.6		15.7	8.0		8.0	9.3	2.0
LOS	D	B		D	C		B	A		A	A	A
Approach Delay (s/veh)		18.7			29.6			11.9			6.8	
Approach LOS		B			C			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 13.1		Intersection LOS: B	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



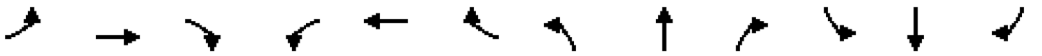
Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	149	424	38	54	278	271	5	423	228
v/c Ratio	0.62	0.71	0.44	0.15	0.55	0.24	0.01	0.37	0.23
Control Delay (s/veh)	38.7	11.7	41.0	21.6	15.7	8.0	8.0	9.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.7	11.7	41.0	21.6	15.7	8.0	8.0	9.3	2.0
Queue Length 50th (m)	20.9	6.2	5.1	5.9	20.6	14.8	0.3	26.7	0.0
Queue Length 95th (m)	33.8	28.5	12.6	12.7	58.9	34.8	1.9	58.1	9.5
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	313	661	113	476	504	1120	683	1151	977
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.64	0.34	0.11	0.55	0.24	0.01	0.37	0.23

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	45	345	35	43	6	256	227	22	5	389	210
Future Volume (vph)	137	45	345	35	43	6	256	227	22	5	389	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1571	1467		1663	1796		1534	1754		1717	1807	1404
Flt Permitted	0.72	1.00		0.25	1.00		0.49	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1193	1467		432	1796		792	1754		1071	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	49	375	38	47	7	278	247	24	5	423	228
RTOR Reduction (vph)	0	299	0	0	6	0	0	3	0	0	0	83
Lane Group Flow (vph)	149	125	0	38	48	0	278	268	0	5	423	145
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		51.0	51.0		51.0	51.0	51.0
Effective Green, g (s)	16.2	16.2		16.2	16.2		51.0	51.0		51.0	51.0	51.0
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.64	0.64		0.64	0.64	0.64
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	241	297		87	363		504	1118		682	1151	895
v/s Ratio Prot		0.09			0.03			0.15			0.23	
v/s Ratio Perm	c0.12			0.09			c0.35			0.00		0.10
v/c Ratio	0.62	0.42		0.44	0.13		0.55	0.24		0.01	0.37	0.16
Uniform Delay, d1	29.1	27.8		27.9	26.1		8.1	6.2		5.3	6.9	5.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.7	1.0		3.5	0.2		4.3	0.5		0.0	0.9	0.4
Delay (s)	33.7	28.8		31.4	26.3		12.4	6.7		5.3	7.8	6.3
Level of Service	C	C		C	C		B	A		A	A	A
Approach Delay (s/veh)		30.1			28.4			9.6			7.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	427	54	82	580	15	26
Future Volume (vph)	427	54	82	580	15	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.914	
Flt Protected				0.994	0.982	
Satd. Flow (prot)	1855	0	0	1872	1653	0
Flt Permitted				0.994	0.982	
Satd. Flow (perm)	1855	0	0	1872	1653	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	464	59	89	630	16	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	523	0	0	719	44	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	427	54	82	580	15	26
Future Volume (Veh/h)	427	54	82	580	15	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	464	59	89	630	16	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			523		1302	494
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			523		1302	494
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1043		162	576

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	523	719	44
Volume Left	0	89	16
Volume Right	59	0	28
cSH	1700	1043	299
Volume to Capacity	0.31	0.09	0.15
Queue Length 95th (m)	0.0	2.1	3.9
Control Delay (s/veh)	0.0	2.1	19.1
Lane LOS		A	C
Approach Delay (s/veh)	0.0	2.1	19.1
Approach LOS			C

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	404	49	34	549	113	77
Future Volume (vph)	404	49	34	549	113	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.945	
Flt Protected				0.997	0.971	
Satd. Flow (prot)	1855	0	0	1878	1690	0
Flt Permitted				0.997	0.971	
Satd. Flow (perm)	1855	0	0	1878	1690	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	439	53	37	597	123	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	492	0	0	634	207	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	404	49	34	549	113	77
Future Volume (Veh/h)	404	49	34	549	113	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	439	53	37	597	123	84
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			492		1137	466
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			492		1137	466
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		43	86
cM capacity (veh/h)			1071		216	597

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	492	634	207
Volume Left	0	37	123
Volume Right	53	0	84
cSH	1700	1071	291
Volume to Capacity	0.29	0.03	0.71
Queue Length 95th (m)	0.0	0.8	38.0
Control Delay (s/veh)	0.0	0.9	42.8
Lane LOS		A	E
Approach Delay (s/veh)	0.0	0.9	42.8
Approach LOS			E

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	431	22	78	506	43	49	0	180	43	0	28
Future Volume (vph)	28	431	22	78	506	43	49	0	180	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.991			0.894			0.947	
Flt Protected		0.997			0.994			0.989			0.970	
Satd. Flow (prot)	0	1867	0	0	1855	0	0	1629	0	0	1692	0
Flt Permitted		0.997			0.994			0.989			0.970	
Satd. Flow (perm)	0	1867	0	0	1855	0	0	1629	0	0	1692	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	468	24	85	550	47	53	0	196	47	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	522	0	0	682	0	0	249	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
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 75.9%		ICU Level of Service D	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	431	22	78	506	43	49	0	180	43	0	28
Future Volume (Veh/h)	28	431	22	78	506	43	49	0	180	43	0	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	468	24	85	550	47	53	0	196	47	0	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	597			492			1314	1307	480	1480	1296	574
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	597			492			1314	1307	480	1480	1296	574
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			55	100	67	26	100	94
cM capacity (veh/h)	980			1071			117	142	586	63	145	519

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	522	682	249	77
Volume Left	30	85	53	47
Volume Right	24	47	196	30
cSH	980	1071	316	96
Volume to Capacity	0.03	0.08	0.79	0.80
Queue Length 95th (m)	0.7	2.0	48.2	32.7
Control Delay (s/veh)	0.9	2.0	48.1	121.8
Lane LOS	A	A	E	F
Approach Delay (s/veh)	0.9	2.0	48.1	121.8
Approach LOS			E	F

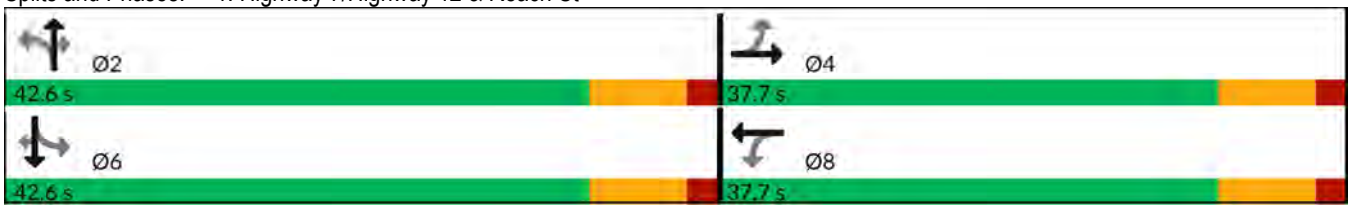
Intersection Summary				
Average Delay	15.1			
Intersection Capacity Utilization	75.9%	ICU Level of Service	D	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	233	121	215	214	218	71	531	320	155	297	2
Future Volume (vph)	11	233	121	215	214	218	71	531	320	155	297	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.955				0.850			0.850
Flt Protected		0.998			0.984		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1687	0	1708	1807	1366	1568	1740	1543
Flt Permitted		0.975			0.690		0.524			0.254		
Satd. Flow (perm)	0	1733	0	0	1183	0	942	1807	1366	419	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			36				348			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	253	132	234	233	237	77	577	348	168	323	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	397	0	0	704	0	77	577	348	168	323	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		30.1			30.1		32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio		0.39			0.39		0.41	0.41	0.41	0.41	0.41	0.41
v/c Ratio		0.57			1.46		0.20	0.77	0.45	0.97	0.45	0.00
Control Delay (s/veh)		21.5			243.0		15.8	27.7	3.9	89.1	18.5	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		21.5			243.0		15.8	27.7	3.9	89.1	18.5	0.0
LOS		C			F		B	C	A	F	B	A
Approach Delay (s/veh)		21.5			243.0			18.5			42.5	
Approach LOS		C			F			B			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 77.4			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.46			
Intersection Signal Delay (s/veh): 84.4		Intersection LOS: F	
Intersection Capacity Utilization 131.0%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	397	704	77	577	348	168	323	2
v/c Ratio	0.57	1.46	0.20	0.77	0.45	0.97	0.45	0.00
Control Delay (s/veh)	21.5	243.0	15.8	27.7	3.9	89.1	18.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.5	243.0	15.8	27.7	3.9	89.1	18.5	0.0
Queue Length 50th (m)	43.2	~150.2	7.0	70.4	0.0	23.3	33.0	0.0
Queue Length 95th (m)	70.5	#213.8	15.6	108.4	14.0	#60.8	53.3	0.0
Internal Link Dist (m)	1041.3	1564.3		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	695	481	426	819	809	189	789	734
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.46	0.18	0.70	0.43	0.89	0.41	0.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	233	121	215	214	218	71	531	320	155	297	2
Future Volume (vph)	11	233	121	215	214	218	71	531	320	155	297	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.96			0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1775			1685		1708	1807	1366	1568	1740	1543
Flt Permitted		0.97			0.69		0.52	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)		1733			1182		942	1807	1366	419	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	253	132	234	233	237	77	577	348	168	323	2
RTOR Reduction (vph)	0	22	0	0	22	0	0	0	204	0	0	1
Lane Group Flow (vph)	0	375	0	0	682	0	77	577	144	168	323	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		30.1			30.1		32.0	32.0	32.0	32.0	32.0	32.0
Effective Green, g (s)		30.1			30.1		32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio		0.39			0.39		0.41	0.41	0.41	0.41	0.41	0.41
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		673			459		389	747	564	173	719	637
v/s Ratio Prot								0.32			0.19	
v/s Ratio Perm		0.22			c0.58		0.08		0.11	c0.40		0.00
v/c Ratio		0.56			1.49		0.20	0.77	0.26	0.97	0.45	0.00
Uniform Delay, d1		18.5			23.7		14.5	19.6	14.9	22.2	16.4	13.3
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0			230.0		0.1	4.5	0.1	59.4	0.2	0.0
Delay (s)		19.5			253.7		14.6	24.1	15.0	81.6	16.5	13.3
Level of Service		B			F		B	C	B	F	B	B
Approach Delay (s/veh)		19.5			253.7			20.2			38.7	
Approach LOS		B			F			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	86.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	15.3
Intersection Capacity Utilization	131.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

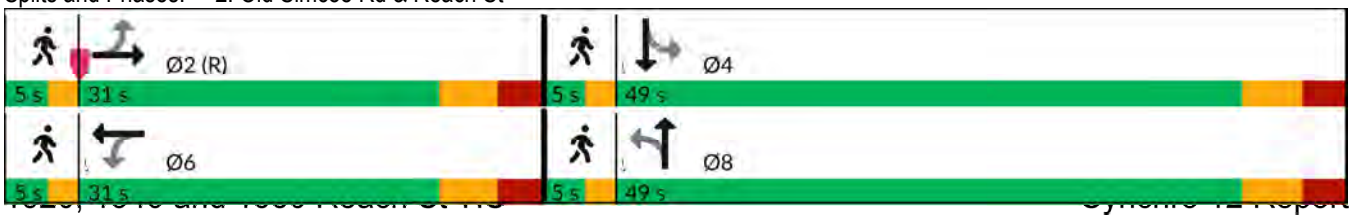
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	535	148	67	488	40	173	91	106	76	76	94
Future Volume (vph)	85	535	148	67	488	40	173	91	106	76	76	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			1.00		0.80	0.98		0.98	0.85	
Frt		0.967			0.989			0.919			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1649	0	1643	1667	0	1658	1618	0	1500	1388	0
Flt Permitted	0.137			0.137			0.641			0.624		
Satd. Flow (perm)	249	1649	0	237	1667	0	893	1618	0	966	1388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			4			87			92	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	92	582	161	73	530	43	188	99	115	83	83	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	743	0	73	573	0	188	214	0	83	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.2	24.2		24.2	24.2		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
v/c Ratio	1.15	1.36		0.96	1.06		0.40	0.24		0.16	0.24	
Control Delay (s/veh)	180.7	202.8		133.7	94.1		16.3	7.6		12.4	6.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	180.7	202.8		133.7	94.1		16.3	7.6		12.4	6.8	
LOS	F	F		F	F		B	A		B	A	
Approach Delay (s/veh)		200.3			98.6			11.7			8.5	
Approach LOS		F			F			B			A	

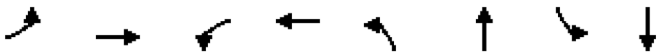
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.36			
Intersection Signal Delay (s/veh): 110.6		Intersection LOS: F	
Intersection Capacity Utilization 104.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	92	743	73	573	188	214	83	185
v/c Ratio	1.15	1.36	0.96	1.06	0.40	0.24	0.16	0.24
Control Delay (s/veh)	180.7	202.8	133.7	94.1	16.3	7.6	12.4	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	180.7	202.8	133.7	94.1	16.3	7.6	12.4	6.8
Queue Length 50th (m)	~18.8	~170.6	13.6	~112.0	18.6	10.8	7.1	7.8
Queue Length 95th (m)	#48.2	#237.9	m#31.7	#176.1	35.0	22.4	15.0	18.6
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	80	545	76	543	466	886	504	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.15	1.36	0.96	1.06	0.40	0.24	0.16	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	535	148	67	488	40	173	91	106	76	76	94
Future Volume (vph)	85	535	148	67	488	40	173	91	106	76	76	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.85	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.80	1.00		0.98	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1725	1650		1643	1667		1323	1618		1471	1389	
Flt Permitted	0.14	1.00		0.14	1.00		0.64	1.00		0.62	1.00	
Satd. Flow (perm)	249	1650		237	1667		893	1618		967	1389	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	582	161	73	530	43	188	99	115	83	83	102
RTOR Reduction (vph)	0	10	0	0	3	0	0	42	0	0	44	0
Lane Group Flow (vph)	92	733	0	73	570	0	188	172	0	83	141	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Effective Green, g (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	80	535		76	540		466	844		504	725	
v/s Ratio Prot		c0.44			0.34			0.11			0.10	
v/s Ratio Perm	0.37			0.31			c0.21			0.09		
v/c Ratio	1.15	1.37		0.96	1.06		0.40	0.20		0.16	0.19	
Uniform Delay, d1	30.4	30.4		29.8	30.4		13.0	11.5		11.2	11.4	
Progression Factor	1.00	1.00		1.44	1.44		1.00	1.00		1.00	1.00	
Incremental Delay, d2	146.8	178.1		87.3	52.4		2.6	0.5		0.7	0.6	
Delay (s)	177.2	208.5		130.2	96.1		15.6	12.0		11.9	12.0	
Level of Service	F	F		F	F		B	B		B	B	
Approach Delay (s/veh)		205.0			99.9			13.7			12.0	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	113.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

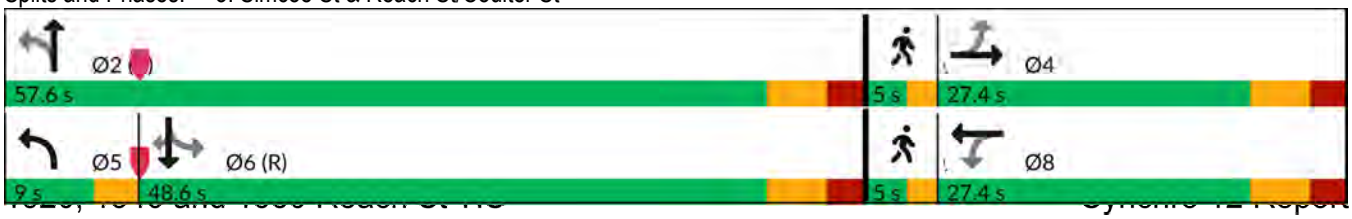
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	323	44	393	41	27	6	338	527	32	4	297	168
Future Volume (vph)	323	44	393	41	27	6	338	527	32	4	297	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97						1.00		1.00		
Frt		0.865			0.971			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1485	0	1675	1824	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.734			0.179			0.477			0.389		
Satd. Flow (perm)	1257	1485	0	316	1824	0	773	1842	0	706	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		427			7			6				183
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	351	48	427	45	29	7	367	573	35	4	323	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	351	475	0	45	36	0	367	608	0	4	323	183
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	27.4	27.4		27.4	27.4		9.0	57.6		48.6	48.6	48.6
Total Split (%)	30.4%	30.4%		30.4%	30.4%		10.0%	64.0%		54.0%	54.0%	54.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		6.0	51.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	26.0	26.0		26.0	26.0		54.6	51.2		42.2	42.2	42.2
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.61	0.57		0.47	0.47	0.47
v/c Ratio	0.97	0.65		0.49	0.07		0.71	0.58		0.01	0.37	0.24
Control Delay (s/veh)	31.2	6.6		48.2	20.3		19.4	15.1		13.0	17.0	3.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	31.2	6.6		48.2	20.3		19.4	15.1		13.0	17.0	3.1
LOS	C	A		D	C		B	B		B	B	A
Approach Delay (s/veh)		17.0			35.8			16.7			12.0	
Approach LOS		B			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay (s/veh): 16.5		Intersection LOS: B	
Intersection Capacity Utilization 96.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	351	475	45	36	367	608	4	323	183
v/c Ratio	0.97	0.65	0.49	0.07	0.71	0.58	0.01	0.37	0.24
Control Delay (s/veh)	31.2	6.6	48.2	20.3	19.4	15.1	13.0	17.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.2	6.6	48.2	20.3	19.4	15.1	13.0	17.0	3.1
Queue Length 50th (m)	59.1	39.9	6.4	3.6	30.0	62.2	0.4	34.6	0.0
Queue Length 95th (m)	m53.8	m24.2	#21.2	10.4	47.2	92.8	2.1	53.9	10.4
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	363	732	91	531	520	1050	331	863	755
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.65	0.49	0.07	0.71	0.58	0.01	0.37	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	323	44	393	41	27	6	338	527	32	4	297	168
Future Volume (vph)	323	44	393	41	27	6	338	527	32	4	297	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1486		1675	1824		1540	1843		1723	1842	1403
Flt Permitted	0.73	1.00		0.18	1.00		0.48	1.00		0.39	1.00	1.00
Satd. Flow (perm)	1257	1486		315	1824		773	1843		706	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	48	427	45	29	7	367	573	35	4	323	183
RTOR Reduction (vph)	0	304	0	0	5	0	0	3	0	0	0	97
Lane Group Flow (vph)	351	171	0	45	31	0	367	605	0	4	323	86
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	26.0	26.0		26.0	26.0		51.2	51.2		42.2	42.2	42.2
Effective Green, g (s)	26.0	26.0		26.0	26.0		51.2	51.2		42.2	42.2	42.2
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.57	0.57		0.47	0.47	0.47
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	363	429		91	526		490	1048		331	863	657
v/s Ratio Prot		0.12			0.02		c0.05	0.33			0.18	
v/s Ratio Perm	c0.28			0.14			c0.38			0.01		0.06
v/c Ratio	0.97	0.40		0.49	0.06		0.75	0.58		0.01	0.37	0.13
Uniform Delay, d1	31.6	25.7		26.5	23.1		14.8	12.5		12.8	15.4	13.5
Progression Factor	0.60	1.36		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.0	0.1		4.2	0.0		6.2	2.3		0.1	1.2	0.4
Delay (s)	26.8	35.1		30.7	23.2		21.0	14.8		12.8	16.6	13.9
Level of Service	C	D		C	C		C	B		B	B	B
Approach Delay (s/veh)		31.6			27.4			17.1			15.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	676	32	36	611	76	99
Future Volume (vph)	676	32	36	611	76	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.924	
Flt Protected				0.997	0.979	
Satd. Flow (prot)	1872	0	0	1878	1666	0
Flt Permitted				0.997	0.979	
Satd. Flow (perm)	1872	0	0	1878	1666	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	735	35	39	664	83	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	770	0	0	703	191	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 78.6%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	676	32	36	611	76	99
Future Volume (Veh/h)	676	32	36	611	76	99
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	735	35	39	664	83	108
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			770		1495	753
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			770		1495	753
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		36	74
cM capacity (veh/h)			844		129	410

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	770	703	191
Volume Left	0	39	83
Volume Right	35	0	108
cSH	1700	844	211
Volume to Capacity	0.45	0.05	0.91
Queue Length 95th (m)	0.0	1.1	55.6
Control Delay (s/veh)	0.0	1.2	87.0
Lane LOS		A	F
Approach Delay (s/veh)	0.0	1.2	87.0
Approach LOS			F

Intersection Summary			
Average Delay	10.5		
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	641	134	68	561	86	48
Future Volume (vph)	641	134	68	561	86	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.952	
Flt Protected				0.995	0.969	
Satd. Flow (prot)	1840	0	0	1874	1699	0
Flt Permitted				0.995	0.969	
Satd. Flow (perm)	1840	0	0	1874	1699	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	697	146	74	610	93	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	843	0	0	684	145	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 92.9%		ICU Level of Service F	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	641	134	68	561	86	48
Future Volume (Veh/h)	641	134	68	561	86	48
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	697	146	74	610	93	52
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			843		1528	770
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			843		1528	770
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		21	87
cM capacity (veh/h)			793		117	401

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	843	684	145
Volume Left	0	74	93
Volume Right	146	0	52
cSH	1700	793	157
Volume to Capacity	0.50	0.09	0.92
Queue Length 95th (m)	0.0	2.3	50.6
Control Delay (s/veh)	0.0	2.4	109.9
Lane LOS		A	F
Approach Delay (s/veh)	0.0	2.4	109.9
Approach LOS			F

Intersection Summary			
Average Delay	10.5		
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

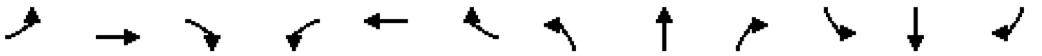
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	615	58	159	577	19	36	0	110	19	0	16
Future Volume (vph)	16	615	58	159	577	19	36	0	110	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.997			0.898			0.940	
Flt Protected		0.999			0.990			0.988			0.973	
Satd. Flow (prot)	0	1861	0	0	1859	0	0	1634	0	0	1685	0
Flt Permitted		0.999			0.990			0.988			0.973	
Satd. Flow (perm)	0	1861	0	0	1859	0	0	1634	0	0	1685	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	668	63	173	627	21	39	0	120	21	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	748	0	0	821	0	0	159	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
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 96.2%		ICU Level of Service F	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	615	58	159	577	19	36	0	110	19	0	16
Future Volume (Veh/h)	16	615	58	159	577	19	36	0	110	19	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	668	63	173	627	21	39	0	120	21	0	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	648			731			1734	1728	700	1837	1749	638
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	648			731			1734	1728	700	1837	1749	638
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			80			30	100	73	41	100	96
cM capacity (veh/h)	938			873			56	70	440	35	68	477

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	748	821	159	38
Volume Left	17	173	39	21
Volume Right	63	21	120	17
cSH	938	873	163	60
Volume to Capacity	0.02	0.20	0.98	0.63
Queue Length 95th (m)	0.4	5.6	56.8	19.9
Control Delay (s/veh)	0.5	4.7	120.2	135.4
Lane LOS	A	A	F	F
Approach Delay (s/veh)	0.5	4.7	120.2	135.4
Approach LOS			F	F

Intersection Summary				
Average Delay	16.1			
Intersection Capacity Utilization	96.2%	ICU Level of Service	F	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	168	92	216	171	140	92	222	159	172	258	1
Future Volume (vph)	1	168	92	216	171	140	92	222	159	172	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.952			0.964				0.850			0.850
Flt Protected					0.980		0.950			0.950		
Satd. Flow (prot)	0	1689	0	0	1577	0	1597	1606	1390	1643	1579	772
Flt Permitted		0.998			0.756		0.570			0.609		
Satd. Flow (perm)	0	1685	0	0	1217	0	958	1606	1390	1053	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			26				173			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	183	100	235	186	152	100	241	173	187	280	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	284	0	0	573	0	100	241	173	187	280	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		30.0			30.0		25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio		0.43			0.43		0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio		0.38			1.07		0.29	0.42	0.29	0.50	0.50	0.00
Control Delay (s/veh)		13.7			82.8		19.3	20.0	4.3	23.4	21.5	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		13.7			82.8		19.3	20.0	4.3	23.4	21.5	0.0
LOS		B			F		B	C	A	C	C	A
Approach Delay (s/veh)		13.7			82.8			14.6			22.3	
Approach LOS		B			F			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 70.3			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay (s/veh): 37.6		Intersection LOS: D	
Intersection Capacity Utilization 111.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	284	573	100	241	173	187	280	1
v/c Ratio	0.38	1.07	0.29	0.42	0.29	0.50	0.50	0.00
Control Delay (s/veh)	13.7	82.8	19.3	20.0	4.3	23.4	21.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.7	82.8	19.3	20.0	4.3	23.4	21.5	0.0
Queue Length 50th (m)	20.8	~83.8	9.3	23.5	0.0	18.9	28.2	0.0
Queue Length 95th (m)	38.0	#140.6	20.5	41.7	11.1	37.0	48.9	0.0
Internal Link Dist (m)	1041.3	1546.3		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	741	534	476	799	778	524	786	416
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	1.07	0.21	0.30	0.22	0.36	0.36	0.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	168	92	216	171	140	92	222	159	172	258	1
Future Volume (vph)	1	168	92	216	171	140	92	222	159	172	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1689			1577		1597	1606	1390	1643	1579	772
Flt Permitted		1.00			0.76		0.57	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)		1687			1217		959	1606	1390	1053	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	183	100	235	186	152	100	241	173	187	280	1
RTOR Reduction (vph)	0	22	0	0	15	0	0	0	111	0	0	1
Lane Group Flow (vph)	0	262	0	0	558	0	100	241	62	187	280	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		30.0			30.0		25.0	25.0	25.0	25.0	25.0	25.0
Effective Green, g (s)		30.0			30.0		25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio		0.43			0.43		0.36	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		719			519		341	571	494	374	561	274
v/s Ratio Prot								0.15			0.18	
v/s Ratio Perm		0.16			c0.46		0.10		0.04	c0.18		0.00
v/c Ratio		0.36			1.08		0.29	0.42	0.12	0.50	0.50	0.00
Uniform Delay, d1		13.7			20.2		16.3	17.2	15.3	17.8	17.7	14.6
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3			61.3		0.2	0.2	0.0	0.4	0.3	0.0
Delay (s)		14.0			81.4		16.5	17.4	15.3	18.1	18.0	14.6
Level of Service		B			F		B	B	B	B	B	B
Approach Delay (s/veh)		14.0			81.4			16.5			18.0	
Approach LOS		B			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	15.3
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

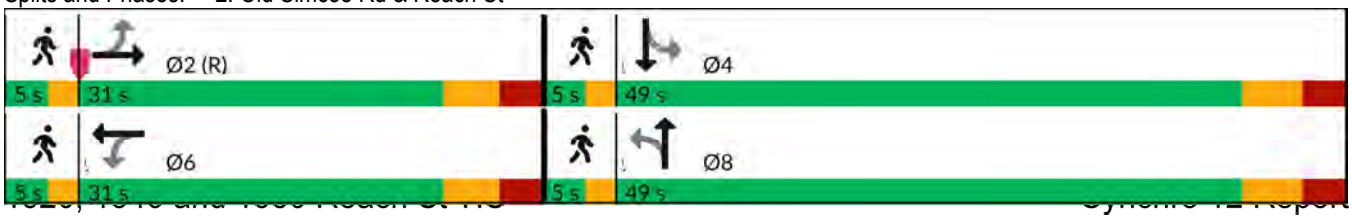
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	414	173	123	408	59	145	80	65	57	124	94
Future Volume (vph)	86	414	173	123	408	59	145	80	65	57	124	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.85	0.99		1.00	0.90	
Frt		0.956			0.981			0.933			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1547	0	1658	1697	0	1627	1667	0	1500	1497	0
Flt Permitted	0.199			0.136			0.611			0.657		
Satd. Flow (perm)	354	1547	0	237	1697	0	893	1667	0	1035	1497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			8			61			57	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	93	450	188	134	443	64	158	87	71	62	135	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	638	0	134	507	0	158	158	0	62	237	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.4	24.4		24.4	24.4		42.1	42.1		42.1	42.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
v/c Ratio	0.81	1.23		1.74	0.91		0.34	0.18		0.11	0.29	
Control Delay (s/veh)	76.7	146.9		406.5	51.1		15.0	7.4		11.6	10.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	76.7	146.9		406.5	51.1		15.0	7.4		11.6	10.1	
LOS	E	F		F	D		B	A		B	B	
Approach Delay (s/veh)		138.0			125.4			11.2			10.4	
Approach LOS		F			F			B			B	

