Traffic Impact Study

6360 Regional Road 25

Excelligent Care

28 November 2023

The Power of Commitment

Executive summary

GHD is pleased to provide the following revised Traffic Impact Study in support of the proposed long-term care facility with ground floor retail/office located on lands municipally known as 6360 Regional Road 25 in the Town of Milton. This update addresses comments received from the Town and Region based on first submission report dated April 2023.

This report determines the site related traffic and subsequent traffic related impacts on the adjacent road network during the weekday a.m. and p.m. peak hours. These impacts are based on the projected future background traffic and road network conditions derived for a 2025 and 2030 future planning horizon year.

The proposed site plan consists of a long-term care facility with 192 beds and 13,082.89 ft^2 of commercial retail/office GFA. Access to the development is proposed via a right-in/right-out driveway along Regional Road 25.

Based on ITE Trip Generation rates, the proposed development is expected to generate a total of 75 new two-way trips during the weekday a.m. peak hour consisting of 46 inbound and 29 outbound trips and 140 new two-way trips during the weekday p.m. peak hour consisting of 65 inbound and 75 outbound trips.

All existing intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2025 future background conditions, with the addition of corridor growth and background development traffic, all intersections continue to operate with acceptable v/c ratios and levels of service with the exception of Louis St. Laurent Avenue and Regional Road 25 reporting elevated overall v/c ratios of 0.88 LOS D during the a.m. peak hour and 0.82 LOS D during the p.m. peak hour.

With the addition of site generated traffic under the 2025 future total traffic condition, all intersections continue to operate at satisfactory levels with the intersection of Louis St. Laurent Avenue and Region Road 25 continuing to operate at a critical level (0.91 LOS D during the a.m. peak hour and 0.85 LOS D during the p.m. peak hour).

Under the 2030 future background traffic conditions, with the addition of corridor growth, background development traffic, and planned road widening of Regional Road 25, all intersections continue to operate with acceptable v/c ratios and levels of service with the exception of Louis St. Laurent Avenue and Regional Road 25 reporting an overall v/c ratio of 0.93 LOS D during the a.m. peak hour and 0.88 LOS D during the p.m. peak hour.

With the addition of site generated traffic under the 2030 future total traffic condition, all intersections continue to operate at satisfactory levels the intersection of Louis St. Laurent Avenue and Region Road 25 continuing to operate at a critical level (0.96 LOS D during the a.m. peak hour and 0.91 LOS D during the p.m. peak hour).

The overall impact of the development generated traffic was found to be minor to the operation of the study area intersections and traffic flow along Regional Road 25, Louis St. Laurent Avenue and all other study area roadways.

Application of the current Town of Milton's Zoning By-law to the proposed development results in a minimum requirement of 125 parking spaces for the long-term care facility, including 5 barrier free spaces.

The subject site provides a total of 105 parking spaces and 8 barrier free spaces. Based on proxy site data, it was determined that the plazas had a peak parking demand of 3.27 parking spaces per 100 m^2 of GFA. Application of the proxy survey data to the subject site would result in a requirement of 40 parking spaces. Based on the minimum requirement of 65 long-term care spaces and 40 retail/office spaces, the total parking supply of 105 parking spaces would be sufficient.

An access review was completed for the proposed site access onto Regional Road 25. The proposed site access satisfies the Region's Access Management Guidelines for driveway width and driveway radii. The access requirements in the Region's Access Management Guidelines provides minimum and maximum dimensions for residential, commercial and industrial land uses in urban and rural environments. The site access is required to have a minimum width of 4.5 metres and a maximum width of 9.0 metres, and the curb return radii is required to have a minimum radius of 3 metres and a maximum radius of 16 metres. The site access has a width of 6.9 metres and curb return radii of 9 metres, satisfying the Region's requirements.