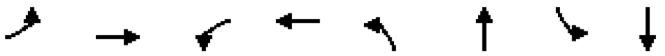
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.74			
Intersection Signal Delay (s/veh): 94.6		Intersection LOS: F	
Intersection Capacity Utilization 97.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	93	638	134	507	158	158	62	237
v/c Ratio	0.81	1.23	1.74	0.91	0.34	0.18	0.11	0.29
Control Delay (s/veh)	76.7	146.9	406.5	51.1	15.0	7.4	11.6	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.7	146.9	406.5	51.1	15.0	7.4	11.6	10.1
Queue Length 50th (m)	14.6	~135.2	~34.6	82.0	15.0	8.0	5.1	16.0
Queue Length 95th (m)	#42.2	#199.5	#69.1	#140.5	28.6	17.6	11.6	29.7
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	115	520	77	559	467	901	541	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	1.23	1.74	0.91	0.34	0.18	0.11	0.29

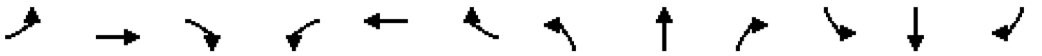
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	414	173	123	408	59	145	80	65	57	124	94
Future Volume (vph)	86	414	173	123	408	59	145	80	65	57	124	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.90	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.85	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.93		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1547		1658	1697		1386	1666		1497	1498	
Flt Permitted	0.20	1.00		0.14	1.00		0.61	1.00		0.66	1.00	
Satd. Flow (perm)	353	1547		238	1697		892	1666		1035	1498	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	450	188	134	443	64	158	87	71	62	135	102
RTOR Reduction (vph)	0	15	0	0	5	0	0	29	0	0	27	0
Lane Group Flow (vph)	93	623	0	134	502	0	158	129	0	62	210	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Effective Green, g (s)	29.4	29.4		29.4	29.4		47.1	47.1		47.1	47.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	115	505		77	554		466	871		541	783	
v/s Ratio Prot		0.40			0.30			0.08			0.14	
v/s Ratio Perm	0.26			c0.56			c0.18			0.06		
v/c Ratio	0.81	1.23		1.74	0.91		0.34	0.15		0.11	0.27	
Uniform Delay, d1	27.7	30.3		30.3	29.0		12.4	11.1		10.9	11.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	43.8	121.0		381.1	20.9		2.0	0.4		0.4	0.8	
Delay (s)	71.6	151.3		411.4	49.8		14.4	11.4		11.3	12.7	
Level of Service	E	F		F	D		B	B		B	B	
Approach Delay (s/veh)		141.2			125.4			12.9			12.4	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	96.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



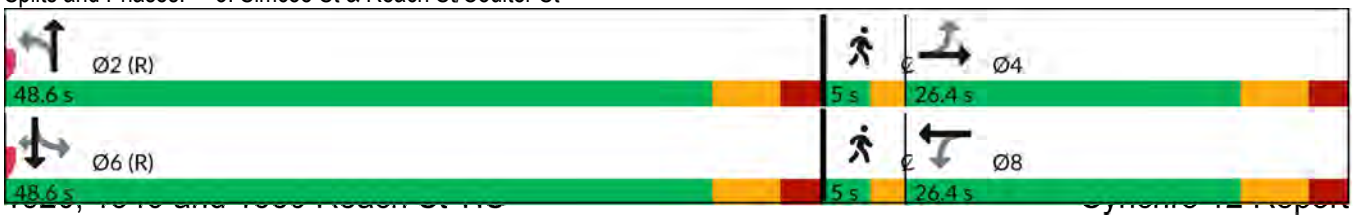
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	47	356	37	45	7	266	238	23	5	409	216
Future Volume (vph)	140	47	356	37	45	7	266	238	23	5	409	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.867			0.979			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1466	0	1675	1790	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.720			0.244			0.473			0.586		
Satd. Flow (perm)	1190	1466	0	427	1790	0	764	1754	0	1059	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		387			8			9				235
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	152	51	387	40	49	8	289	259	25	5	445	235
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	438	0	40	57	0	289	284	0	5	445	235
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	16.4	16.4		16.4	16.4		50.8	50.8		50.8	50.8	50.8
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.64	0.64		0.64	0.64	0.64
v/c Ratio	0.63	0.72		0.46	0.15		0.60	0.25		0.01	0.39	0.24
Control Delay (s/veh)	39.0	11.8		42.5	21.4		17.8	8.1		8.0	9.6	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.0	11.8		42.5	21.4		17.8	8.1		8.0	9.6	2.0
LOS	D	B		D	C		B	A		A	A	A
Approach Delay (s/veh)		18.8			30.1			13.0			7.0	
Approach LOS		B			C			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 13.5		Intersection LOS: B	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

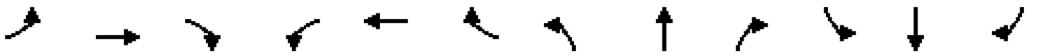
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	152	438	40	57	289	284	5	445	235
v/c Ratio	0.63	0.72	0.46	0.15	0.60	0.25	0.01	0.39	0.24
Control Delay (s/veh)	39.0	11.8	42.5	21.4	17.8	8.1	8.0	9.6	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.0	11.8	42.5	21.4	17.8	8.1	8.0	9.6	2.0
Queue Length 50th (m)	21.3	6.5	5.4	6.2	22.6	15.9	0.3	28.7	0.0
Queue Length 95th (m)	34.3	29.5	13.4	13.1	#73.1	36.5	1.9	61.9	9.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	312	670	111	475	485	1116	672	1147	977
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.65	0.36	0.12	0.60	0.25	0.01	0.39	0.24

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	47	356	37	45	7	266	238	23	5	409	216
Future Volume (vph)	140	47	356	37	45	7	266	238	23	5	409	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1571	1467		1664	1789		1535	1754		1717	1807	1404
Flt Permitted	0.72	1.00		0.24	1.00		0.47	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1190	1467		427	1789		765	1754		1058	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	51	387	40	49	8	289	259	25	5	445	235
RTOR Reduction (vph)	0	308	0	0	6	0	0	3	0	0	0	86
Lane Group Flow (vph)	152	130	0	40	51	0	289	281	0	5	445	149
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.4	16.4		16.4	16.4		50.8	50.8		50.8	50.8	50.8
Effective Green, g (s)	16.4	16.4		16.4	16.4		50.8	50.8		50.8	50.8	50.8
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.64	0.64		0.64	0.64	0.64
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	243	300		87	366		485	1113		671	1147	891
v/s Ratio Prot		0.09			0.03			0.16			0.25	
v/s Ratio Perm	c0.13			0.09			c0.38			0.00		0.11
v/c Ratio	0.63	0.43		0.46	0.14		0.60	0.25		0.01	0.39	0.17
Uniform Delay, d1	29.0	27.8		27.9	26.0		8.6	6.3		5.4	7.1	6.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.0	1.0		3.8	0.2		5.3	0.5		0.0	1.0	0.4
Delay (s)	34.0	28.8		31.7	26.2		13.9	6.9		5.4	8.1	6.4
Level of Service	C	C		C	C		B	A		A	A	A
Approach Delay (s/veh)		30.1			28.5			10.4			7.5	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	445	54	82	600	15	26
Future Volume (vph)	445	54	82	600	15	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.914	
Flt Protected				0.994	0.982	
Satd. Flow (prot)	1855	0	0	1872	1653	0
Flt Permitted				0.994	0.982	
Satd. Flow (perm)	1855	0	0	1872	1653	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	484	59	89	652	16	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	543	0	0	741	44	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	445	54	82	600	15	26
Future Volume (Veh/h)	445	54	82	600	15	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	484	59	89	652	16	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			543		1344	514
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			543		1344	514
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1026		153	561

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	543	741	44
Volume Left	0	89	16
Volume Right	59	0	28
cSH	1700	1026	285
Volume to Capacity	0.32	0.09	0.15
Queue Length 95th (m)	0.0	2.2	4.1
Control Delay (s/veh)	0.0	2.2	19.9
Lane LOS		A	C
Approach Delay (s/veh)	0.0	2.2	19.9
Approach LOS			C

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	422	49	34	569	113	77
Future Volume (vph)	422	49	34	569	113	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986				0.945	
Flt Protected				0.997	0.971	
Satd. Flow (prot)	1857	0	0	1878	1690	0
Flt Permitted				0.997	0.971	
Satd. Flow (perm)	1857	0	0	1878	1690	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	459	53	37	618	123	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	512	0	0	655	207	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

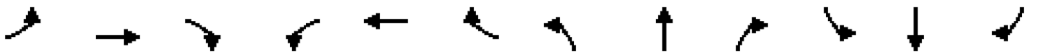
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.4%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	422	49	34	569	113	77
Future Volume (Veh/h)	422	49	34	569	113	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	459	53	37	618	123	84
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		1178	486
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			512		1178	486
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		40	86
cM capacity (veh/h)			1053		204	582

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	512	655	207
Volume Left	0	37	123
Volume Right	53	0	84
cSH	1700	1053	276
Volume to Capacity	0.30	0.04	0.75
Queue Length 95th (m)	0.0	0.8	41.6
Control Delay (s/veh)	0.0	0.9	48.6
Lane LOS		A	E
Approach Delay (s/veh)	0.0	0.9	48.6
Approach LOS			E

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	449	22	78	526	43	49	0	180	43	0	28
Future Volume (vph)	28	449	22	78	526	43	49	0	180	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.991			0.894			0.947	
Flt Protected		0.997			0.994			0.989			0.970	
Satd. Flow (prot)	0	1867	0	0	1855	0	0	1629	0	0	1692	0
Flt Permitted		0.997			0.994			0.989			0.970	
Satd. Flow (perm)	0	1867	0	0	1855	0	0	1629	0	0	1692	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	488	24	85	572	47	53	0	196	47	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	542	0	0	704	0	0	249	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
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 77.4%		ICU Level of Service D	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	449	22	78	526	43	49	0	180	43	0	28
Future Volume (Veh/h)	28	449	22	78	526	43	49	0	180	43	0	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	488	24	85	572	47	53	0	196	47	0	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	619			512			1356	1349	500	1522	1338	596
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	619			512			1356	1349	500	1522	1338	596
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			51	100	66	19	100	94
cM capacity (veh/h)	961			1053			109	134	571	58	136	504

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	542	704	249	77
Volume Left	30	85	53	47
Volume Right	24	47	196	30
cSH	961	1053	300	89
Volume to Capacity	0.03	0.08	0.83	0.87
Queue Length 95th (m)	0.7	2.0	53.1	35.5
Control Delay (s/veh)	0.9	2.0	55.8	144.2
Lane LOS	A	A	F	F
Approach Delay (s/veh)	0.9	2.0	55.8	144.2
Approach LOS			F	F

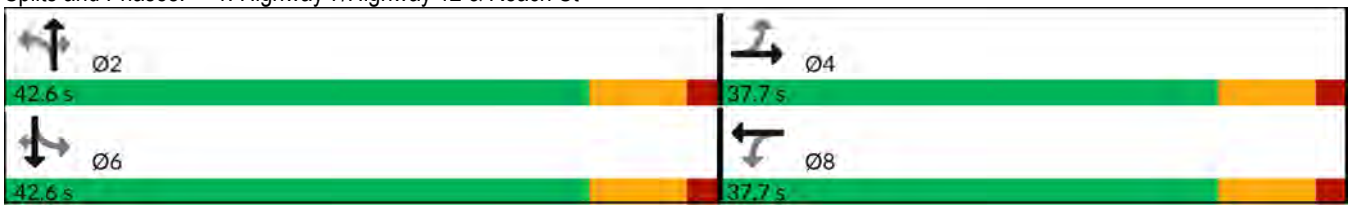
Intersection Summary				
Average Delay	17.1			
Intersection Capacity Utilization	77.4%	ICU Level of Service	D	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	242	127	222	223	224	75	558	330	160	313	2
Future Volume (vph)	11	242	127	222	223	224	75	558	330	160	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	0.0		0.0	0.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.955				0.850			0.850
Flt Protected		0.999			0.984		0.950			0.950		
Satd. Flow (prot)	0	1776	0	0	1687	0	1708	1807	1366	1568	1740	1543
Flt Permitted		0.975			0.662		0.509			0.243		
Satd. Flow (perm)	0	1733	0	0	1135	0	915	1807	1366	401	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			36				359			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	263	138	241	242	243	82	607	359	174	340	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	413	0	0	726	0	82	607	359	174	340	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		30.0			30.0		35.0	35.0	35.0	35.0	35.0	35.0
Actuated g/C Ratio		0.37			0.37		0.44	0.44	0.44	0.44	0.44	0.44
v/c Ratio		0.62			1.63		0.21	0.77	0.45	1.00	0.45	0.00
Control Delay (s/veh)		23.4			315.5		15.8	27.5	3.7	96.6	18.3	0.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		23.4			315.5		15.8	27.5	3.7	96.6	18.3	0.0
LOS		C			F		B	C	A	F	B	A
Approach Delay (s/veh)		23.4			315.5			18.4			44.6	
Approach LOS		C			F			B			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 80.3			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.63			
Intersection Signal Delay (s/veh): 104.0		Intersection LOS: F	
Intersection Capacity Utilization 134.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	413	726	82	607	359	174	340	2
v/c Ratio	0.62	1.63	0.21	0.77	0.45	1.00	0.45	0.00
Control Delay (s/veh)	23.4	315.5	15.8	27.5	3.7	96.6	18.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.4	315.5	15.8	27.5	3.7	96.6	18.3	0.0
Queue Length 50th (m)	45.7	~160.6	7.5	75.9	0.0	25.6	35.2	0.0
Queue Length 95th (m)	74.4	#225.1	16.6	#117.4	14.2	#64.4	56.5	0.0
Internal Link Dist (m)	1041.3	1564.3		274.7			419.4	
Turn Bay Length (m)			97.0		57.0	113.0		63.0
Base Capacity (vph)	669	446	398	787	797	174	758	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	1.63	0.21	0.77	0.45	1.00	0.45	0.00

Intersection Summary

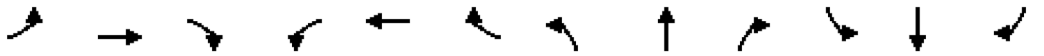
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	242	127	222	223	224	75	558	330	160	313	2
Future Volume (vph)	11	242	127	222	223	224	75	558	330	160	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)		7.7			7.7		7.6	7.6	7.6	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
Frt		0.95			0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1775			1686		1708	1807	1366	1568	1740	1543
Flt Permitted		0.97			0.66		0.51	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)		1733			1135		916	1807	1366	401	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	263	138	241	242	243	82	607	359	174	340	2
RTOR Reduction (vph)	0	23	0	0	23	0	0	0	203	0	0	1
Lane Group Flow (vph)	0	390	0	0	703	0	82	607	156	174	340	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		30.0			30.0		35.0	35.0	35.0	35.0	35.0	35.0
Effective Green, g (s)		30.0			30.0		35.0	35.0	35.0	35.0	35.0	35.0
Actuated g/C Ratio		0.37			0.37		0.44	0.44	0.44	0.44	0.44	0.44
Clearance Time (s)		7.7			7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0			3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)		647			424		399	787	595	174	758	672
v/s Ratio Prot								0.34			0.20	
v/s Ratio Perm		0.23			c0.62		0.09		0.11	c0.43		0.00
v/c Ratio		0.60			1.66		0.21	0.77	0.26	1.00	0.45	0.00
Uniform Delay, d1		20.3			25.2		14.0	19.2	14.4	22.7	15.9	12.8
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.6			306.9		0.1	4.3	0.1	68.2	0.2	0.0
Delay (s)		21.9			332.1		14.1	23.5	14.5	90.9	16.0	12.8
Level of Service		C			F		B	C	B	F	B	B
Approach Delay (s/veh)		21.9			332.1			19.7			41.3	
Approach LOS		C			F			B			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	108.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	80.3	Sum of lost time (s)	15.3
Intersection Capacity Utilization	134.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



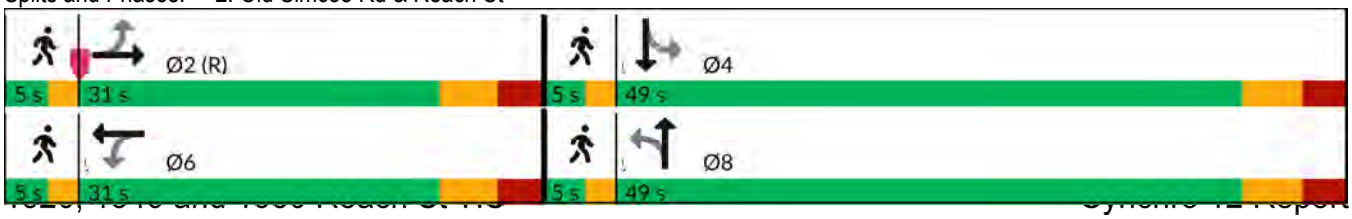
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	551	154	71	503	42	179	96	112	80	80	97
Future Volume (vph)	88	551	154	71	503	42	179	96	112	80	80	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			1.00		0.80	0.98		0.98	0.85	
Frt		0.967			0.988			0.919			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1649	0	1643	1666	0	1658	1617	0	1500	1392	0
Flt Permitted	0.137			0.137			0.637			0.617		
Satd. Flow (perm)	249	1649	0	237	1666	0	889	1617	0	956	1392	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			5			88			91	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	96	599	167	77	547	46	195	104	122	87	87	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	766	0	77	593	0	195	226	0	87	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	31.0	31.0		31.0	31.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		54.4%	54.4%		54.4%	54.4%	
Maximum Green (s)	24.2	24.2		24.2	24.2		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
v/c Ratio	1.20	1.41		1.01	1.09		0.42	0.26		0.17	0.25	
Control Delay (s/veh)	197.0	220.6		146.6	104.8		16.7	7.9		12.5	7.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	197.0	220.6		146.6	104.8		16.7	7.9		12.5	7.1	
LOS	F	F		F	F		B	A		B	A	
Approach Delay (s/veh)		217.9			109.6			11.9			8.8	
Approach LOS		F			F			B			A	

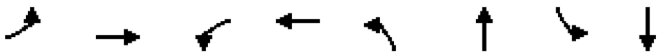
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.41			
Intersection Signal Delay (s/veh): 120.4		Intersection LOS: F	
Intersection Capacity Utilization 106.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	766	77	593	195	226	87	192
v/c Ratio	1.20	1.41	1.01	1.09	0.42	0.26	0.17	0.25
Control Delay (s/veh)	197.0	220.6	146.6	104.8	16.7	7.9	12.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	197.0	220.6	146.6	104.8	16.7	7.9	12.5	7.1
Queue Length 50th (m)	~20.2	~179.2	~14.4	~119.8	19.5	11.8	7.5	8.5
Queue Length 95th (m)	#50.0	#247.2	m#32.1	#184.0	36.5	24.0	15.7	19.7
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	80	545	76	543	464	886	499	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.41	1.01	1.09	0.42	0.26	0.17	0.25

Intersection Summary

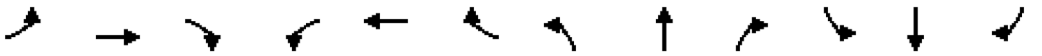
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	551	154	71	503	42	179	96	112	80	80	97
Future Volume (vph)	88	551	154	71	503	42	179	96	112	80	80	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.85	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.80	1.00		0.98	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1725	1649		1643	1667		1326	1617		1472	1392	
Flt Permitted	0.14	1.00		0.14	1.00		0.64	1.00		0.62	1.00	
Satd. Flow (perm)	249	1649		237	1667		889	1617		956	1392	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	599	167	77	547	46	195	104	122	87	87	105
RTOR Reduction (vph)	0	10	0	0	3	0	0	42	0	0	43	0
Lane Group Flow (vph)	96	756	0	77	590	0	195	184	0	87	149	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Effective Green, g (s)	29.2	29.2		29.2	29.2		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	80	535		76	540		464	844		499	726	
v/s Ratio Prot		c0.46			0.35			0.11			0.11	
v/s Ratio Perm	0.39			0.33			c0.22			0.09		
v/c Ratio	1.20	1.41		1.01	1.09		0.42	0.22		0.17	0.20	
Uniform Delay, d1	30.4	30.4		30.4	30.4		13.2	11.6		11.3	11.5	
Progression Factor	1.00	1.00		1.43	1.43		1.00	1.00		1.00	1.00	
Incremental Delay, d2	164.1	196.7		100.6	63.9		2.8	0.6		0.8	0.6	
Delay (s)	194.5	227.1		143.9	107.4		15.9	12.2		12.1	12.1	
Level of Service	F	F		F	F		B	B		B	B	
Approach Delay (s/veh)		223.4			111.6			13.9			12.1	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	123.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



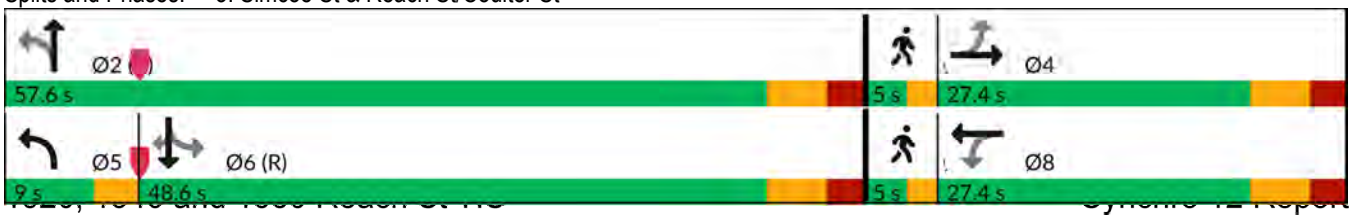
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	46	408	43	28	7	349	553	34	4	312	173
Future Volume (vph)	334	46	408	43	28	7	349	553	34	4	312	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97						1.00		1.00		
Frt		0.865			0.968			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1485	0	1675	1819	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.732			0.154			0.462			0.363		
Satd. Flow (perm)	1254	1485	0	271	1819	0	749	1842	0	659	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		443			8			6				188
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	363	50	443	47	30	8	379	601	37	4	339	188
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	493	0	47	38	0	379	638	0	4	339	188
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	27.4	27.4		27.4	27.4		9.0	57.6		48.6	48.6	48.6
Total Split (%)	30.4%	30.4%		30.4%	30.4%		10.0%	64.0%		54.0%	54.0%	54.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		6.0	51.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	26.0	26.0		26.0	26.0		54.6	51.2		42.2	42.2	42.2
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.61	0.57		0.47	0.47	0.47
v/c Ratio	1.00	0.66		0.60	0.07		0.75	0.61		0.01	0.39	0.25
Control Delay (s/veh)	38.4	6.7		62.9	20.0		22.1	15.8		13.0	17.3	3.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	38.4	6.7		62.9	20.0		22.1	15.8		13.0	17.3	3.1
LOS	D	A		E	C		C	B		B	B	A
Approach Delay (s/veh)		20.1			43.7			18.1			12.2	
Approach LOS		C			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay (s/veh): 18.4		Intersection LOS: B	
Intersection Capacity Utilization 99.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	363	493	47	38	379	638	4	339	188
v/c Ratio	1.00	0.66	0.60	0.07	0.75	0.61	0.01	0.39	0.25
Control Delay (s/veh)	38.4	6.7	62.9	20.0	22.1	15.8	13.0	17.3	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.4	6.7	62.9	20.0	22.1	15.8	13.0	17.3	3.1
Queue Length 50th (m)	~60.9	44.4	7.0	3.8	31.3	66.9	0.4	36.7	0.0
Queue Length 95th (m)	m55.2	m24.0	#24.3	10.8	#53.4	99.4	2.1	57.0	10.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	362	744	78	531	507	1050	308	863	757
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.66	0.60	0.07	0.75	0.61	0.01	0.39	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	46	408	43	28	7	349	553	34	4	312	173
Future Volume (vph)	334	46	408	43	28	7	349	553	34	4	312	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1486		1675	1820		1540	1843		1724	1842	1403
Flt Permitted	0.73	1.00		0.15	1.00		0.46	1.00		0.36	1.00	1.00
Satd. Flow (perm)	1254	1486		271	1820		749	1843		659	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	363	50	443	47	30	8	379	601	37	4	339	188
RTOR Reduction (vph)	0	315	0	0	6	0	0	3	0	0	0	100
Lane Group Flow (vph)	363	178	0	47	32	0	379	635	0	4	339	88
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	26.0	26.0		26.0	26.0		51.2	51.2		42.2	42.2	42.2
Effective Green, g (s)	26.0	26.0		26.0	26.0		51.2	51.2		42.2	42.2	42.2
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.57	0.57		0.47	0.47	0.47
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	362	429		78	525		478	1048		308	863	657
v/s Ratio Prot		0.12			0.02		c0.05	0.34			0.18	
v/s Ratio Perm	c0.29			0.17			c0.40			0.01		0.06
v/c Ratio	1.00	0.41		0.60	0.06		0.79	0.61		0.01	0.39	0.13
Uniform Delay, d1	32.0	25.9		27.6	23.2		15.6	12.8		12.8	15.6	13.5
Progression Factor	0.60	1.40		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.8	0.1		12.4	0.0		8.8	2.6		0.1	1.3	0.4
Delay (s)	34.0	36.2		40.0	23.2		24.4	15.4		12.8	16.9	14.0
Level of Service	C	D		D	C		C	B		B	B	B
Approach Delay (s/veh)		35.3			32.5			18.7			15.8	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	700	32	36	635	76	99
Future Volume (vph)	700	32	36	635	76	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.924	
Flt Protected				0.997	0.979	
Satd. Flow (prot)	1872	0	0	1878	1666	0
Flt Permitted				0.997	0.979	
Satd. Flow (perm)	1872	0	0	1878	1666	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	761	35	39	690	83	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	796	0	0	729	191	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 79.8%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	700	32	36	635	76	99
Future Volume (Veh/h)	700	32	36	635	76	99
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	761	35	39	690	83	108
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			796		1547	779
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			796		1547	779
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		31	73
cM capacity (veh/h)			826		120	396

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	796	729	191
Volume Left	0	39	83
Volume Right	35	0	108
cSH	1700	826	198
Volume to Capacity	0.47	0.05	0.96
Queue Length 95th (m)	0.0	1.1	61.1
Control Delay (s/veh)	0.0	1.2	104.5
Lane LOS		A	F
Approach Delay (s/veh)	0.0	1.2	104.5
Approach LOS			F

Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	665	134	68	585	86	48
Future Volume (vph)	665	134	68	585	86	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.952	
Flt Protected				0.995	0.969	
Satd. Flow (prot)	1840	0	0	1874	1699	0
Flt Permitted				0.995	0.969	
Satd. Flow (perm)	1840	0	0	1874	1699	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	723	146	74	636	93	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	869	0	0	710	145	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 95.4%		ICU Level of Service F	
Analysis Period (min) 15			



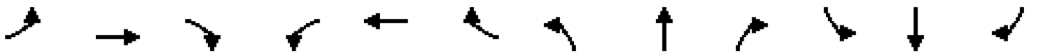
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	665	134	68	585	86	48
Future Volume (Veh/h)	665	134	68	585	86	48
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	723	146	74	636	93	52
Pedestrians						
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			869		1580	796
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			869		1580	796
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		14	87
cM capacity (veh/h)			775		109	387

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	869	710	145
Volume Left	0	74	93
Volume Right	146	0	52
cSH	1700	775	146
Volume to Capacity	0.51	0.10	0.99
Queue Length 95th (m)	0.0	2.4	55.4
Control Delay (s/veh)	0.0	2.4	132.3
Lane LOS		A	F
Approach Delay (s/veh)	0.0	2.4	132.3
Approach LOS			F

Intersection Summary			
Average Delay	12.1		
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	639	58	159	601	19	36	0	110	19	0	16
Future Volume (vph)	16	639	58	159	601	19	36	0	110	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.997			0.898			0.940	
Flt Protected		0.999			0.990			0.988			0.973	
Satd. Flow (prot)	0	1861	0	0	1859	0	0	1634	0	0	1685	0
Flt Permitted		0.999			0.990			0.988			0.973	
Satd. Flow (perm)	0	1861	0	0	1859	0	0	1634	0	0	1685	0
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	695	63	173	653	21	39	0	120	21	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	775	0	0	847	0	0	159	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
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 98.7%		ICU Level of Service F	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	639	58	159	601	19	36	0	110	19	0	16
Future Volume (Veh/h)	16	639	58	159	601	19	36	0	110	19	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	695	63	173	653	21	39	0	120	21	0	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	674			758			1787	1781	727	1890	1802	664
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	674			758			1787	1781	727	1890	1802	664
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			80			23	100	72	34	100	96
cM capacity (veh/h)	917			853			51	64	424	32	62	461

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	775	847	159	38
Volume Left	17	173	39	21
Volume Right	63	21	120	17
cSH	917	853	151	55
Volume to Capacity	0.02	0.20	1.05	0.70
Queue Length 95th (m)	0.4	5.7	62.6	21.9
Control Delay (s/veh)	0.5	4.9	147.7	161.5
Lane LOS	A	A	F	F
Approach Delay (s/veh)	0.5	4.9	147.7	161.5
Approach LOS			F	F

Intersection Summary			
Average Delay	18.8		
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

Appendix O

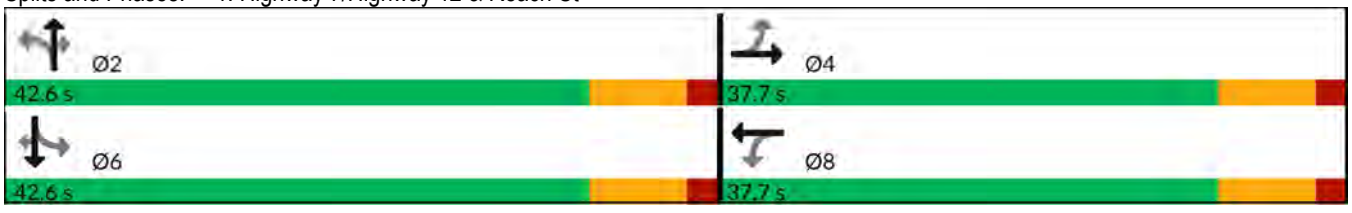
Total Traffic Operations Reports – Mitigation Measures

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	161	87	211	165	137	87	211	154	166	246	1
Future Volume (vph)	1	161	87	211	165	137	87	211	154	166	246	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.947			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1679	0	1526	1600	0	1597	1606	1390	1643	1579	772
Flt Permitted	0.526			0.593			0.595			0.616		
Satd. Flow (perm)	988	1679	0	952	1600	0	1000	1606	1390	1065	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			60				167			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	175	95	229	179	149	95	229	167	180	267	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	270	0	229	328	0	95	229	167	180	267	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	20.6	20.6		20.6	20.6		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.41	0.41	0.41	0.41	0.41	0.41
v/c Ratio	0.00	0.46		0.72	0.57		0.23	0.35	0.25	0.41	0.41	0.00
Control Delay (s/veh)	12.0	15.6		30.8	17.0		16.1	16.2	4.1	18.7	17.1	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.0	15.6		30.8	17.0		16.1	16.2	4.1	18.7	17.1	0.0
LOS	B	B		C	B		B	B	A	B	B	A
Approach Delay (s/veh)		15.5			22.7			12.1			17.7	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 61.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 17.4		Intersection LOS: B	
Intersection Capacity Utilization 94.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	270	229	328	95	229	167	180	267	1
v/c Ratio	0.00	0.46	0.72	0.57	0.23	0.35	0.25	0.41	0.41	0.00
Control Delay (s/veh)	12.0	15.6	30.8	17.0	16.1	16.2	4.1	18.7	17.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.0	15.6	30.8	17.0	16.1	16.2	4.1	18.7	17.1	0.0
Queue Length 50th (m)	0.1	19.4	21.8	23.5	6.8	17.2	0.0	14.0	20.8	0.0
Queue Length 95th (m)	0.9	35.7	43.1	43.4	19.3	39.4	10.9	35.3	46.4	0.0
Internal Link Dist (m)		1041.3		1546.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	488	849	470	821	576	925	871	614	910	472
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.32	0.49	0.40	0.16	0.25	0.19	0.29	0.29	0.00

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	161	87	211	165	137	87	211	154	166	246	1
Future Volume (vph)	1	161	87	211	165	137	87	211	154	166	246	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1680		1526	1600		1597	1606	1390	1643	1579	772
Flt Permitted	0.53	1.00		0.59	1.00		0.59	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	988	1680		952	1600		1000	1606	1390	1065	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	175	95	229	179	149	95	229	167	180	267	1
RTOR Reduction (vph)	0	26	0	0	40	0	0	0	98	0	0	1
Lane Group Flow (vph)	1	244	0	229	288	0	95	229	69	180	267	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	20.6	20.6		20.6	20.6		25.3	25.3	25.3	25.3	25.3	25.3
Effective Green, g (s)	20.6	20.6		20.6	20.6		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.41	0.41	0.41	0.41	0.41	0.41
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	332	565		320	538		413	663	574	440	652	319
v/s Ratio Prot		0.15			0.18			0.14			c0.17	
v/s Ratio Perm	0.00			c0.24			0.10		0.05	0.17		0.00
v/c Ratio	0.00	0.43		0.72	0.54		0.23	0.35	0.12	0.41	0.41	0.00
Uniform Delay, d1	13.5	15.8		17.7	16.4		11.6	12.3	11.1	12.7	12.7	10.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.5		7.4	1.0		0.1	0.1	0.0	0.2	0.2	0.0
Delay (s)	13.5	16.3		25.2	17.5		11.7	12.4	11.1	12.9	12.8	10.5
Level of Service	B	B		C	B		B	B	B	B	B	B
Approach Delay (s/veh)		16.3			20.6			11.8			12.9	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	15.3
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

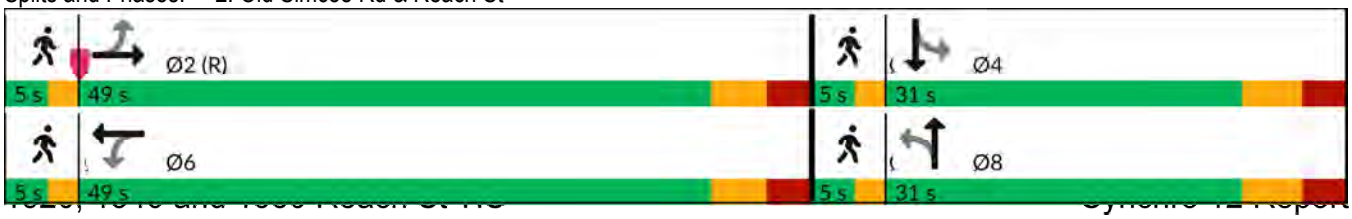
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	404	168	117	396	56	140	76	62	55	118	91
Future Volume (vph)	83	404	168	117	396	56	140	76	62	55	118	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.86	0.99		1.00	0.90	
Frt		0.956			0.981			0.933			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1547	0	1658	1697	0	1627	1667	0	1500	1495	0
Flt Permitted	0.388			0.285			0.577			0.662		
Satd. Flow (perm)	691	1547	0	498	1697	0	849	1667	0	1043	1495	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			11			44			42	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	90	439	183	127	430	61	152	83	67	60	128	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	622	0	127	491	0	152	150	0	60	227	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	49.0	49.0		49.0	49.0		31.0	31.0		31.0	31.0	
Total Split (%)	54.4%	54.4%		54.4%	54.4%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	42.4	42.4		42.4	42.4		24.1	24.1		24.1	24.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.32	0.32		0.32	0.32	
v/c Ratio	0.25	0.75		0.48	0.55		0.55	0.26		0.18	0.44	
Control Delay (s/veh)	13.9	22.8		21.4	16.7		34.3	17.2		23.7	22.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	13.9	22.8		21.4	16.7		34.3	17.2		23.7	22.7	
LOS	B	C		C	B		C	B		C	C	
Approach Delay (s/veh)		21.6			17.6			25.8			22.9	
Approach LOS		C			B			C			C	

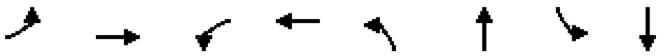
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 21.2		Intersection LOS: C	
Intersection Capacity Utilization 96.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary

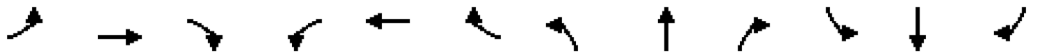


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	622	127	491	152	150	60	227
v/c Ratio	0.25	0.75	0.48	0.55	0.55	0.26	0.18	0.44
Control Delay (s/veh)	13.9	22.8	21.4	16.7	34.3	17.2	23.7	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.9	22.8	21.4	16.7	34.3	17.2	23.7	22.7
Queue Length 50th (m)	8.0	75.6	13.2	52.0	21.5	13.1	7.4	24.7
Queue Length 95th (m)	17.4	119.9	30.5	79.8	41.6	27.3	16.8	45.2
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	363	829	262	898	274	568	337	511
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.75	0.48	0.55	0.55	0.26	0.18	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	404	168	117	396	56	140	76	62	55	118	91
Future Volume (vph)	83	404	168	117	396	56	140	76	62	55	118	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.90	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.86	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.93		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1547		1640	1697		1394	1667		1497	1494	
Flt Permitted	0.39	1.00		0.29	1.00		0.58	1.00		0.66	1.00	
Satd. Flow (perm)	691	1547		492	1697		846	1667		1043	1494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	439	183	127	430	61	152	83	67	60	128	99
RTOR Reduction (vph)	0	15	0	0	5	0	0	30	0	0	28	0
Lane Group Flow (vph)	90	607	0	127	486	0	152	120	0	60	199	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Effective Green, g (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.32	0.32		0.32	0.32	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	363	814		259	893		273	538		337	483	
v/s Ratio Prot		c0.39			0.29			0.07			0.13	
v/s Ratio Perm	0.13			0.26			c0.18			0.06		
v/c Ratio	0.25	0.75		0.49	0.54		0.56	0.22		0.18	0.41	
Uniform Delay, d1	11.6	16.6		13.6	14.1		25.1	22.2		21.9	23.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	6.1		6.5	2.4		8.0	1.0		1.2	2.6	
Delay (s)	13.2	22.7		20.1	16.5		33.1	23.2		23.0	26.3	
Level of Service	B	C		C	B		C	C		C	C	
Approach Delay (s/veh)		21.5			17.2			28.2			25.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



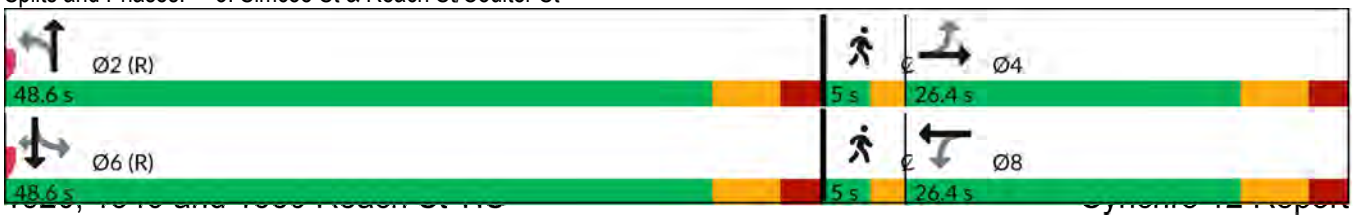
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	45	345	35	43	6	256	227	22	5	389	210
Future Volume (vph)	137	45	345	35	43	6	256	227	22	5	389	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.867			0.981			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1466	0	1675	1797	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.722			0.247			0.490			0.593		
Satd. Flow (perm)	1194	1466	0	432	1797	0	792	1754	0	1072	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		375			7			9				228
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	149	49	375	38	47	7	278	247	24	5	423	228
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	424	0	38	54	0	278	271	0	5	423	228
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	16.2	16.2		16.2	16.2		51.0	51.0		51.0	51.0	51.0
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.64	0.64		0.64	0.64	0.64
v/c Ratio	0.62	0.71		0.44	0.15		0.55	0.24		0.01	0.37	0.23
Control Delay (s/veh)	38.7	11.7		41.0	21.6		15.7	8.0		8.0	9.3	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	38.7	11.7		41.0	21.6		15.7	8.0		8.0	9.3	2.0
LOS	D	B		D	C		B	A		A	A	A
Approach Delay (s/veh)		18.7			29.6			11.9			6.8	
Approach LOS		B			C			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 13.1		Intersection LOS: B	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



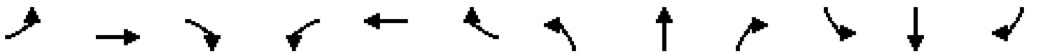
Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	149	424	38	54	278	271	5	423	228
v/c Ratio	0.62	0.71	0.44	0.15	0.55	0.24	0.01	0.37	0.23
Control Delay (s/veh)	38.7	11.7	41.0	21.6	15.7	8.0	8.0	9.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.7	11.7	41.0	21.6	15.7	8.0	8.0	9.3	2.0
Queue Length 50th (m)	20.9	6.2	5.1	5.9	20.6	14.8	0.3	26.7	0.0
Queue Length 95th (m)	33.8	28.5	12.6	12.7	58.9	34.8	1.9	58.1	9.5
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	313	661	113	476	504	1120	683	1151	977
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.64	0.34	0.11	0.55	0.24	0.01	0.37	0.23

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	45	345	35	43	6	256	227	22	5	389	210
Future Volume (vph)	137	45	345	35	43	6	256	227	22	5	389	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1571	1467		1663	1796		1534	1754		1717	1807	1404
Flt Permitted	0.72	1.00		0.25	1.00		0.49	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1193	1467		432	1796		792	1754		1071	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	49	375	38	47	7	278	247	24	5	423	228
RTOR Reduction (vph)	0	299	0	0	6	0	0	3	0	0	0	83
Lane Group Flow (vph)	149	125	0	38	48	0	278	268	0	5	423	145
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		51.0	51.0		51.0	51.0	51.0
Effective Green, g (s)	16.2	16.2		16.2	16.2		51.0	51.0		51.0	51.0	51.0
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.64	0.64		0.64	0.64	0.64
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	241	297		87	363		504	1118		682	1151	895
v/s Ratio Prot		0.09			0.03			0.15			0.23	
v/s Ratio Perm	c0.12			0.09			c0.35			0.00		0.10
v/c Ratio	0.62	0.42		0.44	0.13		0.55	0.24		0.01	0.37	0.16
Uniform Delay, d1	29.1	27.8		27.9	26.1		8.1	6.2		5.3	6.9	5.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.7	1.0		3.5	0.2		4.3	0.5		0.0	0.9	0.4
Delay (s)	33.7	28.8		31.4	26.3		12.4	6.7		5.3	7.8	6.3
Level of Service	C	C		C	C		B	A		A	A	A
Approach Delay (s/veh)		30.1			28.4			9.6			7.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	427	54	82	580	15	26
Future Volume (vph)	427	54	82	580	15	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	1855	0	0	1872	1750	1566
Flt Permitted				0.994	0.950	
Satd. Flow (perm)	1855	0	0	1872	1750	1566
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	464	59	89	630	16	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	523	0	0	719	16	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	427	54	82	580	15	26
Future Volume (Veh/h)	427	54	82	580	15	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	464	59	89	630	16	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			523		1302	494
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			523		1302	494
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1043		162	576

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	523	719	16	28
Volume Left	0	89	16	0
Volume Right	59	0	0	28
cSH	1700	1043	162	576
Volume to Capacity	0.31	0.09	0.10	0.05
Queue Length 95th (m)	0.0	2.1	2.4	1.2
Control Delay (s/veh)	0.0	2.1	29.6	11.6
Lane LOS		A	D	B
Approach Delay (s/veh)	0.0	2.1	18.1	
Approach LOS			C	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	404	49	34	613	49	77
Future Volume (vph)	404	49	34	613	49	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.917	
Flt Protected				0.997	0.981	
Satd. Flow (prot)	1855	0	0	1878	1657	0
Flt Permitted				0.997	0.981	
Satd. Flow (perm)	1855	0	0	1878	1657	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	439	53	37	666	53	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	492	0	0	703	137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	404	49	34	613	49	77
Future Volume (Veh/h)	404	49	34	613	49	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	439	53	37	666	53	84
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				243		
pX, platoon unblocked					0.80	
vC, conflicting volume			492		1206	466
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			492		1131	466
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		69	86
cM capacity (veh/h)			1071		173	597

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	492	703	137
Volume Left	0	37	53
Volume Right	53	0	84
cSH	1700	1071	307
Volume to Capacity	0.29	0.03	0.45
Queue Length 95th (m)	0.0	0.8	16.7
Control Delay (s/veh)	0.0	0.9	25.9
Lane LOS		A	D
Approach Delay (s/veh)	0.0	0.9	25.9
Approach LOS			D

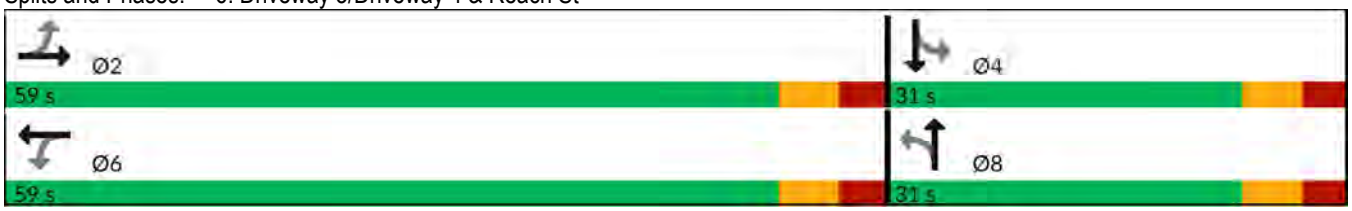
Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	431	22	78	506	43	113	0	180	43	0	28
Future Volume (vph)	28	431	22	78	506	43	113	0	180	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	121.0		0.0	171.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	70.0			70.0			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.988			0.917			0.947	
Flt Protected	0.950			0.950				0.981			0.970	
Satd. Flow (prot)	1789	1870	0	1789	1861	0	0	1657	0	0	1692	0
Flt Permitted	0.339			0.416				0.840			0.652	
Satd. Flow (perm)	638	1870	0	784	1861	0	0	1419	0	0	1137	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			8			87			48	
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	468	24	85	550	47	123	0	196	47	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	492	0	85	597	0	0	319	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	59.0	59.0		59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%		65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	52.0	52.0		52.0	52.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	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	
Act Effct Green (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.27			0.27	
v/c Ratio	0.08	0.45		0.19	0.55			0.72			0.23	
Control Delay (s/veh)	9.2	12.5		10.4	14.1			32.3			14.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	9.2	12.5		10.4	14.1			32.3			14.2	
LOS	A	B		B	B			C			B	
Approach Delay (s/veh)		12.3			13.6			32.3			14.2	
Approach LOS		B			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 16.9		Intersection LOS: B	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Driveway 3/Driveway 4 & Reach St



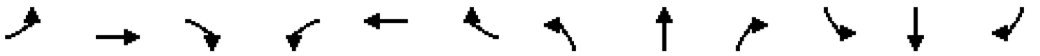
6: Driveway 3/Driveway 4 & Reach St



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	30	492	85	597	319	77
v/c Ratio	0.08	0.45	0.19	0.55	0.72	0.23
Control Delay (s/veh)	9.2	12.5	10.4	14.1	32.3	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.2	12.5	10.4	14.1	32.3	14.2
Queue Length 50th (m)	2.1	44.6	6.5	58.5	36.5	3.8
Queue Length 95th (m)	6.0	66.9	13.9	87.1	#73.0	14.3
Internal Link Dist (m)		219.0		807.2	311.1	297.9
Turn Bay Length (m)	121.0		171.0			
Base Capacity (vph)	368	1082	452	1078	442	338
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.45	0.19	0.55	0.72	0.23

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	431	22	78	506	43	113	0	180	43	0	28
Future Volume (vph)	28	431	22	78	506	43	113	0	180	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.92			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1789	1870		1789	1861			1657			1693	
Flt Permitted	0.34	1.00		0.42	1.00			0.84			0.65	
Satd. Flow (perm)	638	1870		783	1861			1419			1137	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	468	24	85	550	47	123	0	196	47	0	30
RTOR Reduction (vph)	0	2	0	0	3	0	0	64	0	0	35	0
Lane Group Flow (vph)	30	490	0	85	594	0	0	255	0	0	42	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Effective Green, g (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.27			0.27	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	368	1080		452	1075			378			303	
v/s Ratio Prot		0.26			c0.32							
v/s Ratio Perm	0.05			0.11				c0.18			0.04	
v/c Ratio	0.08	0.45		0.19	0.55			0.68			0.14	
Uniform Delay, d1	8.4	10.9		9.0	11.8			29.5			25.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.4	1.4		0.9	2.0			9.3			0.9	
Delay (s)	8.9	12.2		9.9	13.8			38.8			26.1	
Level of Service	A	B		A	B			D			C	
Approach Delay (s/veh)		12.1			13.3			38.8			26.1	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	233	121	215	214	218	71	531	320	155	297	2
Future Volume (vph)	11	233	121	215	214	218	71	531	320	155	297	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949			0.924				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	1771	0	1700	1661	0	1708	1807	1366	1568	1740	1543
Flt Permitted	0.323			0.428			0.540			0.281		
Satd. Flow (perm)	552	1771	0	766	1661	0	971	1807	1366	464	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			73				348			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	253	132	234	233	237	77	577	348	168	323	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	385	0	234	470	0	77	577	348	168	323	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	25.8	25.8		25.8	25.8		31.8	31.8	31.8	31.8	31.8	31.8
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.43	0.43	0.43	0.43	0.43	0.43
v/c Ratio	0.06	0.60		0.87	0.74		0.18	0.74	0.44	0.84	0.43	0.00
Control Delay (s/veh)	17.4	22.0		55.0	25.9		15.3	24.7	3.7	56.2	17.3	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.4	22.0		55.0	25.9		15.3	24.7	3.7	56.2	17.3	0.0
LOS	B	C		E	C		B	C	A	E	B	A
Approach Delay (s/veh)		21.9			35.6			16.7			30.5	
Approach LOS		C			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 73.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 25.2		Intersection LOS: C	
Intersection Capacity Utilization 108.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	12	385	234	470	77	577	348	168	323	2
v/c Ratio	0.06	0.60	0.87	0.74	0.18	0.74	0.44	0.84	0.43	0.00
Control Delay (s/veh)	17.4	22.0	55.0	25.9	15.3	24.7	3.7	56.2	17.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.4	22.0	55.0	25.9	15.3	24.7	3.7	56.2	17.3	0.0
Queue Length 50th (m)	1.2	41.1	31.5	50.6	7.0	70.4	0.0	21.9	33.0	0.0
Queue Length 95th (m)	4.6	67.3	#70.6	84.3	15.6	108.4	14.0	#57.7	53.3	0.0
Internal Link Dist (m)		1041.3		1564.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	230	761	320	736	473	881	844	226	848	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.51	0.73	0.64	0.16	0.65	0.41	0.74	0.38	0.00

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	233	121	215	214	218	71	531	320	155	297	2
Future Volume (vph)	11	233	121	215	214	218	71	531	320	155	297	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.95		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1623	1771		1700	1662		1708	1807	1366	1568	1740	1543
Flt Permitted	0.32	1.00		0.43	1.00		0.54	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)	551	1771		766	1662		971	1807	1366	464	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	253	132	234	233	237	77	577	348	168	323	2
RTOR Reduction (vph)	0	24	0	0	47	0	0	0	196	0	0	1
Lane Group Flow (vph)	12	361	0	234	423	0	77	577	152	168	323	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	25.8	25.8		25.8	25.8		31.8	31.8	31.8	31.8	31.8	31.8
Effective Green, g (s)	25.8	25.8		25.8	25.8		31.8	31.8	31.8	31.8	31.8	31.8
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.44	0.44	0.44	0.44	0.44	0.44
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	195	626		271	588		423	788	595	202	759	673
v/s Ratio Prot		0.20			0.25			0.32			0.19	
v/s Ratio Perm	0.02			c0.31			0.08		0.11	c0.36		0.00
v/c Ratio	0.06	0.58		0.86	0.72		0.18	0.73	0.26	0.83	0.43	0.00
Uniform Delay, d1	15.6	19.1		21.9	20.4		12.6	17.0	13.0	18.2	14.2	11.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.3		23.6	4.2		0.1	3.0	0.1	23.4	0.1	0.0
Delay (s)	15.7	20.4		45.5	24.6		12.7	20.1	13.1	41.5	14.4	11.6
Level of Service	B	C		D	C		B	C	B	D	B	B
Approach Delay (s/veh)		20.3			31.5			17.1			23.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	15.3
Intersection Capacity Utilization	108.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

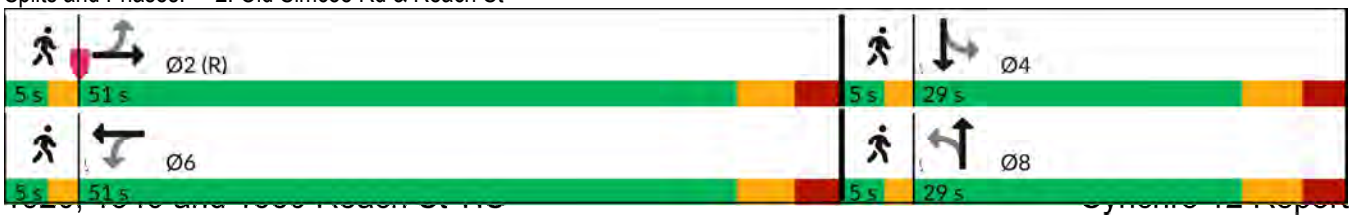
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	535	148	67	488	40	173	91	106	76	76	94
Future Volume (vph)	85	535	148	67	488	40	173	91	106	76	76	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			1.00		0.81	0.98		0.98	0.85	
Frt		0.967			0.989			0.919			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1649	0	1643	1667	0	1658	1618	0	1500	1388	0
Flt Permitted	0.337			0.213			0.636			0.589		
Satd. Flow (perm)	609	1649	0	368	1667	0	894	1618	0	913	1388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			6			61			65	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	92	582	161	73	530	43	188	99	115	83	83	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	743	0	73	573	0	188	214	0	83	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	44.2	44.2		44.2	44.2		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.30	0.30		0.30	0.30	
v/c Ratio	0.28	0.82		0.36	0.63		0.70	0.41		0.30	0.40	
Control Delay (s/veh)	13.7	25.3		14.8	13.3		44.2	20.4		28.1	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	13.7	25.3		14.8	13.3		44.2	20.4		28.1	19.0	
LOS	B	C		B	B		D	C		C	B	
Approach Delay (s/veh)		24.0			13.5			31.5			21.8	
Approach LOS		C			B			C			C	

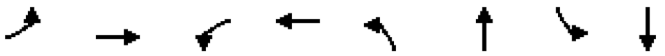
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 22.0		Intersection LOS: C	
Intersection Capacity Utilization 104.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



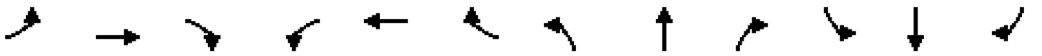
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	92	743	73	573	188	214	83	185
v/c Ratio	0.28	0.82	0.36	0.63	0.70	0.41	0.30	0.40
Control Delay (s/veh)	13.7	25.3	14.8	13.3	44.2	20.4	28.1	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.7	25.3	14.8	13.3	44.2	20.4	28.1	19.0
Queue Length 50th (m)	8.0	96.1	4.8	38.8	28.7	20.3	11.0	15.8
Queue Length 95th (m)	17.8	#155.9	m8.3	54.4	#59.6	39.5	23.3	33.9
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	332	911	201	914	268	528	273	461
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.82	0.36	0.63	0.70	0.41	0.30	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	535	148	67	488	40	173	91	106	76	76	94
Future Volume (vph)	85	535	148	67	488	40	173	91	106	76	76	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.85	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.80	1.00		0.98	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1714	1650		1643	1667		1325	1618		1472	1389	
Flt Permitted	0.34	1.00		0.21	1.00		0.64	1.00		0.59	1.00	
Satd. Flow (perm)	608	1650		368	1667		887	1618		914	1389	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	582	161	73	530	43	188	99	115	83	83	102
RTOR Reduction (vph)	0	10	0	0	3	0	0	43	0	0	46	0
Lane Group Flow (vph)	92	733	0	73	570	0	188	171	0	83	140	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Effective Green, g (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.30	0.30		0.30	0.30	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	332	902		201	911		266	485		274	416	
v/s Ratio Prot		c0.44			0.34			0.11			0.10	
v/s Ratio Perm	0.15			0.20			c0.21			0.09		
v/c Ratio	0.28	0.81		0.36	0.63		0.71	0.35		0.30	0.34	
Uniform Delay, d1	10.9	16.6		11.5	14.1		28.0	24.7		24.3	24.5	
Progression Factor	1.00	1.00		0.79	0.72		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	7.9		4.4	2.8		14.7	2.0		2.8	2.2	
Delay (s)	13.0	24.6		13.5	13.0		42.7	26.7		27.1	26.7	
Level of Service	B	C		B	B		D	C		C	C	
Approach Delay (s/veh)		23.3			13.1			34.2			26.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	323	44	393	41	27	6	338	527	32	4	297	168
Future Volume (vph)	323	44	393	41	27	6	338	527	32	4	297	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97						1.00		1.00		
Frt		0.865			0.971			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1485	0	1675	1824	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.734			0.258			0.387			0.435		
Satd. Flow (perm)	1257	1485	0	455	1824	0	627	1842	0	789	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		427			7			5				183
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	351	48	427	45	29	7	367	573	35	4	323	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	351	475	0	45	36	0	367	608	0	4	323	183
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	36.0	36.0		36.0	36.0		17.0	49.0		32.0	32.0	32.0
Total Split (%)	40.0%	40.0%		40.0%	40.0%		18.9%	54.4%		35.6%	35.6%	35.6%
Maximum Green (s)	29.6	29.6		29.6	29.6		14.0	42.6		25.6	25.6	25.6
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	31.0	31.0		31.0	31.0		49.6	46.2		28.7	28.7	28.7
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.55	0.51		0.32	0.32	0.32
v/c Ratio	0.81	0.60		0.29	0.06		0.75	0.64		0.02	0.55	0.32
Control Delay (s/veh)	32.9	4.8		25.4	15.4		25.0	20.8		23.5	31.0	5.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	32.9	4.8		25.4	15.4		25.0	20.8		23.5	31.0	5.7
LOS	C	A		C	B		C	C		C	C	A
Approach Delay (s/veh)		16.7			20.9			22.4			21.9	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 20.3		Intersection LOS: C	
Intersection Capacity Utilization 96.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

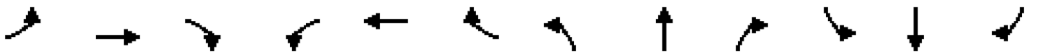
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	351	475	45	36	367	608	4	323	183
v/c Ratio	0.81	0.60	0.29	0.06	0.75	0.64	0.02	0.55	0.32
Control Delay (s/veh)	32.9	4.8	25.4	15.4	25.0	20.8	23.5	31.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	4.8	25.4	15.4	25.0	20.8	23.5	31.0	5.7
Queue Length 50th (m)	36.5	2.0	5.3	3.1	38.1	77.5	0.5	48.3	0.0
Queue Length 95th (m)	m63.8	m13.9	14.1	8.8	#72.4	117.3	2.9	75.4	14.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	453	808	163	662	495	947	251	586	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.59	0.28	0.05	0.74	0.64	0.02	0.55	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	323	44	393	41	27	6	338	527	32	4	297	168
Future Volume (vph)	323	44	393	41	27	6	338	527	32	4	297	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1486		1669	1824		1540	1843		1723	1842	1403
Flt Permitted	0.73	1.00		0.26	1.00		0.39	1.00		0.43	1.00	1.00
Satd. Flow (perm)	1257	1486		453	1824		627	1843		788	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	48	427	45	29	7	367	573	35	4	323	183
RTOR Reduction (vph)	0	280	0	0	5	0	0	2	0	0	0	125
Lane Group Flow (vph)	351	195	0	45	31	0	367	606	0	4	323	58
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	31.0	31.0		31.0	31.0		46.2	46.2		28.7	28.7	28.7
Effective Green, g (s)	31.0	31.0		31.0	31.0		46.2	46.2		28.7	28.7	28.7
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.51	0.51		0.32	0.32	0.32
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	432	511		156	628		468	946		251	587	447
v/s Ratio Prot		0.13			0.02		c0.13	0.33			0.18	
v/s Ratio Perm	c0.28			0.10			c0.28			0.01		0.04
v/c Ratio	0.81	0.38		0.29	0.05		0.78	0.64		0.02	0.55	0.13
Uniform Delay, d1	26.9	22.3		21.5	19.7		14.9	15.9		21.0	25.3	21.8
Progression Factor	0.78	0.69		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.5	0.4		1.0	0.0		8.4	3.3		0.1	3.7	0.6
Delay (s)	29.5	15.6		22.5	19.7		23.3	19.2		21.1	29.0	22.4
Level of Service	C	B		C	B		C	B		C	C	C
Approach Delay (s/veh)		21.5			21.3			20.7			26.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	676	32	36	611	76	99
Future Volume (vph)	676	32	36	611	76	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994					0.850
Flt Protected				0.997	0.950	
Satd. Flow (prot)	1872	0	0	1878	1750	1566
Flt Permitted				0.997	0.950	
Satd. Flow (perm)	1872	0	0	1878	1750	1566
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	735	35	39	664	83	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	770	0	0	703	83	108
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	676	32	36	611	76	99
Future Volume (Veh/h)	676	32	36	611	76	99
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	735	35	39	664	83	108
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			770		1495	753
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			770		1495	753
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		36	74
cM capacity (veh/h)			844		129	410

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	770	703	83	108
Volume Left	0	39	83	0
Volume Right	35	0	0	108
cSH	1700	844	129	410
Volume to Capacity	0.45	0.05	0.64	0.26
Queue Length 95th (m)	0.0	1.1	25.8	7.9
Control Delay (s/veh)	0.0	1.2	73.0	16.9
Lane LOS		A	F	C
Approach Delay (s/veh)	0.0	1.2	41.3	
Approach LOS			E	

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	641	134	68	611	36	48
Future Volume (vph)	641	134	68	611	36	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.923	
Flt Protected				0.995	0.979	
Satd. Flow (prot)	1840	0	0	1874	1665	0
Flt Permitted				0.995	0.979	
Satd. Flow (perm)	1840	0	0	1874	1665	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	697	146	74	664	39	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	843	0	0	738	91	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 92.7%		ICU Level of Service F	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	641	134	68	611	36	48
Future Volume (Veh/h)	641	134	68	611	36	48
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	697	146	74	664	39	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				249		
pX, platoon unblocked					0.82	
vC, conflicting volume			843		1582	770
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			843		1600	770
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		55	87
cM capacity (veh/h)			793		86	401

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	843	738	91
Volume Left	0	74	39
Volume Right	146	0	52
cSH	1700	793	157
Volume to Capacity	0.50	0.09	0.58
Queue Length 95th (m)	0.0	2.3	23.1
Control Delay (s/veh)	0.0	2.4	55.8
Lane LOS		A	F
Approach Delay (s/veh)	0.0	2.4	55.8
Approach LOS			F

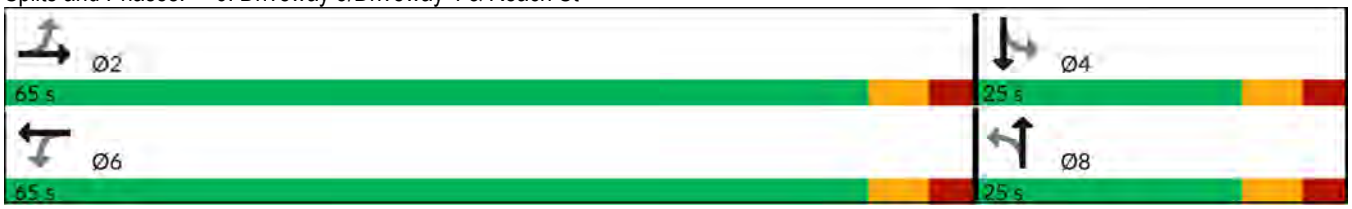
Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	615	58	159	577	19	86	0	110	19	0	16
Future Volume (vph)	16	615	58	159	577	19	86	0	110	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	121.0		0.0	171.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	70.0			70.0			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.995			0.924			0.940	
Flt Protected	0.950			0.950				0.979			0.973	
Satd. Flow (prot)	1789	1859	0	1789	1874	0	0	1666	0	0	1685	0
Flt Permitted	0.358			0.310				0.841			0.704	
Satd. Flow (perm)	674	1859	0	584	1874	0	0	1431	0	0	1219	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			4			65			48	
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	668	63	173	627	21	93	0	120	21	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	731	0	173	648	0	0	213	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	58.0	58.0		58.0	58.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	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	
Act Effct Green (s)	59.4	59.4		59.4	59.4			13.7			13.7	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.16	
v/c Ratio	0.04	0.58		0.43	0.51			0.76			0.16	
Control Delay (s/veh)	5.9	10.1		11.5	9.1			41.6			8.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	5.9	10.1		11.5	9.1			41.6			8.9	
LOS	A	B		B	A			D			A	
Approach Delay (s/veh)		10.0			9.6			41.6			8.9	
Approach LOS		B			A			D			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 87.1			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 13.5		Intersection LOS: B	
Intersection Capacity Utilization 75.4%		ICU Level of Service D	
Analysis Period (min) 15			

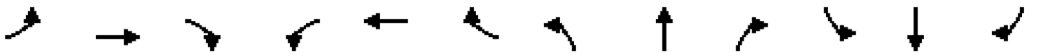
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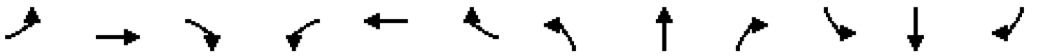
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	17	731	173	648	213	38
v/c Ratio	0.04	0.58	0.43	0.51	0.76	0.16
Control Delay (s/veh)	5.9	10.1	11.5	9.1	41.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.9	10.1	11.5	9.1	41.6	8.9
Queue Length 50th (m)	0.8	56.1	11.7	46.8	23.3	0.0
Queue Length 95th (m)	3.2	96.7	29.4	80.0	46.7	6.4
Internal Link Dist (m)		225.1		802.4	292.3	284.1
Turn Bay Length (m)	121.0		171.0			
Base Capacity (vph)	459	1270	398	1278	347	290
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.58	0.43	0.51	0.61	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	615	58	159	577	19	86	0	110	19	0	16
Future Volume (vph)	16	615	58	159	577	19	86	0	110	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.92			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1789	1859		1789	1874			1666			1684	
Flt Permitted	0.36	1.00		0.31	1.00			0.84			0.70	
Satd. Flow (perm)	675	1859		583	1874			1432			1219	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	668	63	173	627	21	93	0	120	21	0	17
RTOR Reduction (vph)	0	3	0	0	1	0	0	55	0	0	32	0
Lane Group Flow (vph)	17	728	0	173	647	0	0	158	0	0	6	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	59.4	59.4		59.4	59.4			13.7			13.7	
Effective Green, g (s)	59.4	59.4		59.4	59.4			13.7			13.7	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.16	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	460	1267		397	1278			225			191	
v/s Ratio Prot		c0.39			0.35							
v/s Ratio Perm	0.03			0.30				c0.11			0.00	
v/c Ratio	0.04	0.57		0.44	0.51			0.70			0.03	
Uniform Delay, d1	4.5	7.2		6.3	6.7			34.8			31.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	1.9		3.5	1.4			9.6			0.1	
Delay (s)	4.7	9.1		9.7	8.2			44.3			31.1	
Level of Service	A	A		A	A			D			C	
Approach Delay (s/veh)		9.0			8.5			44.3			31.1	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	168	92	216	171	140	92	222	159	172	258	1
Future Volume (vph)	1	168	92	216	171	140	92	222	159	172	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.947			0.933				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1680	0	1526	1602	0	1597	1606	1390	1643	1579	772
Flt Permitted	0.514			0.586			0.588			0.609		
Satd. Flow (perm)	966	1680	0	941	1602	0	988	1606	1390	1053	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			58				173			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	183	100	235	186	152	100	241	173	187	280	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	283	0	235	338	0	100	241	173	187	280	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	21.6	21.6		21.6	21.6		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.41	0.41	0.41	0.41	0.41	0.41
v/c Ratio	0.00	0.47		0.72	0.57		0.25	0.37	0.26	0.44	0.44	0.00
Control Delay (s/veh)	12.0	15.6		30.8	17.1		17.0	17.0	4.1	19.8	18.1	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.0	15.6		30.8	17.1		17.0	17.0	4.1	19.8	18.1	0.0
LOS	B	B		C	B		B	B	A	B	B	A
Approach Delay (s/veh)		15.6			22.7			12.7			18.7	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 62.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 17.8		Intersection LOS: B	
Intersection Capacity Utilization 94.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St

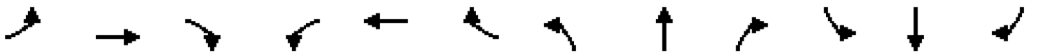


1: Highway 7/Highway 12 & Reach St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	283	235	338	100	241	173	187	280	1
v/c Ratio	0.00	0.47	0.72	0.57	0.25	0.37	0.26	0.44	0.44	0.00
Control Delay (s/veh)	12.0	15.6	30.8	17.1	17.0	17.0	4.1	19.8	18.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.0	15.6	30.8	17.1	17.0	17.0	4.1	19.8	18.1	0.0
Queue Length 50th (m)	0.1	20.7	22.7	24.8	7.6	19.4	0.0	15.5	23.2	0.0
Queue Length 95th (m)	0.9	37.9	45.0	45.4	20.3	41.7	11.1	37.0	48.9	0.0
Internal Link Dist (m)		1041.3		1546.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	469	837	457	808	560	911	863	597	895	465
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.34	0.51	0.42	0.18	0.26	0.20	0.31	0.31	0.00

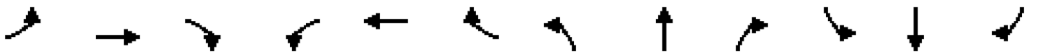
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	168	92	216	171	140	92	222	159	172	258	1
Future Volume (vph)	1	168	92	216	171	140	92	222	159	172	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1680		1526	1601		1597	1606	1390	1643	1579	772
Flt Permitted	0.51	1.00		0.59	1.00		0.59	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	965	1680		941	1601		988	1606	1390	1053	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	183	100	235	186	152	100	241	173	187	280	1
RTOR Reduction (vph)	0	25	0	0	38	0	0	0	103	0	0	1
Lane Group Flow (vph)	1	258	0	235	300	0	100	241	70	187	280	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	21.6	21.6		21.6	21.6		25.3	25.3	25.3	25.3	25.3	25.3
Effective Green, g (s)	21.6	21.6		21.6	21.6		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.41	0.41	0.41	0.41	0.41	0.41
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	335	583		326	555		401	653	565	428	642	314
v/s Ratio Prot		0.15			0.19			0.15			0.18	
v/s Ratio Perm	0.00			c0.25			0.10		0.05	c0.18		0.00
v/c Ratio	0.00	0.44		0.72	0.54		0.25	0.37	0.12	0.44	0.44	0.00
Uniform Delay, d1	13.3	15.7		17.7	16.3		12.2	12.9	11.5	13.3	13.3	11.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.5		7.6	1.1		0.1	0.1	0.0	0.3	0.2	0.0
Delay (s)	13.3	16.2		25.3	17.4		12.3	13.0	11.6	13.6	13.5	11.0
Level of Service	B	B		C	B		B	B	B	B	B	B
Approach Delay (s/veh)		16.2			20.6			12.4			13.5	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	15.3
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



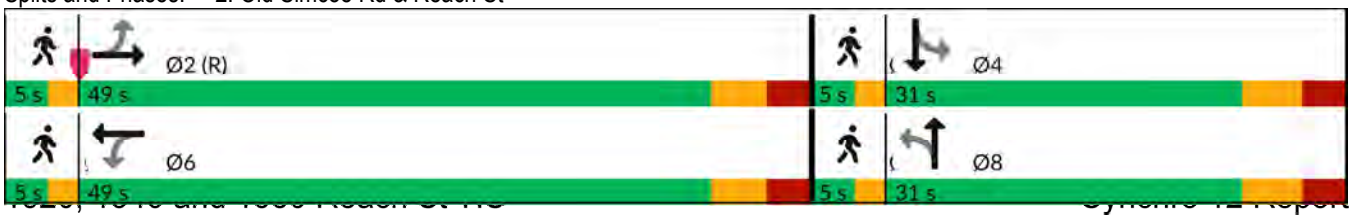
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	414	173	123	408	59	145	80	65	57	124	94
Future Volume (vph)	86	414	173	123	408	59	145	80	65	57	124	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.86	0.99		1.00	0.90	
Frt		0.956			0.981			0.933			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1547	0	1658	1697	0	1627	1667	0	1500	1497	0
Flt Permitted	0.375			0.273			0.562			0.657		
Satd. Flow (perm)	667	1547	0	477	1697	0	831	1667	0	1035	1497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			11			45			41	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	93	450	188	134	443	64	158	87	71	62	135	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	638	0	134	507	0	158	158	0	62	237	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	49.0	49.0		49.0	49.0		31.0	31.0		31.0	31.0	
Total Split (%)	54.4%	54.4%		54.4%	54.4%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	42.4	42.4		42.4	42.4		24.1	24.1		24.1	24.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.32	0.32		0.32	0.32	
v/c Ratio	0.26	0.77		0.53	0.56		0.59	0.28		0.19	0.46	
Control Delay (s/veh)	14.3	23.8		23.8	17.1		36.1	17.5		23.8	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.3	23.8		23.8	17.1		36.1	17.5		23.8	23.4	
LOS	B	C		C	B		D	B		C	C	
Approach Delay (s/veh)		22.6			18.5			26.8			23.5	
Approach LOS		C			B			C			C	

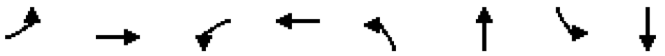
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 22.1		Intersection LOS: C	
Intersection Capacity Utilization 97.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary

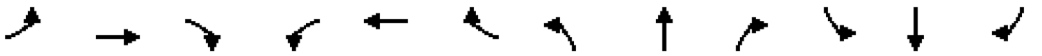


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	93	638	134	507	158	158	62	237
v/c Ratio	0.26	0.77	0.53	0.56	0.59	0.28	0.19	0.46
Control Delay (s/veh)	14.3	23.8	23.8	17.1	36.1	17.5	23.8	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.3	23.8	23.8	17.1	36.1	17.5	23.8	23.4
Queue Length 50th (m)	8.4	79.0	14.4	54.5	22.6	14.0	7.6	26.4
Queue Length 95th (m)	18.2	125.8	34.1	83.3	43.9	28.9	17.3	47.4
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	351	829	251	898	268	569	334	511
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.77	0.53	0.56	0.59	0.28	0.19	0.46

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	414	173	123	408	59	145	80	65	57	124	94
Future Volume (vph)	86	414	173	123	408	59	145	80	65	57	124	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.90	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.86	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.93		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1547		1658	1697		1400	1666		1497	1498	
Flt Permitted	0.38	1.00		0.27	1.00		0.56	1.00		0.66	1.00	
Satd. Flow (perm)	668	1547		476	1697		828	1666		1035	1498	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	450	188	134	443	64	158	87	71	62	135	102
RTOR Reduction (vph)	0	15	0	0	5	0	0	30	0	0	28	0
Lane Group Flow (vph)	93	623	0	134	502	0	158	128	0	62	209	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Effective Green, g (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.32	0.32		0.32	0.32	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	351	814		250	893		267	538		334	484	
v/s Ratio Prot		c0.40			0.30			0.08			0.14	
v/s Ratio Perm	0.14			0.28			c0.19			0.06		
v/c Ratio	0.26	0.77		0.54	0.56		0.59	0.24		0.19	0.43	
Uniform Delay, d1	11.7	16.9		14.0	14.3		25.5	22.3		21.9	24.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	6.8		8.0	2.6		9.3	1.0		1.2	2.8	
Delay (s)	13.6	23.7		22.1	16.9		34.8	23.4		23.1	26.8	
Level of Service	B	C		C	B		C	C		C	C	
Approach Delay (s/veh)		22.4			18.0			29.1			26.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



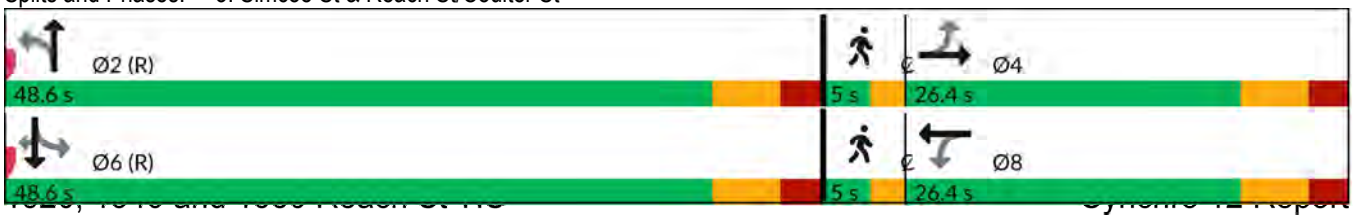
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	47	356	37	45	7	266	238	23	5	409	216
Future Volume (vph)	140	47	356	37	45	7	266	238	23	5	409	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.867			0.979			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1466	0	1675	1790	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.720			0.244			0.473			0.586		
Satd. Flow (perm)	1190	1466	0	427	1790	0	764	1754	0	1059	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		387			8			9				235
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	152	51	387	40	49	8	289	259	25	5	445	235
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	438	0	40	57	0	289	284	0	5	445	235
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	16.4	16.4		16.4	16.4		50.8	50.8		50.8	50.8	50.8
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.64	0.64		0.64	0.64	0.64
v/c Ratio	0.63	0.72		0.46	0.15		0.60	0.25		0.01	0.39	0.24
Control Delay (s/veh)	39.0	11.8		42.5	21.4		17.8	8.1		8.0	9.6	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.0	11.8		42.5	21.4		17.8	8.1		8.0	9.6	2.0
LOS	D	B		D	C		B	A		A	A	A
Approach Delay (s/veh)		18.8			30.1			13.0			7.0	
Approach LOS		B			C			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 13.5		Intersection LOS: B	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

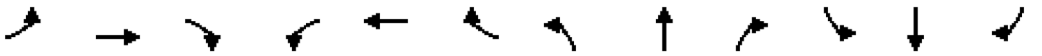
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	152	438	40	57	289	284	5	445	235
v/c Ratio	0.63	0.72	0.46	0.15	0.60	0.25	0.01	0.39	0.24
Control Delay (s/veh)	39.0	11.8	42.5	21.4	17.8	8.1	8.0	9.6	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.0	11.8	42.5	21.4	17.8	8.1	8.0	9.6	2.0
Queue Length 50th (m)	21.3	6.5	5.4	6.2	22.6	15.9	0.3	28.7	0.0
Queue Length 95th (m)	34.3	29.5	13.4	13.1	#73.1	36.5	1.9	61.9	9.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	312	670	111	475	485	1116	672	1147	977
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.65	0.36	0.12	0.60	0.25	0.01	0.39	0.24

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	47	356	37	45	7	266	238	23	5	409	216
Future Volume (vph)	140	47	356	37	45	7	266	238	23	5	409	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1571	1467		1664	1789		1535	1754		1717	1807	1404
Flt Permitted	0.72	1.00		0.24	1.00		0.47	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1190	1467		427	1789		765	1754		1058	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	51	387	40	49	8	289	259	25	5	445	235
RTOR Reduction (vph)	0	308	0	0	6	0	0	3	0	0	0	86
Lane Group Flow (vph)	152	130	0	40	51	0	289	281	0	5	445	149
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.4	16.4		16.4	16.4		50.8	50.8		50.8	50.8	50.8
Effective Green, g (s)	16.4	16.4		16.4	16.4		50.8	50.8		50.8	50.8	50.8
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.64	0.64		0.64	0.64	0.64
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	243	300		87	366		485	1113		671	1147	891
v/s Ratio Prot		0.09			0.03			0.16			0.25	
v/s Ratio Perm	c0.13			0.09			c0.38			0.00		0.11
v/c Ratio	0.63	0.43		0.46	0.14		0.60	0.25		0.01	0.39	0.17
Uniform Delay, d1	29.0	27.8		27.9	26.0		8.6	6.3		5.4	7.1	6.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.0	1.0		3.8	0.2		5.3	0.5		0.0	1.0	0.4
Delay (s)	34.0	28.8		31.7	26.2		13.9	6.9		5.4	8.1	6.4
Level of Service	C	C		C	C		B	A		A	A	A
Approach Delay (s/veh)		30.1			28.5			10.4			7.5	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	445	54	82	600	15	26
Future Volume (vph)	445	54	82	600	15	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	1855	0	0	1872	1750	1566
Flt Permitted				0.994	0.950	
Satd. Flow (perm)	1855	0	0	1872	1750	1566
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	484	59	89	652	16	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	543	0	0	741	16	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	445	54	82	600	15	26
Future Volume (Veh/h)	445	54	82	600	15	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	484	59	89	652	16	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			543		1344	514
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			543		1344	514
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1026		153	561

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	543	741	16	28
Volume Left	0	89	16	0
Volume Right	59	0	0	28
cSH	1700	1026	153	561
Volume to Capacity	0.32	0.09	0.10	0.05
Queue Length 95th (m)	0.0	2.2	2.6	1.2
Control Delay (s/veh)	0.0	2.2	31.3	11.8
Lane LOS		A	D	B
Approach Delay (s/veh)	0.0	2.2	18.9	
Approach LOS			C	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	422	49	34	633	49	77
Future Volume (vph)	422	49	34	633	49	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986				0.917	
Flt Protected				0.997	0.981	
Satd. Flow (prot)	1857	0	0	1878	1657	0
Flt Permitted				0.997	0.981	
Satd. Flow (perm)	1857	0	0	1878	1657	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	459	53	37	688	53	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	512	0	0	725	137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.2%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	422	49	34	633	49	77
Future Volume (Veh/h)	422	49	34	633	49	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	459	53	37	688	53	84
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				243		
pX, platoon unblocked					0.79	
vC, conflicting volume			512		1248	486
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			512		1178	486
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		67	86
cM capacity (veh/h)			1053		160	582

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	512	725	137
Volume Left	0	37	53
Volume Right	53	0	84
cSH	1700	1053	288
Volume to Capacity	0.30	0.04	0.48
Queue Length 95th (m)	0.0	0.8	18.4
Control Delay (s/veh)	0.0	0.9	28.4
Lane LOS		A	D
Approach Delay (s/veh)	0.0	0.9	28.4
Approach LOS			D

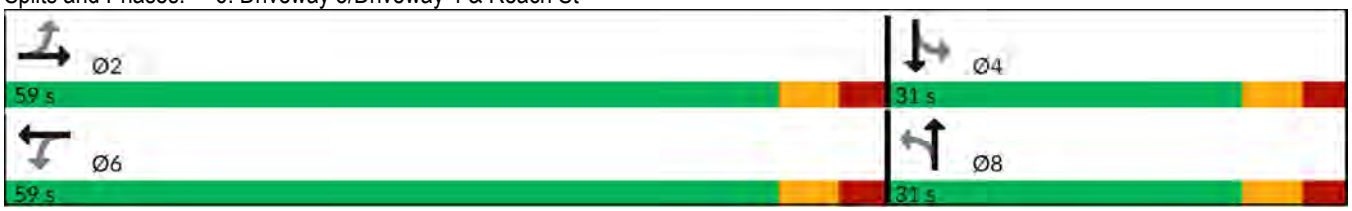
Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	449	22	78	526	43	113	0	180	43	0	28
Future Volume (vph)	28	449	22	78	526	43	113	0	180	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	121.0		0.0	171.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	70.0			70.0			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.989			0.917			0.947	
Flt Protected	0.950			0.950				0.981			0.970	
Satd. Flow (prot)	1789	1870	0	1789	1863	0	0	1657	0	0	1692	0
Flt Permitted	0.323			0.401				0.840			0.652	
Satd. Flow (perm)	608	1870	0	755	1863	0	0	1419	0	0	1137	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			8			87			48	
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	488	24	85	572	47	123	0	196	47	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	512	0	85	619	0	0	319	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	59.0	59.0		59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%		65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	52.0	52.0		52.0	52.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	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	
Act Effct Green (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.27			0.27	
v/c Ratio	0.09	0.47		0.19	0.57			0.72			0.23	
Control Delay (s/veh)	9.3	12.7		10.5	14.5			32.3			14.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	9.3	12.7		10.5	14.5			32.3			14.2	
LOS	A	B		B	B			C			B	
Approach Delay (s/veh)		12.5			14.0			32.3			14.2	
Approach LOS		B			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 17.1		Intersection LOS: B	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Driveway 3/Driveway 4 & Reach St



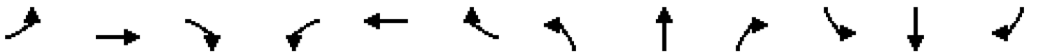
6: Driveway 3/Driveway 4 & Reach St



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	30	512	85	619	319	77
v/c Ratio	0.09	0.47	0.19	0.57	0.72	0.23
Control Delay (s/veh)	9.3	12.7	10.5	14.5	32.3	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.3	12.7	10.5	14.5	32.3	14.2
Queue Length 50th (m)	2.1	47.1	6.5	61.8	36.5	3.8
Queue Length 95th (m)	6.0	70.3	14.1	91.7	#73.0	14.3
Internal Link Dist (m)		219.0		807.2	311.1	297.9
Turn Bay Length (m)	121.0		171.0			
Base Capacity (vph)	351	1082	436	1079	442	338
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.47	0.19	0.57	0.72	0.23

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	449	22	78	526	43	113	0	180	43	0	28
Future Volume (vph)	28	449	22	78	526	43	113	0	180	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.92			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1789	1870		1789	1862			1657			1693	
Flt Permitted	0.32	1.00		0.40	1.00			0.84			0.65	
Satd. Flow (perm)	609	1870		755	1862			1419			1137	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	488	24	85	572	47	123	0	196	47	0	30
RTOR Reduction (vph)	0	2	0	0	3	0	0	64	0	0	35	0
Lane Group Flow (vph)	30	510	0	85	616	0	0	255	0	0	42	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Effective Green, g (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.27			0.27	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	351	1080		436	1075			378			303	
v/s Ratio Prot		0.27			c0.33							
v/s Ratio Perm	0.05			0.11				c0.18			0.04	
v/c Ratio	0.09	0.47		0.19	0.57			0.68			0.14	
Uniform Delay, d1	8.4	11.0		9.0	12.0			29.5			25.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	1.5		1.0	2.2			9.3			0.9	
Delay (s)	8.9	12.5		10.0	14.2			38.8			26.1	
Level of Service	A	B		B	B			D			C	
Approach Delay (s/veh)		12.3			13.7			38.8			26.1	
Approach LOS		B			B			D			C	

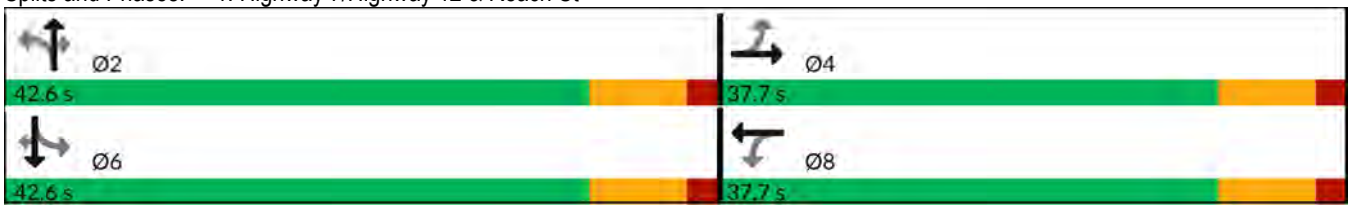
Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	242	127	222	223	224	75	558	330	160	313	2
Future Volume (vph)	11	242	127	222	223	224	75	558	330	160	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948			0.925				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	1770	0	1700	1663	0	1708	1807	1366	1568	1740	1543
Flt Permitted	0.298			0.399			0.517			0.256		
Satd. Flow (perm)	509	1770	0	714	1663	0	929	1807	1366	423	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			72				359			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	263	138	241	242	243	82	607	359	174	340	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	401	0	241	485	0	82	607	359	174	340	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	28.1	28.1		28.1	28.1		35.1	35.1	35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.07	0.61		0.95	0.76		0.20	0.75	0.44	0.92	0.44	0.00
Control Delay (s/veh)	17.5	23.1		72.2	27.4		15.7	26.1	3.7	74.7	17.7	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.5	23.1		72.2	27.4		15.7	26.1	3.7	74.7	17.7	0.0
LOS	B	C		E	C		B	C	A	E	B	A
Approach Delay (s/veh)		22.9			42.3			17.6			36.9	
Approach LOS		C			D			B			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 78.5			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 28.7		Intersection LOS: C	
Intersection Capacity Utilization 111.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St

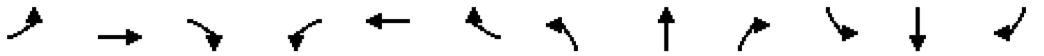




Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	12	401	241	485	82	607	359	174	340	2
v/c Ratio	0.07	0.61	0.95	0.76	0.20	0.75	0.44	0.92	0.44	0.00
Control Delay (s/veh)	17.5	23.1	72.2	27.4	15.7	26.1	3.7	74.7	17.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.5	23.1	72.2	27.4	15.7	26.1	3.7	74.7	17.7	0.0
Queue Length 50th (m)	1.2	43.3	34.1	53.3	7.5	75.9	0.0	24.6	35.2	0.0
Queue Length 95th (m)	4.6	70.7	#76.6	88.5	16.5	#117.4	14.2	#62.8	56.5	0.0
Internal Link Dist (m)		1041.3		1564.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	195	702	273	681	415	807	808	189	778	725
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.57	0.88	0.71	0.20	0.75	0.44	0.92	0.44	0.00

Intersection Summary

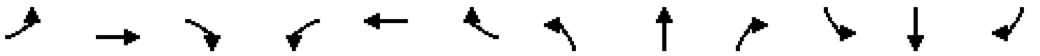
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	242	127	222	223	224	75	558	330	160	313	2
Future Volume (vph)	11	242	127	222	223	224	75	558	330	160	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.95		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1623	1770		1700	1663		1708	1807	1366	1568	1740	1543
Flt Permitted	0.30	1.00		0.40	1.00		0.52	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	508	1770		714	1663		929	1807	1366	423	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	263	138	241	242	243	82	607	359	174	340	2
RTOR Reduction (vph)	0	24	0	0	46	0	0	0	198	0	0	1
Lane Group Flow (vph)	12	377	0	241	439	0	82	607	161	174	340	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	28.0	28.0		28.0	28.0		35.1	35.1	35.1	35.1	35.1	35.1
Effective Green, g (s)	28.0	28.0		28.0	28.0		35.1	35.1	35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.45	0.45	0.45	0.45	0.45	0.45
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	181	632		255	593		415	809	611	189	779	690
v/s Ratio Prot		0.21			0.26			0.34			0.20	
v/s Ratio Perm	0.02			c0.34			0.09		0.12	c0.41		0.00
v/c Ratio	0.07	0.60		0.95	0.74		0.20	0.75	0.26	0.92	0.44	0.00
Uniform Delay, d1	16.6	20.6		24.5	22.0		13.1	18.0	13.6	20.3	14.9	12.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.5		41.2	4.8		0.1	3.5	0.1	42.9	0.1	0.0
Delay (s)	16.7	22.1		65.6	26.8		13.2	21.5	13.6	63.3	15.0	12.0
Level of Service	B	C		E	C		B	C	B	E	B	B
Approach Delay (s/veh)		21.9			39.7			18.2			31.3	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	15.3
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



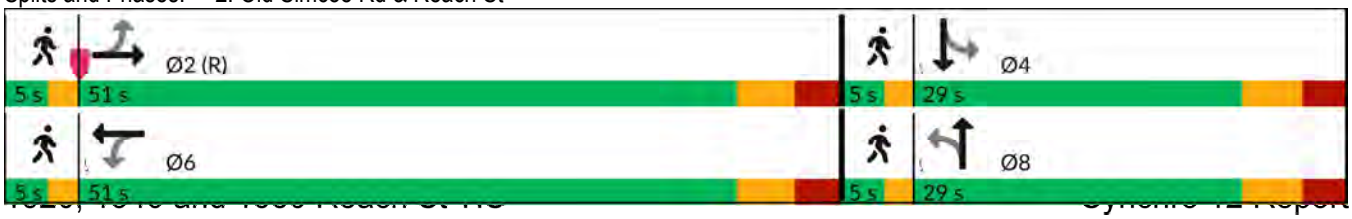
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	551	154	71	503	42	179	96	112	80	80	97
Future Volume (vph)	88	551	154	71	503	42	179	96	112	80	80	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			1.00		0.81	0.98		0.98	0.85	
Frt		0.967			0.988			0.919			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1649	0	1643	1666	0	1658	1617	0	1500	1392	0
Flt Permitted	0.322			0.197			0.624			0.571		
Satd. Flow (perm)	582	1649	0	341	1666	0	877	1617	0	886	1392	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			7			62			64	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	96	599	167	77	547	46	195	104	122	87	87	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	766	0	77	593	0	195	226	0	87	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	44.2	44.2		44.2	44.2		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.30	0.30		0.30	0.30	
v/c Ratio	0.30	0.84		0.41	0.65		0.74	0.43		0.33	0.42	
Control Delay (s/veh)	14.4	27.1		16.3	13.7		47.6	21.0		28.8	19.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.4	27.1		16.3	13.7		47.6	21.0		28.8	19.7	
LOS	B	C		B	B		D	C		C	B	
Approach Delay (s/veh)		25.7			14.0			33.3			22.5	
Approach LOS		C			B			C			C	

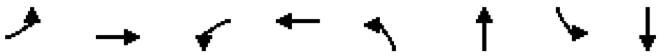
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 23.2		Intersection LOS: C	
Intersection Capacity Utilization 106.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



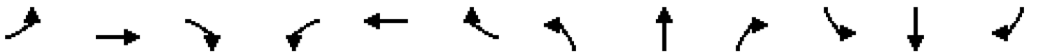
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	766	77	593	195	226	87	192
v/c Ratio	0.30	0.84	0.41	0.65	0.74	0.43	0.33	0.42
Control Delay (s/veh)	14.4	27.1	16.3	13.7	47.6	21.0	28.8	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.4	27.1	16.3	13.7	47.6	21.0	28.8	19.7
Queue Length 50th (m)	8.5	101.7	5.1	40.3	30.2	22.0	11.6	17.0
Queue Length 95th (m)	18.8	#177.7	m8.3	m54.1	#63.4	42.1	24.6	35.6
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	318	911	186	913	263	528	265	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.84	0.41	0.65	0.74	0.43	0.33	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	551	154	71	503	42	179	96	112	80	80	97
Future Volume (vph)	88	551	154	71	503	42	179	96	112	80	80	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.85	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.80	1.00		0.98	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1649		1643	1667		1330	1617		1473	1392	
Flt Permitted	0.32	1.00		0.20	1.00		0.62	1.00		0.57	1.00	
Satd. Flow (perm)	581	1649		340	1667		875	1617		885	1392	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	599	167	77	547	46	195	104	122	87	87	105
RTOR Reduction (vph)	0	10	0	0	3	0	0	43	0	0	45	0
Lane Group Flow (vph)	96	756	0	77	590	0	195	183	0	87	147	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Effective Green, g (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.30	0.30		0.30	0.30	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	317	901		185	911		262	485		265	417	
v/s Ratio Prot		c0.46			0.35			0.11			0.11	
v/s Ratio Perm	0.17			0.23			c0.22			0.10		
v/c Ratio	0.30	0.84		0.42	0.65		0.74	0.38		0.33	0.35	
Uniform Delay, d1	11.1	17.1		12.0	14.3		28.4	24.9		24.5	24.7	
Progression Factor	1.00	1.00		0.77	0.72		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	9.2		5.7	3.0		17.4	2.2		3.3	2.3	
Delay (s)	13.5	26.3		14.9	13.4		45.8	27.1		27.7	27.0	
Level of Service	B	C		B	B		D	C		C	C	
Approach Delay (s/veh)		24.9			13.6			35.7			27.2	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	46	408	43	28	7	349	553	34	4	312	173
Future Volume (vph)	334	46	408	43	28	7	349	553	34	4	312	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97						1.00		1.00		
Frt		0.865			0.968			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1485	0	1675	1819	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.732			0.244			0.357			0.420		
Satd. Flow (perm)	1254	1485	0	430	1819	0	579	1842	0	762	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		443			8			5				188
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	363	50	443	47	30	8	379	601	37	4	339	188
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	493	0	47	38	0	379	638	0	4	339	188
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	36.0	36.0		36.0	36.0		17.0	49.0		32.0	32.0	32.0
Total Split (%)	40.0%	40.0%		40.0%	40.0%		18.9%	54.4%		35.6%	35.6%	35.6%
Maximum Green (s)	29.6	29.6		29.6	29.6		14.0	42.6		25.6	25.6	25.6
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	31.6	31.6		31.6	31.6		49.0	45.6		27.8	27.8	27.8
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.54	0.51		0.31	0.31	0.31
v/c Ratio	0.82	0.61		0.31	0.06		0.80	0.68		0.02	0.60	0.33
Control Delay (s/veh)	33.6	4.9		26.3	15.1		29.7	22.3		23.8	32.6	5.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	33.6	4.9		26.3	15.1		29.7	22.3		23.8	32.6	5.8
LOS	C	A		C	B		C	C		C	C	A
Approach Delay (s/veh)		17.0			21.3			25.0			23.0	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 21.7		Intersection LOS: C	
Intersection Capacity Utilization 99.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	363	493	47	38	379	638	4	339	188
v/c Ratio	0.82	0.61	0.31	0.06	0.80	0.68	0.02	0.60	0.33
Control Delay (s/veh)	33.6	4.9	26.3	15.1	29.7	22.3	23.8	32.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.6	4.9	26.3	15.1	29.7	22.3	23.8	32.6	5.8
Queue Length 50th (m)	37.9	3.2	5.5	3.2	40.4	84.7	0.5	51.3	0.0
Queue Length 95th (m)	m65.9	m13.0	14.7	9.2	#83.3	125.8	2.9	79.6	14.7
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	456	822	156	667	473	934	235	568	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.60	0.30	0.06	0.80	0.68	0.02	0.60	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	46	408	43	28	7	349	553	34	4	312	173
Future Volume (vph)	334	46	408	43	28	7	349	553	34	4	312	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1486		1675	1820		1540	1843		1723	1842	1403
Flt Permitted	0.73	1.00		0.24	1.00		0.36	1.00		0.42	1.00	1.00
Satd. Flow (perm)	1254	1486		431	1820		579	1843		762	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	363	50	443	47	30	8	379	601	37	4	339	188
RTOR Reduction (vph)	0	287	0	0	5	0	0	2	0	0	0	130
Lane Group Flow (vph)	363	206	0	47	33	0	379	636	0	4	339	58
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	31.6	31.6		31.6	31.6		45.6	45.6		27.8	27.8	27.8
Effective Green, g (s)	31.6	31.6		31.6	31.6		45.6	45.6		27.8	27.8	27.8
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.51	0.51		0.31	0.31	0.31
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	440	521		151	639		451	933		235	568	433
v/s Ratio Prot		0.14			0.02		c0.14	0.34			0.18	
v/s Ratio Perm	c0.29			0.11			c0.29			0.01		0.04
v/c Ratio	0.83	0.39		0.31	0.05		0.84	0.68		0.02	0.60	0.13
Uniform Delay, d1	26.7	22.0		21.3	19.3		15.7	16.7		21.6	26.4	22.4
Progression Factor	0.79	0.71		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.9	0.4		1.2	0.0		13.2	4.0		0.1	4.6	0.6
Delay (s)	30.0	15.9		22.5	19.3		28.9	20.7		21.7	30.9	23.1
Level of Service	C	B		C	B		C	C		C	C	C
Approach Delay (s/veh)		21.9			21.1			23.8			28.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	700	32	36	635	76	99
Future Volume (vph)	700	32	36	635	76	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994					0.850
Flt Protected				0.997	0.950	
Satd. Flow (prot)	1872	0	0	1878	1750	1566
Flt Permitted				0.997	0.950	
Satd. Flow (perm)	1872	0	0	1878	1750	1566
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	761	35	39	690	83	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	796	0	0	729	83	108
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	700	32	36	635	76	99
Future Volume (Veh/h)	700	32	36	635	76	99
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	761	35	39	690	83	108
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			796		1547	779
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			796		1547	779
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		31	73
cM capacity (veh/h)			826		120	396

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	796	729	83	108
Volume Left	0	39	83	0
Volume Right	35	0	0	108
cSH	1700	826	120	396
Volume to Capacity	0.47	0.05	0.69	0.27
Queue Length 95th (m)	0.0	1.1	28.4	8.3
Control Delay (s/veh)	0.0	1.2	84.7	17.5
Lane LOS		A	F	C
Approach Delay (s/veh)	0.0	1.2	46.7	
Approach LOS			E	

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	665	134	68	635	36	48
Future Volume (vph)	665	134	68	635	36	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.923	
Flt Protected				0.995	0.979	
Satd. Flow (prot)	1840	0	0	1874	1665	0
Flt Permitted				0.995	0.979	
Satd. Flow (perm)	1840	0	0	1874	1665	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	723	146	74	690	39	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	869	0	0	764	91	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 95.3%		ICU Level of Service F	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	665	134	68	635	36	48
Future Volume (Veh/h)	665	134	68	635	36	48
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	723	146	74	690	39	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				249		
pX, platoon unblocked					0.80	
vC, conflicting volume			869		1634	796
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			869		1667	796
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		49	87
cM capacity (veh/h)			775		77	387

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	869	764	91
Volume Left	0	74	39
Volume Right	146	0	52
cSH	1700	775	142
Volume to Capacity	0.51	0.10	0.64
Queue Length 95th (m)	0.0	2.4	26.3
Control Delay (s/veh)	0.0	2.5	67.0
Lane LOS		A	F
Approach Delay (s/veh)	0.0	2.5	67.0
Approach LOS			F

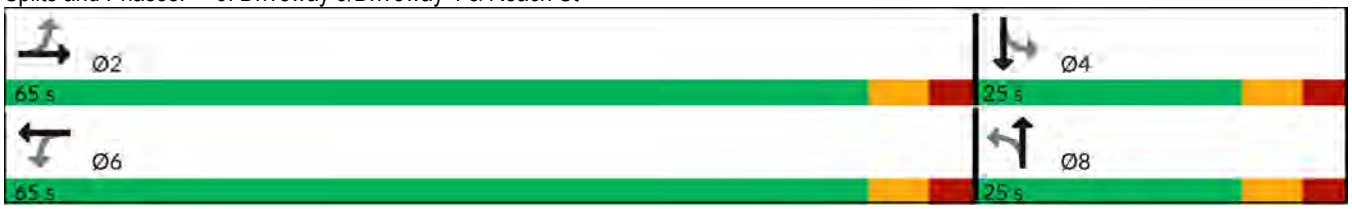
Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	639	58	159	601	19	86	0	110	19	0	16
Future Volume (vph)	16	639	58	159	601	19	86	0	110	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	121.0		0.0	171.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	70.0			70.0			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.995			0.924			0.940	
Flt Protected	0.950			0.950				0.979			0.973	
Satd. Flow (prot)	1789	1861	0	1789	1874	0	0	1666	0	0	1685	0
Flt Permitted	0.343			0.294				0.841			0.704	
Satd. Flow (perm)	646	1861	0	554	1874	0	0	1431	0	0	1219	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			4			65			48	
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	695	63	173	653	21	93	0	120	21	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	758	0	173	674	0	0	213	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	58.0	58.0		58.0	58.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	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	
Act Effct Green (s)	59.4	59.4		59.4	59.4			13.7			13.7	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.16	
v/c Ratio	0.04	0.60		0.46	0.53			0.76			0.16	
Control Delay (s/veh)	5.9	10.5		12.4	9.4			41.6			8.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	5.9	10.5		12.4	9.4			41.6			8.9	
LOS	A	B		B	A			D			A	
Approach Delay (s/veh)		10.4			10.0			41.6			8.9	
Approach LOS		B			B			D			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 87.1			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 13.7		Intersection LOS: B	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Driveway 3/Driveway 4 & Reach St



6: Driveway 3/Driveway 4 & Reach St



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	17	758	173	674	213	38
v/c Ratio	0.04	0.60	0.46	0.53	0.76	0.16
Control Delay (s/veh)	5.9	10.5	12.4	9.4	41.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.9	10.5	12.4	9.4	41.6	8.9
Queue Length 50th (m)	0.8	59.8	12.0	49.8	23.3	0.0
Queue Length 95th (m)	3.3	103.2	30.9	85.1	46.7	6.4
Internal Link Dist (m)		225.1		802.4	292.3	284.1
Turn Bay Length (m)	121.0		171.0			
Base Capacity (vph)	440	1271	377	1278	347	290
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.60	0.46	0.53	0.61	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	639	58	159	601	19	86	0	110	19	0	16
Future Volume (vph)	16	639	58	159	601	19	86	0	110	19	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.92			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1789	1860		1789	1875			1666			1684	
Flt Permitted	0.34	1.00		0.29	1.00			0.84			0.70	
Satd. Flow (perm)	646	1860		554	1875			1432			1219	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	695	63	173	653	21	93	0	120	21	0	17
RTOR Reduction (vph)	0	3	0	0	1	0	0	55	0	0	32	0
Lane Group Flow (vph)	17	755	0	173	673	0	0	158	0	0	6	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	59.4	59.4		59.4	59.4			13.7			13.7	
Effective Green, g (s)	59.4	59.4		59.4	59.4			13.7			13.7	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.16	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	440	1268		377	1278			225			191	
v/s Ratio Prot		c0.41			0.36							
v/s Ratio Perm	0.03			0.31				c0.11			0.00	
v/c Ratio	0.04	0.60		0.46	0.53			0.70			0.03	
Uniform Delay, d1	4.5	7.4		6.4	6.9			34.8			31.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	2.1		4.0	1.6			9.6			0.1	
Delay (s)	4.7	9.5		10.4	8.4			44.3			31.1	
Level of Service	A	A		B	A			D			C	
Approach Delay (s/veh)		9.4			8.8			44.3			31.1	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Appendix P

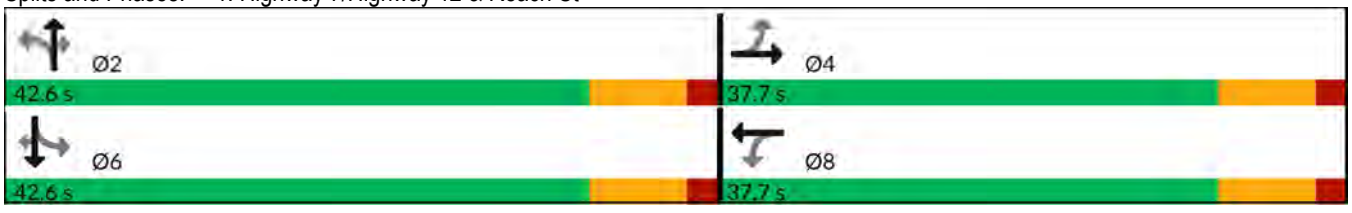
Total Traffic Operations Reports – Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	165	87	219	169	141	87	211	162	172	246	1
Future Volume (vph)	1	165	87	219	169	141	87	211	162	172	246	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1681	0	1526	1600	0	1597	1606	1390	1643	1579	772
Flt Permitted	0.515			0.591			0.595			0.616		
Satd. Flow (perm)	968	1681	0	949	1600	0	1000	1606	1390	1065	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			60				176			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	179	95	238	184	153	95	229	176	187	267	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	274	0	238	337	0	95	229	176	187	267	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	21.4	21.4		21.4	21.4		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.41	0.41	0.41	0.41	0.41	0.41
v/c Ratio	0.00	0.45		0.73	0.57		0.23	0.35	0.26	0.43	0.42	0.00
Control Delay (s/veh)	12.0	15.4		31.3	17.0		16.6	16.7	4.1	19.5	17.6	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.0	15.4		31.3	17.0		16.6	16.7	4.1	19.5	17.6	0.0
LOS	B	B		C	B		B	B	A	B	B	A
Approach Delay (s/veh)		15.4			22.9			12.2			18.3	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 62.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 17.7		Intersection LOS: B	
Intersection Capacity Utilization 94.7%		ICU Level of Service F	
Analysis Period (min) 15			

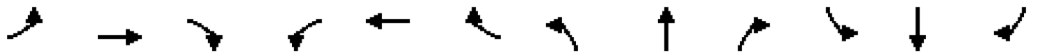
Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	274	238	337	95	229	176	187	267	1
v/c Ratio	0.00	0.45	0.73	0.57	0.23	0.35	0.26	0.43	0.42	0.00
Control Delay (s/veh)	12.0	15.4	31.3	17.0	16.6	16.7	4.1	19.5	17.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.0	15.4	31.3	17.0	16.6	16.7	4.1	19.5	17.6	0.0
Queue Length 50th (m)	0.1	19.9	23.0	24.5	7.1	18.0	0.0	15.3	21.7	0.0
Queue Length 95th (m)	0.9	36.5	45.5	45.0	19.3	39.4	11.2	36.8	46.4	0.0
Internal Link Dist (m)		1041.3		1546.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	472	839	463	811	569	914	866	606	898	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.33	0.51	0.42	0.17	0.25	0.20	0.31	0.30	0.00

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	165	87	219	169	141	87	211	162	172	246	1
Future Volume (vph)	1	165	87	219	169	141	87	211	162	172	246	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1681		1526	1600		1597	1606	1390	1643	1579	772
Flt Permitted	0.51	1.00		0.59	1.00		0.59	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	967	1681		949	1600		1000	1606	1390	1065	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	179	95	238	184	153	95	229	176	187	267	1
RTOR Reduction (vph)	0	25	0	0	39	0	0	0	104	0	0	1
Lane Group Flow (vph)	1	249	0	238	298	0	95	229	72	187	267	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	21.4	21.4		21.4	21.4		25.3	25.3	25.3	25.3	25.3	25.3
Effective Green, g (s)	21.4	21.4		21.4	21.4		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.41	0.41	0.41	0.41	0.41	0.41
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	333	580		327	552		408	655	567	434	644	315
v/s Ratio Prot		0.15			0.19			0.14			0.17	
v/s Ratio Perm	0.00			c0.25			0.10		0.05	c0.18		0.00
v/c Ratio	0.00	0.43		0.73	0.54		0.23	0.35	0.13	0.43	0.41	0.00
Uniform Delay, d1	13.3	15.6		17.8	16.3		12.0	12.7	11.5	13.2	13.1	10.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.5		7.9	1.0		0.1	0.1	0.0	0.3	0.2	0.0
Delay (s)	13.3	16.1		25.6	17.4		12.1	12.8	11.5	13.4	13.2	10.9
Level of Service	B	B		C	B		B	B	B	B	B	B
Approach Delay (s/veh)		16.1			20.8			12.2			13.3	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

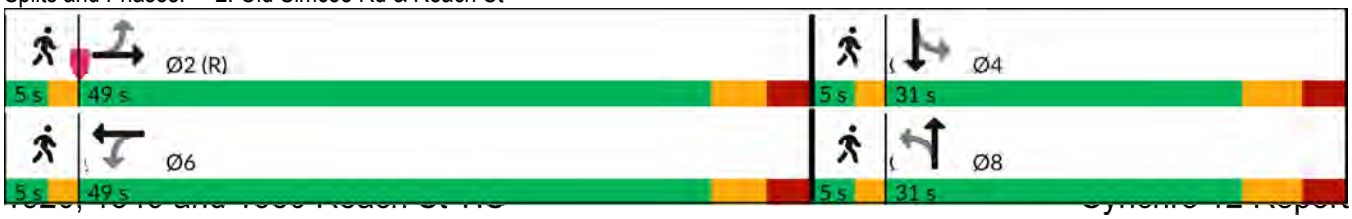
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	422	176	117	416	56	144	76	62	55	118	95
Future Volume (vph)	87	422	176	117	416	56	144	76	62	55	118	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.86	0.99		1.00	0.90	
Frt		0.956			0.982			0.933			0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1547	0	1658	1698	0	1627	1667	0	1500	1487	0
Flt Permitted	0.371			0.264			0.571			0.662		
Satd. Flow (perm)	660	1547	0	461	1698	0	842	1667	0	1043	1487	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			10			44			44	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	95	459	191	127	452	61	157	83	67	60	128	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	650	0	127	513	0	157	150	0	60	231	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	49.0	49.0		49.0	49.0		31.0	31.0		31.0	31.0	
Total Split (%)	54.4%	54.4%		54.4%	54.4%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	42.4	42.4		42.4	42.4		24.1	24.1		24.1	24.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.32	0.32		0.32	0.32	
v/c Ratio	0.27	0.78		0.52	0.57		0.58	0.26		0.18	0.45	
Control Delay (s/veh)	14.5	24.7		23.7	17.2		35.4	17.2		23.7	22.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.5	24.7		23.7	17.2		35.4	17.2		23.7	22.7	
LOS	B	C		C	B		D	B		C	C	
Approach Delay (s/veh)		23.4			18.5			26.5			22.9	
Approach LOS		C			B			C			C	

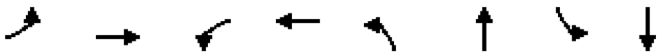
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 22.2		Intersection LOS: C	
Intersection Capacity Utilization 98.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary

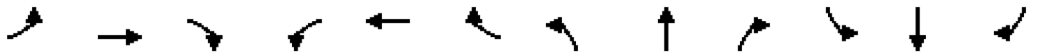


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	95	650	127	513	157	150	60	231
v/c Ratio	0.27	0.78	0.52	0.57	0.58	0.26	0.18	0.45
Control Delay (s/veh)	14.5	24.7	23.7	17.2	35.4	17.2	23.7	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	24.7	23.7	17.2	35.4	17.2	23.7	22.7
Queue Length 50th (m)	8.6	81.8	13.6	55.5	22.4	13.1	7.4	25.0
Queue Length 95th (m)	18.6	130.4	32.5	85.0	43.2	27.3	16.8	45.7
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	347	829	242	899	272	568	337	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.78	0.52	0.57	0.58	0.26	0.18	0.45

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	422	176	117	416	56	144	76	62	55	118	95
Future Volume (vph)	87	422	176	117	416	56	144	76	62	55	118	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.90	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.86	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.93		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1547		1658	1699		1396	1667		1497	1487	
Flt Permitted	0.37	1.00		0.26	1.00		0.57	1.00		0.66	1.00	
Satd. Flow (perm)	660	1547		461	1699		839	1667		1043	1487	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	459	191	127	452	61	157	83	67	60	128	103
RTOR Reduction (vph)	0	15	0	0	5	0	0	30	0	0	30	0
Lane Group Flow (vph)	95	635	0	127	508	0	157	120	0	60	201	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Effective Green, g (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.32	0.32		0.32	0.32	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	347	814		242	894		271	538		337	480	
v/s Ratio Prot		c0.41			0.30			0.07			0.14	
v/s Ratio Perm	0.14			0.28			c0.19			0.06		
v/c Ratio	0.27	0.78		0.52	0.57		0.58	0.22		0.18	0.42	
Uniform Delay, d1	11.8	17.1		13.9	14.4		25.4	22.2		21.9	23.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	7.3		7.9	2.6		8.7	1.0		1.2	2.7	
Delay (s)	13.7	24.4		21.9	17.0		34.1	23.2		23.0	26.5	
Level of Service	B	C		C	B		C	C		C	C	
Approach Delay (s/veh)		23.1			18.0			28.8			25.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



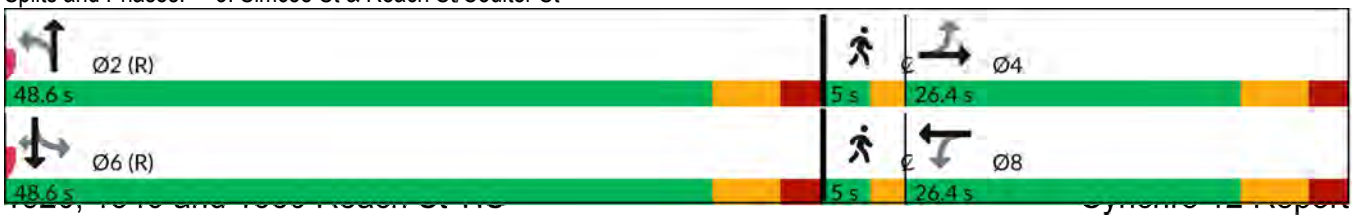
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	45	357	35	45	6	264	227	22	5	389	220
Future Volume (vph)	143	45	357	35	45	6	264	227	22	5	389	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.867			0.981			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1466	0	1675	1799	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.720			0.242			0.489			0.593		
Satd. Flow (perm)	1190	1466	0	424	1799	0	790	1754	0	1072	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		388			7			9				239
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	155	49	388	38	49	7	287	247	24	5	423	239
Shared Lane Traffic (%)												
Lane Group Flow (vph)	155	437	0	38	56	0	287	271	0	5	423	239
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	16.5	16.5		16.5	16.5		50.7	50.7		50.7	50.7	50.7
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.63	0.63		0.63	0.63	0.63
v/c Ratio	0.63	0.72		0.44	0.15		0.57	0.24		0.01	0.37	0.24
Control Delay (s/veh)	39.2	11.6		40.8	21.6		16.7	8.1		8.0	9.5	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.2	11.6		40.8	21.6		16.7	8.1		8.0	9.5	2.0
LOS	D	B		D	C		B	A		A	A	A
Approach Delay (s/veh)		18.8			29.3			12.5			6.8	
Approach LOS		B			C			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 13.3		Intersection LOS: B	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	155	437	38	56	287	271	5	423	239
v/c Ratio	0.63	0.72	0.44	0.15	0.57	0.24	0.01	0.37	0.24
Control Delay (s/veh)	39.2	11.6	40.8	21.6	16.7	8.1	8.0	9.5	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.2	11.6	40.8	21.6	16.7	8.1	8.0	9.5	2.0
Queue Length 50th (m)	21.7	6.2	5.1	6.1	22.1	15.1	0.3	27.1	0.0
Queue Length 95th (m)	35.0	29.1	12.7	13.1	#65.9	34.8	1.9	58.1	9.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	312	670	111	477	500	1114	678	1144	976
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.65	0.34	0.12	0.57	0.24	0.01	0.37	0.24

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	45	357	35	45	6	264	227	22	5	389	220
Future Volume (vph)	143	45	357	35	45	6	264	227	22	5	389	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1571	1465		1664	1799		1534	1754		1717	1807	1404
Flt Permitted	0.72	1.00		0.24	1.00		0.49	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1191	1465		425	1799		790	1754		1071	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	49	388	38	49	7	287	247	24	5	423	239
RTOR Reduction (vph)	0	308	0	0	6	0	0	3	0	0	0	88
Lane Group Flow (vph)	155	129	0	38	50	0	287	268	0	5	423	151
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.5	16.5		16.5	16.5		50.7	50.7		50.7	50.7	50.7
Effective Green, g (s)	16.5	16.5		16.5	16.5		50.7	50.7		50.7	50.7	50.7
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.63	0.63		0.63	0.63	0.63
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	245	302		87	371		500	1111		678	1145	889
v/s Ratio Prot		0.09			0.03			0.15			0.23	
v/s Ratio Perm	c0.13			0.09			c0.36			0.00		0.11
v/c Ratio	0.63	0.43		0.44	0.14		0.57	0.24		0.01	0.37	0.17
Uniform Delay, d1	29.0	27.6		27.7	25.9		8.4	6.3		5.4	7.0	6.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.2	1.0		3.5	0.2		4.7	0.5		0.0	0.9	0.4
Delay (s)	34.2	28.6		31.2	26.1		13.2	6.8		5.4	7.9	6.4
Level of Service	C	C		C	C		B	A		A	A	A
Approach Delay (s/veh)		30.1			28.2			10.1			7.4	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	445	54	82	596	15	26
Future Volume (vph)	445	54	82	596	15	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	1855	0	0	1872	1750	1566
Flt Permitted				0.994	0.950	
Satd. Flow (perm)	1855	0	0	1872	1750	1566
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	484	59	89	648	16	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	543	0	0	737	16	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.9%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	445	54	82	596	15	26
Future Volume (Veh/h)	445	54	82	596	15	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	484	59	89	648	16	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			543		1340	514
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			543		1340	514
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1026		154	561

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	543	737	16	28
Volume Left	0	89	16	0
Volume Right	59	0	0	28
cSH	1700	1026	154	561
Volume to Capacity	0.32	0.09	0.10	0.05
Queue Length 95th (m)	0.0	2.2	2.6	1.2
Control Delay (s/veh)	0.0	2.2	31.1	11.8
Lane LOS		A	D	B
Approach Delay (s/veh)	0.0	2.2	18.8	
Approach LOS			C	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	422	49	34	629	49	77
Future Volume (vph)	422	49	34	629	49	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986				0.917	
Flt Protected				0.997	0.981	
Satd. Flow (prot)	1857	0	0	1878	1657	0
Flt Permitted				0.997	0.981	
Satd. Flow (perm)	1857	0	0	1878	1657	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	459	53	37	684	53	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	512	0	0	721	137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	422	49	34	629	49	77
Future Volume (Veh/h)	422	49	34	629	49	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	459	53	37	684	53	84
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				243		
pX, platoon unblocked					0.79	
vC, conflicting volume			512		1244	486
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			512		1175	486
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		67	86
cM capacity (veh/h)			1053		161	582

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	512	721	137
Volume Left	0	37	53
Volume Right	53	0	84
cSH	1700	1053	289
Volume to Capacity	0.30	0.04	0.47
Queue Length 95th (m)	0.0	0.8	18.2
Control Delay (s/veh)	0.0	0.9	28.1
Lane LOS		A	D
Approach Delay (s/veh)	0.0	0.9	28.1
Approach LOS			D

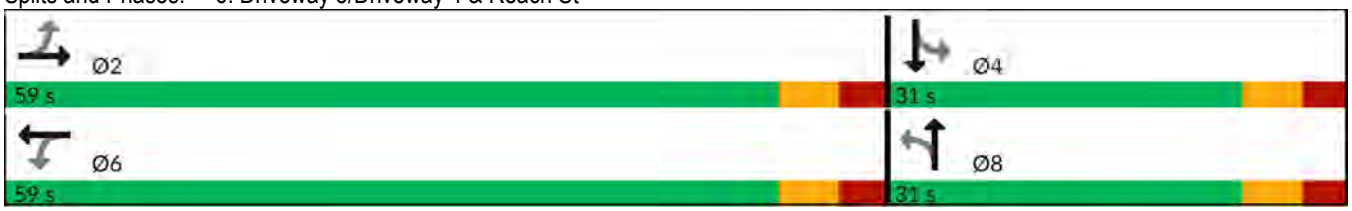
Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	431	22	78	506	71	113	0	180	73	0	44
Future Volume (vph)	46	431	22	78	506	71	113	0	180	73	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	121.0		0.0	171.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	70.0			70.0			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.982			0.917			0.949	
Flt Protected	0.950			0.950				0.981			0.970	
Satd. Flow (prot)	1789	1870	0	1789	1850	0	0	1657	0	0	1696	0
Flt Permitted	0.318			0.416				0.834			0.594	
Satd. Flow (perm)	599	1870	0	784	1850	0	0	1409	0	0	1038	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			13			87			48	
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	468	24	85	550	77	123	0	196	79	0	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	492	0	85	627	0	0	319	0	0	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	59.0	59.0		59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%		65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	52.0	52.0		52.0	52.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	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	
Act Effct Green (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.27			0.27	
v/c Ratio	0.14	0.45		0.19	0.58			0.73			0.41	
Control Delay (s/veh)	10.1	12.5		10.4	14.6			32.6			21.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	10.1	12.5		10.4	14.6			32.6			21.7	
LOS	B	B		B	B			C			C	
Approach Delay (s/veh)		12.2			14.1			32.6			21.7	
Approach LOS		B			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 17.5		Intersection LOS: B	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Driveway 3/Driveway 4 & Reach St





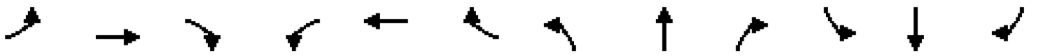
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	50	492	85	627	319	127
v/c Ratio	0.14	0.45	0.19	0.58	0.73	0.41
Control Delay (s/veh)	10.1	12.5	10.4	14.6	32.6	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.1	12.5	10.4	14.6	32.6	21.7
Queue Length 50th (m)	3.7	44.6	6.5	62.6	36.6	10.8
Queue Length 95th (m)	9.3	66.9	13.9	93.4	#73.5	26.9
Internal Link Dist (m)		219.0		807.2	311.1	297.9
Turn Bay Length (m)	121.0		171.0			
Base Capacity (vph)	346	1082	452	1074	439	312
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.45	0.19	0.58	0.73	0.41

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	431	22	78	506	71	113	0	180	73	0	44
Future Volume (vph)	46	431	22	78	506	71	113	0	180	73	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.92			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1789	1870		1789	1849			1657			1695	
Flt Permitted	0.32	1.00		0.42	1.00			0.83			0.59	
Satd. Flow (perm)	598	1870		783	1849			1410			1038	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	468	24	85	550	77	123	0	196	79	0	48
RTOR Reduction (vph)	0	2	0	0	5	0	0	64	0	0	35	0
Lane Group Flow (vph)	50	490	0	85	622	0	0	255	0	0	92	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Effective Green, g (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.27			0.27	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	345	1080		452	1068			376			276	
v/s Ratio Prot		0.26			c0.34							
v/s Ratio Perm	0.08			0.11				c0.18			0.09	
v/c Ratio	0.14	0.45		0.19	0.58			0.68			0.33	
Uniform Delay, d1	8.8	10.9		9.0	12.1			29.5			26.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	1.4		0.9	2.3			9.5			3.2	
Delay (s)	9.6	12.2		9.9	14.4			39.0			29.8	
Level of Service	A	B		A	B			D			C	
Approach Delay (s/veh)		12.0			13.9			39.0			29.8	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	235	121	217	216	222	71	531	324	157	297	2
Future Volume (vph)	11	235	121	217	216	222	71	531	324	157	297	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949			0.924				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	1771	0	1700	1661	0	1708	1807	1366	1568	1740	1543
Flt Permitted	0.314			0.424			0.540			0.282		
Satd. Flow (perm)	536	1771	0	759	1661	0	971	1807	1366	465	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			73				352			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	255	132	236	235	241	77	577	352	171	323	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	387	0	236	476	0	77	577	352	171	323	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	26.1	26.1		26.1	26.1		32.3	32.3	32.3	32.3	32.3	32.3
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.44	0.44	0.44	0.44	0.44	0.44
v/c Ratio	0.06	0.60		0.88	0.75		0.18	0.73	0.44	0.85	0.43	0.00
Control Delay (s/veh)	17.4	22.2		57.6	26.4		15.3	24.7	3.7	57.9	17.4	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.4	22.2		57.6	26.4		15.3	24.7	3.7	57.9	17.4	0.0
LOS	B	C		E	C		B	C	A	E	B	A
Approach Delay (s/veh)		22.0			36.7			16.7			31.3	
Approach LOS		C			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 74			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 25.7		Intersection LOS: C	
Intersection Capacity Utilization 109.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St



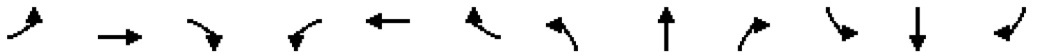
1: Highway 7/Highway 12 & Reach St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	12	387	236	476	77	577	352	171	323	2
v/c Ratio	0.06	0.60	0.88	0.75	0.18	0.73	0.44	0.85	0.43	0.00
Control Delay (s/veh)	17.4	22.2	57.6	26.4	15.3	24.7	3.7	57.9	17.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.4	22.2	57.6	26.4	15.3	24.7	3.7	57.9	17.4	0.0
Queue Length 50th (m)	1.2	41.3	32.0	51.6	7.0	70.4	0.0	22.5	33.0	0.0
Queue Length 95th (m)	4.6	67.8	#72.0	85.7	15.6	108.4	14.1	#58.9	53.3	0.0
Internal Link Dist (m)		1041.3		1564.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	221	753	313	729	468	870	840	223	838	776
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.51	0.75	0.65	0.16	0.66	0.42	0.77	0.39	0.00

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	235	121	217	216	222	71	531	324	157	297	2
Future Volume (vph)	11	235	121	217	216	222	71	531	324	157	297	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.95		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1623	1771		1700	1661		1708	1807	1366	1568	1740	1543
Flt Permitted	0.31	1.00		0.42	1.00		0.54	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)	536	1771		758	1661		970	1807	1366	465	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	255	132	236	235	241	77	577	352	171	323	2
RTOR Reduction (vph)	0	24	0	0	47	0	0	0	198	0	0	1
Lane Group Flow (vph)	12	363	0	236	429	0	77	577	154	171	323	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	26.1	26.1		26.1	26.1		32.3	32.3	32.3	32.3	32.3	32.3
Effective Green, g (s)	26.1	26.1		26.1	26.1		32.3	32.3	32.3	32.3	32.3	32.3
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.44	0.44	0.44	0.44	0.44	0.44
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	189	627		268	588		425	791	598	203	762	676
v/s Ratio Prot		0.21			0.26			0.32			0.19	
v/s Ratio Perm	0.02			c0.31			0.08		0.11	c0.37		0.00
v/c Ratio	0.06	0.58		0.88	0.73		0.18	0.73	0.26	0.84	0.42	0.00
Uniform Delay, d1	15.7	19.3		22.3	20.7		12.6	17.1	13.1	18.4	14.3	11.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.3		26.7	4.5		0.1	2.9	0.1	25.0	0.1	0.0
Delay (s)	15.9	20.6		49.1	25.2		12.7	20.0	13.2	43.4	14.4	11.6
Level of Service	B	C		D	C		B	B	B	D	B	B
Approach Delay (s/veh)		20.5			33.1			17.0			24.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	15.3
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

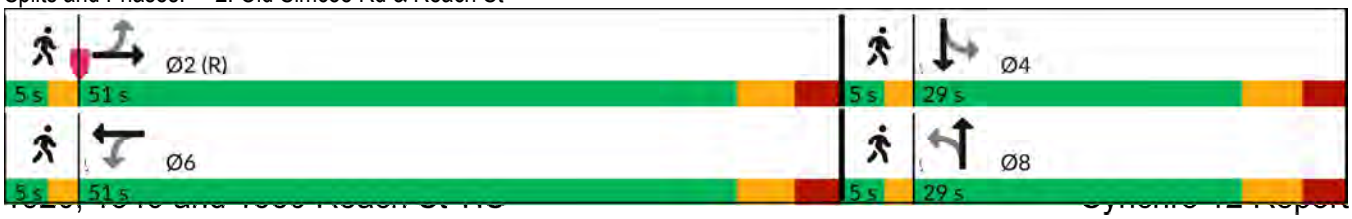
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	547	150	67	496	40	177	91	106	76	76	96
Future Volume (vph)	85	547	150	67	496	40	177	91	106	76	76	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			1.00		0.80	0.98		0.98	0.85	
Frt		0.968			0.989			0.919			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1651	0	1643	1667	0	1658	1618	0	1500	1386	0
Flt Permitted	0.330			0.202			0.633			0.589		
Satd. Flow (perm)	596	1651	0	349	1667	0	887	1618	0	913	1386	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			6			61			66	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	92	595	163	73	539	43	192	99	115	83	83	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	758	0	73	582	0	192	214	0	83	187	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	44.2	44.2		44.2	44.2		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.30	0.30		0.30	0.30	
v/c Ratio	0.28	0.83		0.38	0.64		0.72	0.41		0.30	0.40	
Control Delay (s/veh)	13.9	26.4		15.5	13.5		45.8	20.4		28.1	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	13.9	26.4		15.5	13.5		45.8	20.4		28.1	19.0	
LOS	B	C		B	B		D	C		C	B	
Approach Delay (s/veh)		25.0			13.8			32.4			21.8	
Approach LOS		C			B			C			C	

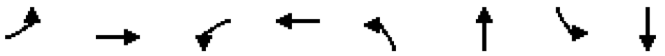
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 22.6		Intersection LOS: C	
Intersection Capacity Utilization 105.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



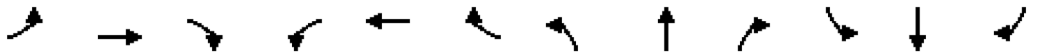
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	92	758	73	582	192	214	83	187
v/c Ratio	0.28	0.83	0.38	0.64	0.72	0.41	0.30	0.40
Control Delay (s/veh)	13.9	26.4	15.5	13.5	45.8	20.4	28.1	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.9	26.4	15.5	13.5	45.8	20.4	28.1	19.0
Queue Length 50th (m)	8.0	99.7	4.8	39.6	29.5	20.3	11.0	16.0
Queue Length 95th (m)	17.9	#174.1	m8.4	55.6	#61.4	39.5	23.3	34.1
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	325	912	190	914	266	528	273	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.83	0.38	0.64	0.72	0.41	0.30	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	547	150	67	496	40	177	91	106	76	76	96
Future Volume (vph)	85	547	150	67	496	40	177	91	106	76	76	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.85	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.80	1.00		0.98	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1714	1650		1643	1667		1326	1618		1472	1385	
Flt Permitted	0.33	1.00		0.20	1.00		0.63	1.00		0.59	1.00	
Satd. Flow (perm)	596	1650		350	1667		883	1618		914	1385	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	595	163	73	539	43	192	99	115	83	83	104
RTOR Reduction (vph)	0	10	0	0	3	0	0	43	0	0	46	0
Lane Group Flow (vph)	92	748	0	73	579	0	192	171	0	83	141	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Effective Green, g (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.30	0.30		0.30	0.30	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	325	902		191	911		264	485		274	415	
v/s Ratio Prot		c0.45			0.35			0.11			0.10	
v/s Ratio Perm	0.15			0.21			c0.22			0.09		
v/c Ratio	0.28	0.83		0.38	0.64		0.73	0.35		0.30	0.34	
Uniform Delay, d1	10.9	16.9		11.7	14.2		28.2	24.7		24.3	24.5	
Progression Factor	1.00	1.00		0.79	0.73		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	8.7		4.9	2.9		16.1	2.0		2.8	2.2	
Delay (s)	13.1	25.6		14.1	13.2		44.3	26.7		27.1	26.8	
Level of Service	B	C		B	B		D	C		C	C	
Approach Delay (s/veh)		24.3			13.3			35.0			26.9	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	46	397	41	29	6	342	527	32	4	297	170
Future Volume (vph)	329	46	397	41	29	6	342	527	32	4	297	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97						1.00		1.00		
Frt		0.866			0.973			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1487	0	1675	1828	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.732			0.255			0.384			0.435		
Satd. Flow (perm)	1254	1487	0	449	1828	0	622	1842	0	789	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		432			7			5				185
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	358	50	432	45	32	7	372	573	35	4	323	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	482	0	45	39	0	372	608	0	4	323	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	36.0	36.0		36.0	36.0		17.0	49.0		32.0	32.0	32.0
Total Split (%)	40.0%	40.0%		40.0%	40.0%		18.9%	54.4%		35.6%	35.6%	35.6%
Maximum Green (s)	29.6	29.6		29.6	29.6		14.0	42.6		25.6	25.6	25.6
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	31.4	31.4		31.4	31.4		49.2	45.8		28.4	28.4	28.4
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.55	0.51		0.32	0.32	0.32
v/c Ratio	0.82	0.60		0.29	0.06		0.77	0.65		0.02	0.56	0.33
Control Delay (s/veh)	33.0	4.8		25.3	15.6		26.5	21.1		23.5	31.3	5.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	33.0	4.8		25.3	15.6		26.5	21.1		23.5	31.3	5.7
LOS	C	A		C	B		C	C		C	C	A
Approach Delay (s/veh)		16.8			20.8			23.2			22.0	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 20.6		Intersection LOS: C	
Intersection Capacity Utilization 96.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	358	482	45	39	372	608	4	323	185
v/c Ratio	0.82	0.60	0.29	0.06	0.77	0.65	0.02	0.56	0.33
Control Delay (s/veh)	33.0	4.8	25.3	15.6	26.5	21.1	23.5	31.3	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.0	4.8	25.3	15.6	26.5	21.1	23.5	31.3	5.7
Queue Length 50th (m)	36.4	1.9	5.2	3.4	39.4	78.6	0.5	48.3	0.0
Queue Length 95th (m)	m64.6	m13.0	14.1	9.5	#76.0	117.3	2.9	75.4	14.6
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	455	814	162	668	489	939	248	580	569
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.59	0.28	0.06	0.76	0.65	0.02	0.56	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	46	397	41	29	6	342	527	32	4	297	170
Future Volume (vph)	329	46	397	41	29	6	342	527	32	4	297	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1487		1675	1828		1540	1843		1723	1842	1403
Flt Permitted	0.73	1.00		0.25	1.00		0.38	1.00		0.43	1.00	1.00
Satd. Flow (perm)	1253	1487		449	1828		622	1843		788	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	358	50	432	45	32	7	372	573	35	4	323	185
RTOR Reduction (vph)	0	281	0	0	5	0	0	2	0	0	0	127
Lane Group Flow (vph)	358	201	0	45	34	0	372	606	0	4	323	58
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	31.4	31.4		31.4	31.4		45.8	45.8		28.4	28.4	28.4
Effective Green, g (s)	31.4	31.4		31.4	31.4		45.8	45.8		28.4	28.4	28.4
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.51	0.51		0.32	0.32	0.32
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	437	518		156	637		463	937		248	581	442
v/s Ratio Prot		0.14			0.02		c0.13	0.33			0.18	
v/s Ratio Perm	c0.29			0.10			c0.28			0.01		0.04
v/c Ratio	0.82	0.39		0.29	0.05		0.80	0.65		0.02	0.56	0.13
Uniform Delay, d1	26.7	22.1		21.2	19.4		15.3	16.2		21.2	25.6	22.0
Progression Factor	0.78	0.68		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.6	0.4		1.0	0.0		9.7	3.4		0.1	3.8	0.6
Delay (s)	29.5	15.3		22.2	19.5		25.0	19.6		21.3	29.4	22.6
Level of Service	C	B		C	B		C	B		C	C	C
Approach Delay (s/veh)		21.4			21.0			21.7			26.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	684	32	36	619	76	99
Future Volume (vph)	684	32	36	619	76	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994					0.850
Flt Protected				0.997	0.950	
Satd. Flow (prot)	1872	0	0	1878	1750	1566
Flt Permitted				0.997	0.950	
Satd. Flow (perm)	1872	0	0	1878	1750	1566
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	743	35	39	673	83	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	778	0	0	712	83	108
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	684	32	36	619	76	99
Future Volume (Veh/h)	684	32	36	619	76	99
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	743	35	39	673	83	108
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			778		1512	761
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			778		1512	761
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		34	73
cM capacity (veh/h)			839		126	406

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	778	712	83	108
Volume Left	0	39	83	0
Volume Right	35	0	0	108
cSH	1700	839	126	406
Volume to Capacity	0.46	0.05	0.66	0.27
Queue Length 95th (m)	0.0	1.1	26.6	8.0
Control Delay (s/veh)	0.0	1.2	76.5	17.1
Lane LOS		A	F	C
Approach Delay (s/veh)	0.0	1.2	42.9	
Approach LOS			E	

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	649	134	68	619	36	48
Future Volume (vph)	649	134	68	619	36	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.923	
Flt Protected				0.995	0.979	
Satd. Flow (prot)	1840	0	0	1874	1665	0
Flt Permitted				0.995	0.979	
Satd. Flow (perm)	1840	0	0	1874	1665	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	705	146	74	673	39	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	851	0	0	747	91	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 93.6%		ICU Level of Service F	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	649	134	68	619	36	48
Future Volume (Veh/h)	649	134	68	619	36	48
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	705	146	74	673	39	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				249		
pX, platoon unblocked					0.81	
vC, conflicting volume			851		1599	778
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			851		1622	778
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		53	87
cM capacity (veh/h)			788		83	396

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	851	747	91
Volume Left	0	74	39
Volume Right	146	0	52
cSH	1700	788	152
Volume to Capacity	0.50	0.09	0.60
Queue Length 95th (m)	0.0	2.4	24.1
Control Delay (s/veh)	0.0	2.4	59.0
Lane LOS		A	F
Approach Delay (s/veh)	0.0	2.4	59.0
Approach LOS			F

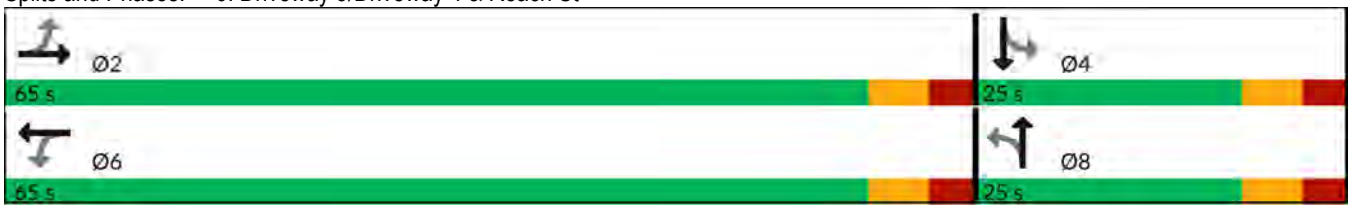
Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	615	58	159	577	33	86	0	110	33	0	24
Future Volume (vph)	24	615	58	159	577	33	86	0	110	33	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	121.0		0.0	171.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	70.0			70.0			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.992			0.924			0.943	
Flt Protected	0.950			0.950				0.979			0.972	
Satd. Flow (prot)	1789	1859	0	1789	1868	0	0	1666	0	0	1688	0
Flt Permitted	0.349			0.309				0.830			0.664	
Satd. Flow (perm)	657	1859	0	582	1868	0	0	1413	0	0	1153	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6			65			48	
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	668	63	173	627	36	93	0	120	36	0	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	731	0	173	663	0	0	213	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	58.0	58.0		58.0	58.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	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	
Act Effct Green (s)	59.4	59.4		59.4	59.4			13.8			13.8	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.16	
v/c Ratio	0.06	0.58		0.44	0.52			0.77			0.28	
Control Delay (s/veh)	6.1	10.2		11.6	9.3			42.2			16.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	6.1	10.2		11.6	9.3			42.2			16.1	
LOS	A	B		B	A			D			B	
Approach Delay (s/veh)		10.0			9.8			42.2			16.1	
Approach LOS		B			A			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 87.2			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 13.8		Intersection LOS: B	
Intersection Capacity Utilization 75.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Driveway 3/Driveway 4 & Reach St



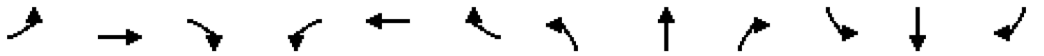


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	26	731	173	663	213	62
v/c Ratio	0.06	0.58	0.44	0.52	0.77	0.28
Control Delay (s/veh)	6.1	10.2	11.6	9.3	42.2	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.1	10.2	11.6	9.3	42.2	16.1
Queue Length 50th (m)	1.3	56.4	11.7	48.4	23.3	2.0
Queue Length 95th (m)	4.4	96.7	29.5	82.8	46.9	12.3
Internal Link Dist (m)		225.1		802.4	292.3	284.1
Turn Bay Length (m)	121.0		171.0			
Base Capacity (vph)	447	1269	396	1274	343	276
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.58	0.44	0.52	0.62	0.22

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	615	58	159	577	33	86	0	110	33	0	24
Future Volume (vph)	24	615	58	159	577	33	86	0	110	33	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.92			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1789	1859		1789	1868			1666			1689	
Flt Permitted	0.35	1.00		0.31	1.00			0.83			0.66	
Satd. Flow (perm)	657	1859		582	1868			1412			1155	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	668	63	173	627	36	93	0	120	36	0	26
RTOR Reduction (vph)	0	4	0	0	2	0	0	55	0	0	40	0
Lane Group Flow (vph)	26	727	0	173	661	0	0	158	0	0	22	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	59.4	59.4		59.4	59.4			13.8			13.8	
Effective Green, g (s)	59.4	59.4		59.4	59.4			13.8			13.8	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.16	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	447	1266		396	1272			223			182	
v/s Ratio Prot		c0.39			0.35							
v/s Ratio Perm	0.04			0.30				c0.11			0.02	
v/c Ratio	0.06	0.57		0.44	0.52			0.71			0.12	
Uniform Delay, d1	4.6	7.3		6.3	6.9			34.8			31.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	1.9		3.5	1.5			9.9			0.3	
Delay (s)	4.9	9.2		9.8	8.4			44.7			31.8	
Level of Service	A	A		A	A			D			C	
Approach Delay (s/veh)		9.0			8.7			44.7			31.8	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

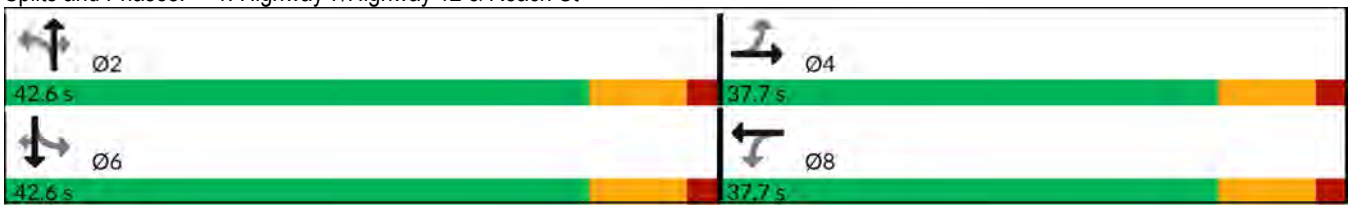


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	172	92	224	175	144	92	222	167	178	258	1
Future Volume (vph)	1	172	92	224	175	144	92	222	167	178	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1681	0	1526	1600	0	1597	1606	1390	1643	1579	772
Flt Permitted	0.504			0.584			0.588			0.609		
Satd. Flow (perm)	947	1681	0	938	1600	0	988	1606	1390	1053	1579	772
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			59				182			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1570.3			298.7			443.4	
Travel Time (s)		54.8			80.8			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Adj. Flow (vph)	1	187	100	243	190	157	100	241	182	193	280	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	287	0	243	347	0	100	241	182	193	280	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	22.6	22.6		22.6	22.6		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.00	0.46		0.73	0.57		0.25	0.38	0.27	0.46	0.45	0.00
Control Delay (s/veh)	12.0	15.4		30.7	16.9		17.4	17.5	4.2	20.7	18.6	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.0	15.4		30.7	16.9		17.4	17.5	4.2	20.7	18.6	0.0
LOS	B	B		C	B		B	B	A	C	B	A
Approach Delay (s/veh)		15.4			22.6			12.9			19.4	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 63.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 18.0		Intersection LOS: B	
Intersection Capacity Utilization 95.2%		ICU Level of Service F	
Analysis Period (min) 15			

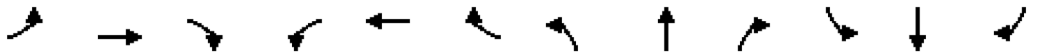
Splits and Phases: 1: Highway 7/Highway 12 & Reach St





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	287	243	347	100	241	182	193	280	1
v/c Ratio	0.00	0.46	0.73	0.57	0.25	0.38	0.27	0.46	0.45	0.00
Control Delay (s/veh)	12.0	15.4	30.7	16.9	17.4	17.5	4.2	20.7	18.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.0	15.4	30.7	16.9	17.4	17.5	4.2	20.7	18.6	0.0
Queue Length 50th (m)	0.1	21.2	23.7	25.7	7.9	20.1	0.0	16.8	24.1	0.0
Queue Length 95th (m)	0.9	38.4	47.2	46.7	20.3	41.7	11.4	38.3	48.9	0.0
Internal Link Dist (m)		1041.3		1546.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	453	824	448	796	551	896	856	588	881	459
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.35	0.54	0.44	0.18	0.27	0.21	0.33	0.32	0.00

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	172	92	224	175	144	92	222	167	178	258	1
Future Volume (vph)	1	172	92	224	175	144	92	222	167	178	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1681		1526	1600		1597	1606	1390	1643	1579	772
Flt Permitted	0.50	1.00		0.58	1.00		0.59	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	947	1681		938	1600		988	1606	1390	1053	1579	772
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	187	100	243	190	157	100	241	182	193	280	1
RTOR Reduction (vph)	0	24	0	0	38	0	0	0	109	0	0	1
Lane Group Flow (vph)	1	263	0	243	309	0	100	241	73	193	280	0
Heavy Vehicles (%)	0%	7%	4%	17%	9%	10%	8%	17%	11%	5%	19%	100%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	22.6	22.6		22.6	22.6		25.3	25.3	25.3	25.3	25.3	25.3
Effective Green, g (s)	22.6	22.6		22.6	22.6		25.3	25.3	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	338	601		335	572		395	642	556	421	632	309
v/s Ratio Prot		0.16			0.19			0.15			0.18	
v/s Ratio Perm	0.00			c0.26			0.10		0.05	c0.18		0.00
v/c Ratio	0.00	0.44		0.73	0.54		0.25	0.38	0.13	0.46	0.44	0.00
Uniform Delay, d1	13.1	15.5		17.6	16.2		12.6	13.4	12.0	13.9	13.8	11.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.5		7.6	1.0		0.1	0.1	0.0	0.3	0.2	0.0
Delay (s)	13.1	16.0		25.2	17.2		12.8	13.5	12.0	14.2	14.0	11.4
Level of Service	B	B		C	B		B	B	B	B	B	B
Approach Delay (s/veh)		16.0			20.5			12.9			14.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	15.3
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

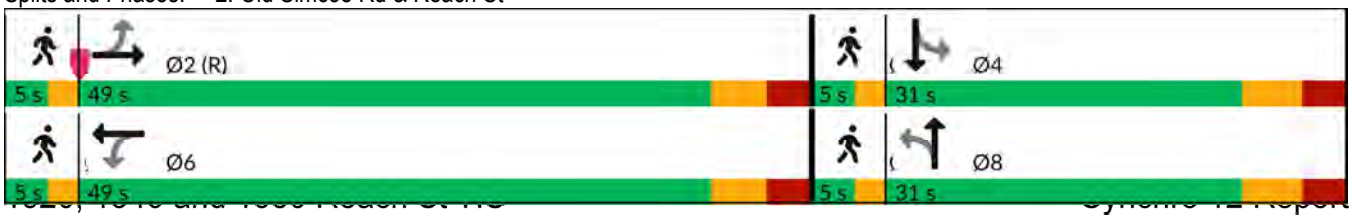
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	432	181	123	428	59	149	80	65	57	124	98
Future Volume (vph)	90	432	181	123	428	59	149	80	65	57	124	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.86	0.99		1.00	0.90	
Frt		0.956			0.982			0.933			0.934	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1691	1547	0	1658	1698	0	1627	1667	0	1500	1490	0
Flt Permitted	0.358			0.251			0.555			0.657		
Satd. Flow (perm)	637	1547	0	438	1698	0	822	1667	0	1035	1490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			10			45			43	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		831.2			491.4			406.1			330.3	
Travel Time (s)		59.8			35.4			29.2			29.7	
Confl. Peds. (#/hr)			19	19			96		1	1		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Adj. Flow (vph)	98	470	197	134	465	64	162	87	71	62	135	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	667	0	134	529	0	162	158	0	62	242	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	49.0	49.0		49.0	49.0		31.0	31.0		31.0	31.0	
Total Split (%)	54.4%	54.4%		54.4%	54.4%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	42.4	42.4		42.4	42.4		24.1	24.1		24.1	24.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.32	0.32		0.32	0.32	
v/c Ratio	0.29	0.80		0.58	0.59		0.61	0.28		0.19	0.47	
Control Delay (s/veh)	14.9	26.0		27.2	17.7		37.3	17.5		23.8	23.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.9	26.0		27.2	17.7		37.3	17.5		23.8	23.5	
LOS	B	C		C	B		D	B		C	C	
Approach Delay (s/veh)		24.5			19.6			27.5			23.5	
Approach LOS		C			B			C			C	

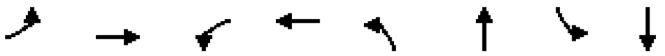
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 23.3		Intersection LOS: C	
Intersection Capacity Utilization 99.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



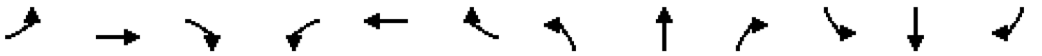
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	667	134	529	162	158	62	242
v/c Ratio	0.29	0.80	0.58	0.59	0.61	0.28	0.19	0.47
Control Delay (s/veh)	14.9	26.0	27.2	17.7	37.3	17.5	23.8	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.9	26.0	27.2	17.7	37.3	17.5	23.8	23.5
Queue Length 50th (m)	8.9	85.6	14.9	58.1	23.4	14.0	7.6	27.0
Queue Length 95th (m)	19.5	#141.7	37.1	88.6	45.4	28.9	17.3	48.5
Internal Link Dist (m)		807.2		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	335	829	230	899	265	569	334	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.80	0.58	0.59	0.61	0.28	0.19	0.47

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	432	181	123	428	59	149	80	65	57	124	98
Future Volume (vph)	90	432	181	123	428	59	149	80	65	57	124	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.90	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.86	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.93		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1691	1546		1658	1698		1403	1666		1497	1490	
Flt Permitted	0.36	1.00		0.25	1.00		0.55	1.00		0.66	1.00	
Satd. Flow (perm)	637	1546		438	1698		819	1666		1035	1490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	470	197	134	465	64	162	87	71	62	135	107
RTOR Reduction (vph)	0	15	0	0	5	0	0	30	0	0	29	0
Lane Group Flow (vph)	98	652	0	134	524	0	162	128	0	62	213	0
Confl. Peds. (#/hr)			19	19			96		1	1		96
Heavy Vehicles (%)	2%	16%	8%	4%	9%	6%	6%	1%	8%	15%	4%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Effective Green, g (s)	47.4	47.4		47.4	47.4		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.32	0.32		0.32	0.32	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	335	814		230	894		264	538		334	481	
v/s Ratio Prot		c0.42			0.31			0.08			0.14	
v/s Ratio Perm	0.15			0.31			c0.20			0.06		
v/c Ratio	0.29	0.80		0.58	0.59		0.61	0.24		0.19	0.44	
Uniform Delay, d1	11.9	17.4		14.5	14.6		25.7	22.3		21.9	24.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	8.1		10.4	2.8		10.2	1.0		1.2	2.9	
Delay (s)	14.1	25.6		24.9	17.4		35.9	23.4		23.1	27.0	
Level of Service	B	C		C	B		D	C		C	C	
Approach Delay (s/veh)		24.1			18.9			29.7			26.2	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



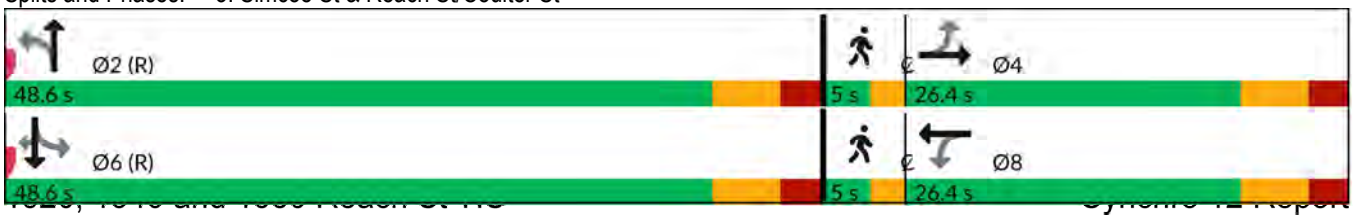
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	47	368	37	47	7	274	238	23	5	409	226
Future Volume (vph)	146	47	368	37	47	7	274	238	23	5	409	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.96		0.99	1.00		1.00	1.00		1.00		0.97
Frt		0.867			0.980			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1582	1466	0	1675	1793	0	1540	1754	0	1725	1807	1442
Flt Permitted	0.719			0.237			0.471			0.586		
Satd. Flow (perm)	1189	1466	0	415	1793	0	761	1754	0	1059	1807	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		400			8			9				246
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Adj. Flow (vph)	159	51	400	40	51	8	298	259	25	5	445	246
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	451	0	40	59	0	298	284	0	5	445	246
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		29.4	29.4		29.4	29.4	29.4
Total Split (s)	26.4	26.4		26.4	26.4		48.6	48.6		48.6	48.6	48.6
Total Split (%)	33.0%	33.0%		33.0%	33.0%		60.8%	60.8%		60.8%	60.8%	60.8%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.2	42.2		42.2	42.2	42.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0		7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	16.9	16.9		16.9	16.9		50.3	50.3		50.3	50.3	50.3
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.63	0.63		0.63	0.63	0.63
v/c Ratio	0.63	0.72		0.46	0.15		0.62	0.26		0.01	0.39	0.25
Control Delay (s/veh)	38.8	11.6		42.2	21.2		19.2	8.3		8.0	9.9	2.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	38.8	11.6		42.2	21.2		19.2	8.3		8.0	9.9	2.1
LOS	D	B		D	C		B	A		A	A	A
Approach Delay (s/veh)		18.7			29.7			13.9			7.1	
Approach LOS		B			C			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 13.8		Intersection LOS: B	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	159	451	40	59	298	284	5	445	246
v/c Ratio	0.63	0.72	0.46	0.15	0.62	0.26	0.01	0.39	0.25
Control Delay (s/veh)	38.8	11.6	42.2	21.2	19.2	8.3	8.0	9.9	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.8	11.6	42.2	21.2	19.2	8.3	8.0	9.9	2.1
Queue Length 50th (m)	22.2	6.4	5.4	6.4	24.3	16.2	0.3	29.4	0.0
Queue Length 95th (m)	35.8	30.1	13.5	13.6	#76.5	36.5	1.9	61.9	9.7
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	313	680	109	477	478	1105	665	1135	973
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.66	0.37	0.12	0.62	0.26	0.01	0.39	0.25

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	47	368	37	47	7	274	238	23	5	409	226
Future Volume (vph)	146	47	368	37	47	7	274	238	23	5	409	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1571	1466		1665	1792		1535	1754		1717	1807	1404
Flt Permitted	0.72	1.00		0.24	1.00		0.47	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1188	1466		415	1792		762	1754		1058	1807	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	51	400	40	51	8	298	259	25	5	445	246
RTOR Reduction (vph)	0	316	0	0	6	0	0	3	0	0	0	91
Lane Group Flow (vph)	159	136	0	40	53	0	298	281	0	5	445	155
Confl. Peds. (#/hr)	3		8	8		3	4		4	4		4
Heavy Vehicles (%)	9%	0%	8%	3%	0%	17%	12%	6%	0%	0%	4%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.9	16.9		16.9	16.9		50.3	50.3		50.3	50.3	50.3
Effective Green, g (s)	16.9	16.9		16.9	16.9		50.3	50.3		50.3	50.3	50.3
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.63	0.63		0.63	0.63	0.63
Clearance Time (s)	6.4	6.4		6.4	6.4		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	250	309		87	378		479	1102		665	1136	882
v/s Ratio Prot		0.09			0.03			0.16			0.25	
v/s Ratio Perm	c0.13			0.10			c0.39			0.00		0.11
v/c Ratio	0.64	0.44		0.46	0.14		0.62	0.25		0.01	0.39	0.18
Uniform Delay, d1	28.7	27.4		27.6	25.6		9.1	6.6		5.5	7.3	6.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.2	1.0		3.8	0.2		6.0	0.6		0.0	1.0	0.4
Delay (s)	34.0	28.4		31.4	25.8		15.0	7.1		5.6	8.3	6.6
Level of Service	C	C		C	C		B	A		A	A	A
Approach Delay (s/veh)		29.9			28.1			11.2			7.7	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	463	54	82	616	15	26
Future Volume (vph)	463	54	82	616	15	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	1857	0	0	1872	1750	1566
Flt Permitted				0.994	0.950	
Satd. Flow (perm)	1857	0	0	1872	1750	1566
Link Speed (k/h)	50			70	20	
Link Distance (m)	1570.3			416.7	349.2	
Travel Time (s)	113.1			21.4	62.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	503	59	89	670	16	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	562	0	0	759	16	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.9%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	463	54	82	616	15	26
Future Volume (Veh/h)	463	54	82	616	15	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	503	59	89	670	16	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			562		1381	533
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			562		1381	533
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		89	95
cM capacity (veh/h)			1009		145	547

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	562	759	16	28
Volume Left	0	89	16	0
Volume Right	59	0	0	28
cSH	1700	1009	145	547
Volume to Capacity	0.33	0.09	0.11	0.05
Queue Length 95th (m)	0.0	2.2	2.8	1.2
Control Delay (s/veh)	0.0	2.2	32.9	11.9
Lane LOS		A	D	B
Approach Delay (s/veh)	0.0	2.2	19.6	
Approach LOS			C	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	440	49	34	649	49	77
Future Volume (vph)	440	49	34	649	49	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987				0.917	
Flt Protected				0.998	0.981	
Satd. Flow (prot)	1859	0	0	1880	1657	0
Flt Permitted				0.998	0.981	
Satd. Flow (perm)	1859	0	0	1880	1657	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	416.7			243.0	316.7	
Travel Time (s)	30.0			12.5	57.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	53	37	705	53	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	531	0	0	742	137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.0%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	440	49	34	649	49	77
Future Volume (Veh/h)	440	49	34	649	49	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	478	53	37	705	53	84
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				243		
pX, platoon unblocked					0.77	
vC, conflicting volume			531		1284	505
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			531		1220	505
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		64	85
cM capacity (veh/h)			1036		148	567

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	531	742	137
Volume Left	0	37	53
Volume Right	53	0	84
cSH	1700	1036	271
Volume to Capacity	0.31	0.04	0.51
Queue Length 95th (m)	0.0	0.8	20.1
Control Delay (s/veh)	0.0	0.9	31.1
Lane LOS		A	D
Approach Delay (s/veh)	0.0	0.9	31.1
Approach LOS			D

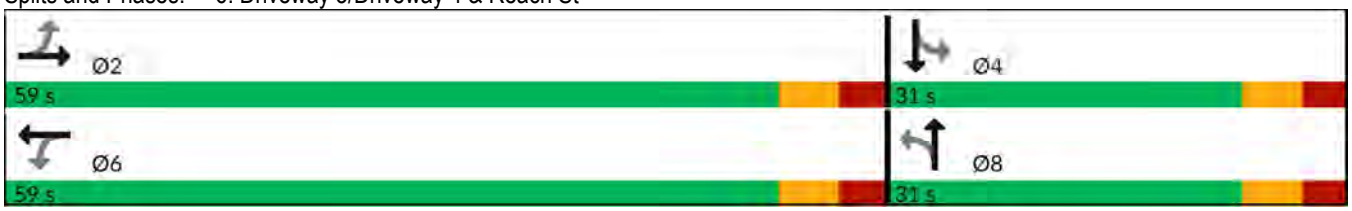
Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	449	22	78	526	71	113	0	180	73	0	44
Future Volume (vph)	46	449	22	78	526	71	113	0	180	73	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	121.0		0.0	171.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	70.0			70.0			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.982			0.917			0.949	
Flt Protected	0.950			0.950				0.981			0.970	
Satd. Flow (prot)	1789	1870	0	1789	1850	0	0	1657	0	0	1696	0
Flt Permitted	0.302			0.401				0.834			0.594	
Satd. Flow (perm)	569	1870	0	755	1850	0	0	1409	0	0	1038	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			13			87			48	
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		243.0			831.2			335.1			321.9	
Travel Time (s)		17.5			42.7			60.3			57.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	488	24	85	572	77	123	0	196	79	0	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	512	0	85	649	0	0	319	0	0	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	59.0	59.0		59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%		65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	52.0	52.0		52.0	52.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	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	
Act Effct Green (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.27			0.27	
v/c Ratio	0.15	0.47		0.19	0.60			0.73			0.41	
Control Delay (s/veh)	10.3	12.7		10.5	15.0			32.6			21.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	10.3	12.7		10.5	15.0			32.6			21.7	
LOS	B	B		B	B			C			C	
Approach Delay (s/veh)		12.5			14.5			32.6			21.7	
Approach LOS		B			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 17.7		Intersection LOS: B	
Intersection Capacity Utilization 71.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Driveway 3/Driveway 4 & Reach St



6: Driveway 3/Driveway 4 & Reach St



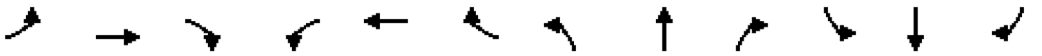
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	50	512	85	649	319	127
v/c Ratio	0.15	0.47	0.19	0.60	0.73	0.41
Control Delay (s/veh)	10.3	12.7	10.5	15.0	32.6	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.3	12.7	10.5	15.0	32.6	21.7
Queue Length 50th (m)	3.7	47.1	6.5	66.0	36.6	10.8
Queue Length 95th (m)	9.4	70.3	14.1	98.3	#73.5	26.9
Internal Link Dist (m)		219.0		807.2	311.1	297.9
Turn Bay Length (m)	121.0		171.0			
Base Capacity (vph)	328	1082	436	1074	439	312
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.47	0.19	0.60	0.73	0.41

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	449	22	78	526	71	113	0	180	73	0	44
Future Volume (vph)	46	449	22	78	526	71	113	0	180	73	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.92			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1789	1870		1789	1850			1657			1695	
Flt Permitted	0.30	1.00		0.40	1.00			0.83			0.59	
Satd. Flow (perm)	569	1870		755	1850			1410			1038	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	488	24	85	572	77	123	0	196	79	0	48
RTOR Reduction (vph)	0	2	0	0	5	0	0	64	0	0	35	0
Lane Group Flow (vph)	50	510	0	85	644	0	0	255	0	0	92	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Effective Green, g (s)	52.0	52.0		52.0	52.0			24.0			24.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.27			0.27	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	328	1080		436	1068			376			276	
v/s Ratio Prot		0.27			c0.35							
v/s Ratio Perm	0.09			0.11				c0.18			0.09	
v/c Ratio	0.15	0.47		0.19	0.60			0.68			0.33	
Uniform Delay, d1	8.8	11.0		9.0	12.3			29.5			26.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.5		1.0	2.5			9.5			3.2	
Delay (s)	9.8	12.5		10.0	14.8			39.0			29.8	
Level of Service	A	B		B	B			D			C	
Approach Delay (s/veh)		12.3			14.3			39.0			29.8	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

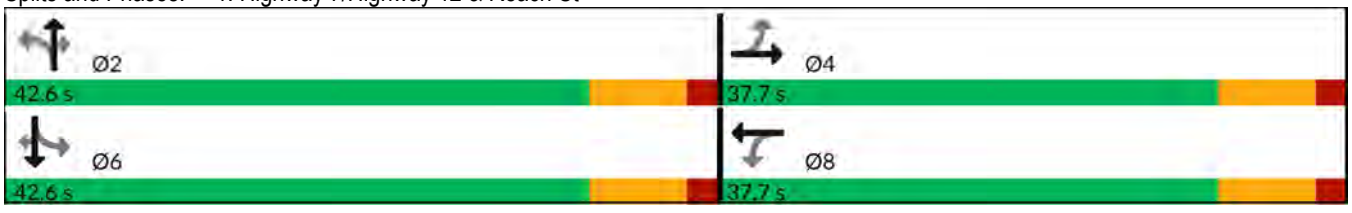


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	244	127	224	225	228	75	558	334	162	313	2
Future Volume (vph)	11	244	127	224	225	228	75	558	334	162	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Storage Length (m)	121.0		0.0	131.0		0.0	97.0		57.0	113.0		63.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	70.0			70.0			57.0			51.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949			0.925				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	1771	0	1700	1663	0	1708	1807	1366	1568	1740	1543
Flt Permitted	0.289			0.398			0.516			0.255		
Satd. Flow (perm)	494	1771	0	712	1663	0	928	1807	1366	421	1740	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			72				363			64
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		1065.3			1588.3			298.7			443.4	
Travel Time (s)		54.8			81.7			13.4			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Adj. Flow (vph)	12	265	138	243	245	248	82	607	363	176	340	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	403	0	243	493	0	82	607	363	176	340	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.2			3.2	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.06	1.01	1.06	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	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	1.8	6.1	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		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		25.0	25.0	25.0	25.0	25.0	25.0
Minimum Split (s)	26.0	26.0		26.0	26.0		33.0	33.0	33.0	33.0	33.0	33.0
Total Split (s)	37.7	37.7		37.7	37.7		42.6	42.6	42.6	42.6	42.6	42.6
Total Split (%)	46.9%	46.9%		46.9%	46.9%		53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		35.0	35.0	35.0	35.0	35.0	35.0
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9	5.9	5.9	5.9	5.9
All-Red Time (s)	1.8	1.8		1.8	1.8		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	13.0	13.0		13.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	28.2	28.2		28.2	28.2		35.1	35.1	35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.07	0.61		0.95	0.77		0.20	0.75	0.45	0.94	0.44	0.00
Control Delay (s/veh)	17.5	23.2		73.1	28.0		15.7	26.2	3.7	79.1	17.8	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.5	23.2		73.1	28.0		15.7	26.2	3.7	79.1	17.8	0.0
LOS	B	C		E	C		B	C	A	E	B	A
Approach Delay (s/veh)		23.0			42.9			17.6			38.6	
Approach LOS		C			D			B			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80.3			
Actuated Cycle Length: 78.6			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 29.3		Intersection LOS: C	
Intersection Capacity Utilization 111.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 7/Highway 12 & Reach St



1: Highway 7/Highway 12 & Reach St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	12	403	243	493	82	607	363	176	340	2
v/c Ratio	0.07	0.61	0.95	0.77	0.20	0.75	0.45	0.94	0.44	0.00
Control Delay (s/veh)	17.5	23.2	73.1	28.0	15.7	26.2	3.7	79.1	17.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.5	23.2	73.1	28.0	15.7	26.2	3.7	79.1	17.8	0.0
Queue Length 50th (m)	1.2	43.8	34.5	54.7	7.5	75.9	0.0	25.1	35.2	0.0
Queue Length 95th (m)	4.6	71.2	#77.7	90.7	16.5	#117.4	14.3	#63.9	56.5	0.0
Internal Link Dist (m)		1041.3		1564.3		274.7			419.4	
Turn Bay Length (m)	121.0		131.0		97.0		57.0	113.0		63.0
Base Capacity (vph)	188	699	272	680	413	805	810	187	776	723
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.58	0.89	0.73	0.20	0.75	0.45	0.94	0.44	0.00

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	244	127	224	225	228	75	558	334	162	313	2
Future Volume (vph)	11	244	127	224	225	228	75	558	334	162	313	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.2
Total Lost time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	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
Frt	1.00	0.95		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1623	1771		1700	1662		1708	1807	1366	1568	1740	1543
Flt Permitted	0.29	1.00		0.40	1.00		0.52	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	494	1771		712	1662		928	1807	1366	421	1740	1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	265	138	243	245	248	82	607	363	176	340	2
RTOR Reduction (vph)	0	24	0	0	46	0	0	0	201	0	0	1
Lane Group Flow (vph)	12	379	0	243	447	0	82	607	162	176	340	1
Heavy Vehicles (%)	10%	1%	0%	5%	4%	5%	1%	4%	13%	10%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	28.2	28.2		28.2	28.2		35.1	35.1	35.1	35.1	35.1	35.1
Effective Green, g (s)	28.2	28.2		28.2	28.2		35.1	35.1	35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.45	0.45	0.45	0.45	0.45	0.45
Clearance Time (s)	7.7	7.7		7.7	7.7		7.6	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.3	0.3	0.3	0.3	0.3	0.3
Lane Grp Cap (vph)	177	635		255	596		414	806	610	188	777	689
v/s Ratio Prot		0.21			0.27			0.34			0.20	
v/s Ratio Perm	0.02			c0.34			0.09		0.12	c0.42		0.00
v/c Ratio	0.07	0.60		0.95	0.75		0.20	0.75	0.27	0.94	0.44	0.00
Uniform Delay, d1	16.6	20.6		24.6	22.1		13.2	18.1	13.7	20.7	15.0	12.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.5		43.2	5.2		0.1	3.6	0.1	46.7	0.1	0.0
Delay (s)	16.7	22.1		67.8	27.3		13.3	21.7	13.7	67.4	15.1	12.0
Level of Service	B	C		E	C		B	C	B	E	B	B
Approach Delay (s/veh)		21.9			40.6			18.3			32.9	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	15.3
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

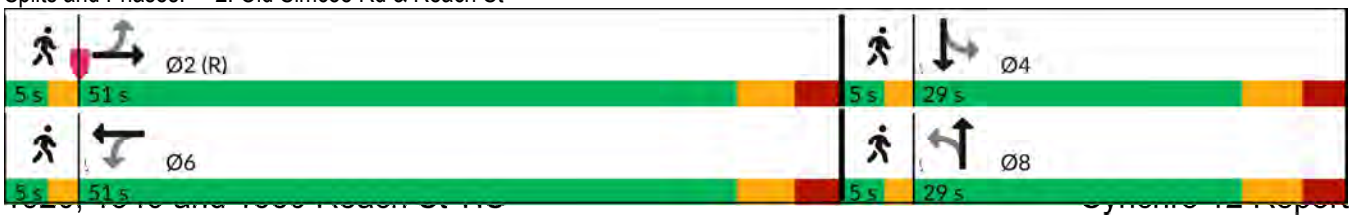
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	563	156	71	511	42	183	96	112	80	80	99
Future Volume (vph)	88	563	156	71	511	42	183	96	112	80	80	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	95.0		0.0	86.0		0.0	67.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	47.0			51.0			36.0			33.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			1.00		0.81	0.98		0.98	0.85	
Frt		0.967			0.989			0.919			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	1649	0	1643	1667	0	1658	1617	0	1500	1387	0
Flt Permitted	0.316			0.185			0.620			0.571		
Satd. Flow (perm)	574	1649	0	320	1667	0	873	1617	0	886	1387	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			7			62			66	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		826.4			491.4			406.1			330.3	
Travel Time (s)		59.5			35.4			29.2			29.7	
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Adj. Flow (vph)	96	612	170	77	555	46	199	104	122	87	87	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	782	0	77	601	0	199	226	0	87	195	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.2			3.2	
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	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (m)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(m)				
Link Offset(m)				
Crosswalk Width(m)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (k/h)				
Number of Detectors				
Detector Template				
Leading Detector (m)				
Trailing Detector (m)				
Detector 1 Position(m)				
Detector 1 Size(m)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(m)				
Detector 2 Size(m)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	26.8	26.8		26.8	26.8		28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	44.2	44.2		44.2	44.2		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.9	3.9		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Flash Don't Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.30	0.30		0.30	0.30	
v/c Ratio	0.31	0.86		0.44	0.66		0.76	0.43		0.33	0.42	
Control Delay (s/veh)	14.5	28.6		17.5	13.8		49.7	21.0		28.8	19.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.5	28.6		17.5	13.8		49.7	21.0		28.8	19.7	
LOS	B	C		B	B		D	C		C	B	
Approach Delay (s/veh)		27.1			14.3			34.4			22.5	
Approach LOS		C			B			C			C	

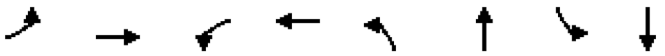
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 24.0		Intersection LOS: C	
Intersection Capacity Utilization 106.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Old Simcoe Rd & Reach St



Lane Group	Ø1	Ø3	Ø5	Ø7
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	6%	6%	6%	6%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Don't Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				

Intersection Summary



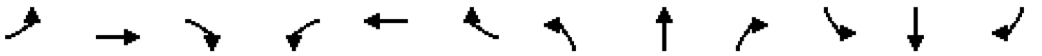
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	782	77	601	199	226	87	195
v/c Ratio	0.31	0.86	0.44	0.66	0.76	0.43	0.33	0.42
Control Delay (s/veh)	14.5	28.6	17.5	13.8	49.7	21.0	28.8	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	28.6	17.5	13.8	49.7	21.0	28.8	19.7
Queue Length 50th (m)	8.5	105.8	5.1	41.2	31.0	22.0	11.6	17.1
Queue Length 95th (m)	19.0	#184.0	m8.3	m54.0	#65.4	42.1	24.6	36.0
Internal Link Dist (m)		802.4		467.4		382.1		306.3
Turn Bay Length (m)	95.0		86.0		67.0		60.0	
Base Capacity (vph)	313	911	174	914	261	528	265	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.86	0.44	0.66	0.76	0.43	0.33	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	563	156	71	511	42	183	96	112	80	80	99
Future Volume (vph)	88	563	156	71	511	42	183	96	112	80	80	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Total Lost time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.98		1.00	0.85	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.80	1.00		0.98	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1649		1643	1667		1333	1617		1473	1387	
Flt Permitted	0.32	1.00		0.19	1.00		0.62	1.00		0.57	1.00	
Satd. Flow (perm)	571	1649		320	1667		869	1617		885	1387	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	612	170	77	555	46	199	104	122	87	87	108
RTOR Reduction (vph)	0	10	0	0	3	0	0	43	0	0	46	0
Lane Group Flow (vph)	96	772	0	77	598	0	199	183	0	87	149	0
Confl. Peds. (#/hr)	8		26	26		8	122		12	12		122
Heavy Vehicles (%)	0%	8%	8%	5%	12%	0%	4%	2%	6%	15%	3%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Effective Green, g (s)	49.2	49.2		49.2	49.2		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.30	0.30		0.30	0.30	
Clearance Time (s)	6.8	6.8		6.8	6.8		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	312	901		174	911		260	485		265	416	
v/s Ratio Prot		c0.47			0.36			0.11			0.11	
v/s Ratio Perm	0.17			0.24			c0.23			0.10		
v/c Ratio	0.31	0.86		0.44	0.66		0.77	0.38		0.33	0.36	
Uniform Delay, d1	11.1	17.4		12.2	14.4		28.6	24.9		24.5	24.7	
Progression Factor	1.00	1.00		0.76	0.72		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	10.3		6.7	3.1		19.1	2.2		3.3	2.4	
Delay (s)	13.7	27.7		15.9	13.5		47.7	27.1		27.7	27.1	
Level of Service	B	C		B	B		D	C		C	C	
Approach Delay (s/veh)		26.2			13.8			36.8			27.3	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	48	412	43	30	7	353	553	34	4	312	175
Future Volume (vph)	340	48	412	43	30	7	353	553	34	4	312	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Storage Length (m)	144.0		0.0	25.0		0.0	102.0		0.0	78.0		76.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	32.0			39.0			7.6			59.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97						1.00		1.00		
Frt		0.866			0.971			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	1488	0	1675	1824	0	1540	1842	0	1725	1842	1403
Flt Permitted	0.730			0.241			0.354			0.415		
Satd. Flow (perm)	1250	1488	0	425	1824	0	574	1842	0	753	1842	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		448			8			5				190
Link Speed (k/h)		50			40			50			50	
Link Distance (m)		491.4			520.1			224.2			328.1	
Travel Time (s)		35.4			46.8			16.1			23.6	
Confl. Peds. (#/hr)			4	4					1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Adj. Flow (vph)	370	52	448	47	33	8	384	601	37	4	339	190
Shared Lane Traffic (%)												
Lane Group Flow (vph)	370	500	0	47	41	0	384	638	0	4	339	190
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
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								Yes				
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		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
Detector 1 Position(m)	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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (m)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	26.4	26.4		26.4	26.4		8.0	29.4		29.4	29.4	29.4
Total Split (s)	36.0	36.0		36.0	36.0		17.0	49.0		32.0	32.0	32.0
Total Split (%)	40.0%	40.0%		40.0%	40.0%		18.9%	54.4%		35.6%	35.6%	35.6%
Maximum Green (s)	29.6	29.6		29.6	29.6		14.0	42.6		25.6	25.6	25.6
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.4		2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lead/Lag	Lag	Lag		Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	2.0	2.0		2.0	2.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	13.0	13.0		13.0	13.0			16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)	32.0	32.0		32.0	32.0		48.6	45.2		27.5	27.5	27.5
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.54	0.50		0.31	0.31	0.31
v/c Ratio	0.83	0.61		0.31	0.06		0.82	0.69		0.02	0.60	0.34
Control Delay (s/veh)	34.0	4.8		26.3	15.3		31.7	22.6		23.8	32.9	5.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	34.0	4.8		26.3	15.3		31.7	22.6		23.8	32.9	5.8
LOS	C	A		C	B		C	C		C	C	A
Approach Delay (s/veh)		17.2			21.2			26.1			23.2	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 22.2		Intersection LOS: C	
Intersection Capacity Utilization 99.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Simcoe St & Reach St/Coulter St



Lane Group	Ø3	Ø7
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	0.2	0.2
Recall Mode	None	None
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	370	500	47	41	384	638	4	339	190
v/c Ratio	0.83	0.61	0.31	0.06	0.82	0.69	0.02	0.60	0.34
Control Delay (s/veh)	34.0	4.8	26.3	15.3	31.7	22.6	23.8	32.9	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.0	4.8	26.3	15.3	31.7	22.6	23.8	32.9	5.8
Queue Length 50th (m)	38.8	3.2	5.5	3.5	41.1	84.7	0.5	51.3	0.0
Queue Length 95th (m)	m66.6	m12.3	14.7	9.8	#86.0	125.8	2.9	79.6	14.7
Internal Link Dist (m)		467.4		496.1		200.2		304.1	
Turn Bay Length (m)	144.0		25.0		102.0		78.0		76.0
Base Capacity (vph)	458	829	155	673	467	926	230	562	560
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.60	0.30	0.06	0.82	0.69	0.02	0.60	0.34

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	48	412	43	30	7	353	553	34	4	312	175
Future Volume (vph)	340	48	412	43	30	7	353	553	34	4	312	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.2
Total Lost time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1627	1487		1675	1824		1540	1843		1723	1842	1403
Flt Permitted	0.73	1.00		0.24	1.00		0.35	1.00		0.41	1.00	1.00
Satd. Flow (perm)	1251	1487		426	1824		574	1843		753	1842	1403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	370	52	448	47	33	8	384	601	37	4	339	190
RTOR Reduction (vph)	0	289	0	0	5	0	0	2	0	0	0	132
Lane Group Flow (vph)	370	211	0	47	36	0	384	636	0	4	339	58
Confl. Peds. (#/hr)			4	4					1	1		
Heavy Vehicles (%)	6%	0%	7%	3%	0%	0%	12%	1%	0%	0%	2%	10%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	32.0	32.0		32.0	32.0		45.2	45.2		27.5	27.5	27.5
Effective Green, g (s)	32.0	32.0		32.0	32.0		45.2	45.2		27.5	27.5	27.5
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.50	0.50		0.31	0.31	0.31
Clearance Time (s)	6.4	6.4		6.4	6.4		3.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	444	528		151	648		446	925		230	562	428
v/s Ratio Prot		0.14			0.02		c0.14	0.34			0.18	
v/s Ratio Perm	c0.30			0.11			c0.29			0.01		0.04
v/c Ratio	0.83	0.40		0.31	0.06		0.86	0.69		0.02	0.60	0.14
Uniform Delay, d1	26.6	21.8		21.0	19.1		16.2	17.0		21.8	26.6	22.6
Progression Factor	0.79	0.72		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.3	0.4		1.2	0.0		15.5	4.1		0.1	4.7	0.7
Delay (s)	30.3	16.0		22.2	19.1		31.7	21.2		22.0	31.3	23.3
Level of Service	C	B		C	B		C	C		C	C	C
Approach Delay (s/veh)		22.0			20.8			25.1			28.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	708	32	36	643	76	99
Future Volume (vph)	708	32	36	643	76	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994					0.850
Flt Protected				0.997	0.950	
Satd. Flow (prot)	1872	0	0	1878	1750	1566
Flt Permitted				0.997	0.950	
Satd. Flow (perm)	1872	0	0	1878	1750	1566
Link Speed (k/h)	50			70	20	
Link Distance (m)	1588.3			397.3	345.6	
Travel Time (s)	114.4			20.4	62.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	770	35	39	699	83	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	805	0	0	738	83	108
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	708	32	36	643	76	99
Future Volume (Veh/h)	708	32	36	643	76	99
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	770	35	39	699	83	108
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			805		1565	788
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			805		1565	788
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		29	72
cM capacity (veh/h)			819		117	391

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	805	738	83	108
Volume Left	0	39	83	0
Volume Right	35	0	0	108
cSH	1700	819	117	391
Volume to Capacity	0.47	0.05	0.71	0.28
Queue Length 95th (m)	0.0	1.1	29.3	8.4
Control Delay (s/veh)	0.0	1.2	89.4	17.7
Lane LOS		A	F	C
Approach Delay (s/veh)	0.0	1.2	48.8	
Approach LOS			E	

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	673	134	68	643	36	48
Future Volume (vph)	673	134	68	643	36	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.978				0.923	
Flt Protected				0.995	0.979	
Satd. Flow (prot)	1842	0	0	1874	1665	0
Flt Permitted				0.995	0.979	
Satd. Flow (perm)	1842	0	0	1874	1665	0
Link Speed (k/h)	50			70	20	
Link Distance (m)	397.3			249.1	323.5	
Travel Time (s)	28.6			12.8	58.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	732	146	74	699	39	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	878	0	0	773	91	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.5	
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	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	673	134	68	643	36	48
Future Volume (Veh/h)	673	134	68	643	36	48
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	732	146	74	699	39	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				249		
pX, platoon unblocked					0.80	
vC, conflicting volume			878		1652	805
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			878		1690	805
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		47	86
cM capacity (veh/h)			769		74	382

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	878	773	91
Volume Left	0	74	39
Volume Right	146	0	52
cSH	1700	769	137
Volume to Capacity	0.52	0.10	0.66
Queue Length 95th (m)	0.0	2.4	27.5
Control Delay (s/veh)	0.0	2.5	71.7
Lane LOS		A	F
Approach Delay (s/veh)	0.0	2.5	71.7
Approach LOS			F

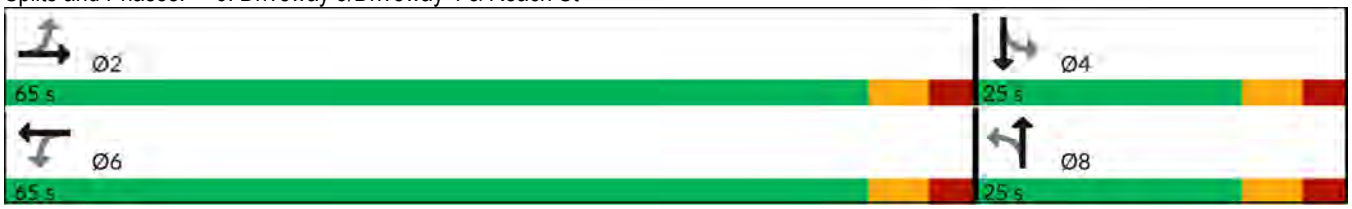
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	639	58	159	601	33	86	0	110	33	0	24
Future Volume (vph)	24	639	58	159	601	33	86	0	110	33	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	121.0		0.0	171.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	70.0			70.0			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.992			0.924			0.943	
Flt Protected	0.950			0.950				0.979			0.972	
Satd. Flow (prot)	1789	1861	0	1789	1868	0	0	1666	0	0	1688	0
Flt Permitted	0.334			0.294				0.830			0.664	
Satd. Flow (perm)	629	1861	0	554	1868	0	0	1413	0	0	1153	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			6			65			48	
Link Speed (k/h)		50			70			20			20	
Link Distance (m)		249.1			826.4			316.3			308.1	
Travel Time (s)		17.9			42.5			56.9			55.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	695	63	173	653	36	93	0	120	36	0	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	758	0	173	689	0	0	213	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	58.0	58.0		58.0	58.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	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	
Act Effct Green (s)	59.4	59.4		59.4	59.4			13.8			13.8	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.16	
v/c Ratio	0.06	0.60		0.46	0.54			0.77			0.28	
Control Delay (s/veh)	6.2	10.6		12.4	9.6			42.2			16.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	6.2	10.6		12.4	9.6			42.2			16.1	
LOS	A	B		B	A			D			B	
Approach Delay (s/veh)		10.4			10.2			42.2			16.1	
Approach LOS		B			B			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 87.2			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 14.0		Intersection LOS: B	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Driveway 3/Driveway 4 & Reach St





Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	26	758	173	689	213	62
v/c Ratio	0.06	0.60	0.46	0.54	0.77	0.28
Control Delay (s/veh)	6.2	10.6	12.4	9.6	42.2	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.2	10.6	12.4	9.6	42.2	16.1
Queue Length 50th (m)	1.3	60.0	12.0	51.6	23.3	2.0
Queue Length 95th (m)	4.4	103.2	30.9	88.0	46.9	12.3
Internal Link Dist (m)		225.1		802.4	292.3	284.1
Turn Bay Length (m)	121.0		171.0			
Base Capacity (vph)	428	1270	377	1274	343	276
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.60	0.46	0.54	0.62	0.22

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	639	58	159	601	33	86	0	110	33	0	24
Future Volume (vph)	24	639	58	159	601	33	86	0	110	33	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.92			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1789	1860		1789	1869			1666			1689	
Flt Permitted	0.33	1.00		0.29	1.00			0.83			0.66	
Satd. Flow (perm)	628	1860		553	1869			1412			1155	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	695	63	173	653	36	93	0	120	36	0	26
RTOR Reduction (vph)	0	3	0	0	2	0	0	55	0	0	40	0
Lane Group Flow (vph)	26	755	0	173	687	0	0	158	0	0	22	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	59.4	59.4		59.4	59.4			13.8			13.8	
Effective Green, g (s)	59.4	59.4		59.4	59.4			13.8			13.8	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.16	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	427	1267		376	1273			223			182	
v/s Ratio Prot		c0.41			0.37							
v/s Ratio Perm	0.04			0.31				c0.11			0.02	
v/c Ratio	0.06	0.60		0.46	0.54			0.71			0.12	
Uniform Delay, d1	4.6	7.5		6.5	7.0			34.8			31.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	2.1		4.0	1.6			9.9			0.3	
Delay (s)	4.9	9.5		10.5	8.7			44.7			31.8	
Level of Service	A	A		B	A			D			C	
Approach Delay (s/veh)		9.4			9.0			44.7			31.8	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Appendix Q

Intersection Location – Correspondence

From: Krista Boyce
To: Adrian Soo
Cc: Allyssa Hrynyk; Rickwannopdevelopments@gmail.com
Subject: Reach Street Background Information - No. 2
Date: January 7, 2026 3:56:21 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
Reach St Intersection Locations-Fig 1.0.pdf

Hi Adrian,

Further to my previous email, here is an email from Aaron Christie regarding our revised intersection locations. The distance between the intersections has been adjusted slightly from this plan, but this is close to what we ended up proposing. It includes some comments on the central intersection.

Regards,
Krista

Krista Boyce, P. Eng.

Sabourin Kimble & Associates Ltd.
110 Old Kingston Road
Pickering Village
Ajax, Ontario
L1T 2Z9

Phone: (905) 426-9451 ext. 261
Mobile: (905) 621-6887

SKA SABOURIN KIMBLE & ASSOCIATES LTD. CONSULTING ENGINEERS

From: Aaron Christie <Aaron.Christie@durham.ca>
Sent: Thursday, May 2, 2024 11:47 AM
To: Krista Boyce <kboyce@skaengineering.com>; Rick Wannop (rickwannopdevelopments@gmail.com) <rickwannopdevelopments@gmail.com>
Cc: Don Given <DGiven@mgp.ca>; Glyn Reedman <Glyn.Reedman@Durham.ca>
Subject: FW: Reach Street Lands

Hello Krista and Rick,

Thank you very much for sending this through and for helping us with this.

Based on the previous work I am satisfied that the space provided for the water tower, bulk water filling

station and Waste facility driveway realignment will all work with the Proposed East Road 4 way intersection.

The distance from Sherrington and Old Simcoe will also work for the anticipated signalized 4-way intersection at proposed East Road and Reach Street. Glyn has noted, that 205m Decision Sight Distance can be met with the East Road location as shown. This will need to be confirmed via the future traffic study for the subdivision, but based on the profile shown it looks to be acceptable.

We do not see any concerns related to the proposed West Road location at this time.

The Central Road is shown only 227m away from the proposed East Road. This would be too close to ever operate as a signalized intersection. It may work if it was never going to be signalized. As proposed, it will also have issues in conflicting with existing driveways that need to be addressed. It may be best to move this road to the west. These are points you should be considered as you move forward with preparing your Draft Plan and supporting traffic study.

Based on this, I will move forward with our Real Estate Division on the next steps on our end. We will get a Draft R-Plan put together for the North side of Reach Street and get an Appraiser on board.

Rick, do you have a Legal Surveyor active on your project. It may be best if I can find a way to work with the same company to help ensure that everything is well coordinated.

Thanks again for the continued cooperation. Let us know if you have any questions.

Aaron Christie, P.Eng.| Senior Project Engineer
Water & Wastewater Infrastructure Planning |Works Department
The Regional Municipality of Durham | **Celebrating 50 years!**
Aaron.Christie@durham.ca| 905-668-4113 extension 3608 | durham.ca
My pronouns are he/him. | durham.ca/50years

From: Krista Boyce <kboyce@skaengineering.com>
Sent: Tuesday, April 2, 2024 2:15 PM
To: Aaron Christie <Aaron.Christie@durham.ca>; Glyn Reedman <Glyn.Reedman@Durham.ca>
Cc: Rickwannopdevelopments@gmail.com; Don Given <dgiven@mgp.ca>
Subject: Reach Street Lands

Hi Aaron and Glyn,

Further to my voicemail message, we have been working with Rick and Don to locate the proposed intersections for the Reach Street Lands at a spacing that takes into account sight lines and works for both the Concept Plan on the south side and the proposed transfer station/water tower on the north side. Please find attached a sketch illustrating the 3 proposed intersections in both plan and profile. We recognize that the spacing between the East Road and the Central Road does not meet the Region's preferred spacing of 300m, however, the 227m spacing places the Central Road closer

to the crest for better sight lines, and also places it directly adjacent to the lands owned by others.

Please review and provide us with any comments you may have. We would be happy to meet with both of you to discuss further.

Regards,
Krista

Krista Boyce, P. Eng.

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SKA SABOURIN KIMBLE & ASSOCIATES LTD. CONSULTING ENGINEERS

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