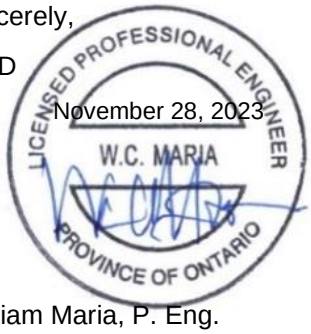
Halton Region's Access Management Guidelines require a minimum spacing for a right in/out access on a regional road to be 115 metres. The site access is located a minimum of 115 metres from the intersection of Louis St. Laurent to the north and Izumi Gate to the south and turn restrictions are enforced via a raised centre median on Regional Road 25.

A Vehicle Swept Path Analysis was undertaken to assess the site's ability to accommodate the required turning movements of a waste collection truck, MSU Truck, and an emergency vehicle as per TAC design guidelines and confirmed that the site accesses, fire route and loading areas can accommodate the aforementioned design vehicles with no conflicts.

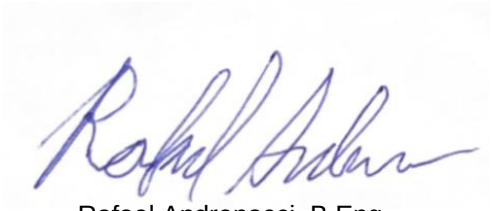
We trust that this satisfies your requirements, but do not hesitate to contact the undersigned if you have any questions.

Sincerely,

GHD



November 28, 2023



William Maria, P. Eng.
Transportation Planning Lead

Rafael Andrenacci, B.Eng
Transportation Planner

Contents

Table index

Figure index

Appendices

1. Introduction

1.1 Retainer and Objective

GHD Limited was retained to prepare a Traffic Impact Study in support of the proposed long-term care facility located on lands municipally known as 6360 Regional Road 25 in the Town of Milton.

The site location is illustrated in **Figure 1**.

The purpose of this study is to:

- Establish baseline traffic conditions for the study area in 2023 and determine future background operating conditions for a future planning horizon in 2025 and 2030.
- Utilize Institute of Transportation Engineer's (ITE) Trip Generation data and first principles to estimate the site trips generated by the proposed development and distribute the traffic to the adjacent road network.
- Determine future operating traffic conditions during the weekday peek periods through intersection capacity analysis.
- Review the proposed site plan and access design and compare to the Region and Town's design standards.

1.2 Study Team

The GHD team involved in the preparation of the study are:

- William Maria, P. Eng., Transportation Planning Lead
- Rafael Andrenacci, B.Eng., Transportation Planner

Figure 1 Site Location

2. Site Characteristics

2.1 Study Area

Based on the approved Terms of Reference for the study provided in **Appendix A**, the following intersections were included in the study area:

- Regional Road 25 and Louis St. Laurent Avenue
- Regional Road 25 and Izumi Gate
- Regional Road 25 and Whitlock Avenue
- Regional Road 25 and the proposed site access

2.2 Proposed Development Content

A site plan was prepared by Anderson Wellsman Architects Inc. and is shown in **Figure 2**. The proposed long-term care facility consists of a total of 192 long-term care beds and 13,082.89 ft^2 of ground floor commercial retail/office GFA.

Access to the subject site is proposed via a right-in/right-out access on Regional Road 25 and will be restricted by a raised centre median on Regional Road 25 extending a minimum of 45 metres from each access curb return.

Figure 2 Proposed Site Plan

3. Existing Conditions

3.1 Existing Road Network

Regional Road 25 is a north/south major road under the jurisdiction of the Region of Halton. Within the study area it has a four-lane cross-section. Its intersection with Louis St. Laurent is signalized with an auxiliary left-turn lane and right-turn lane in the northbound and southbound direction. Its intersection with Izumi Gate is a T-intersection operating as a right-in/right-out. The intersection with Whitlock Avenue is a signalized intersection with an auxiliary left-turn and right-turn lane in the northbound and southbound direction. The posted speed limit along Regional Road 25 is 70 km/h.

Louis St. Laurent Avenue is an east/west minor arterial road under the jurisdiction of the Town of Milton. Within the study area it has a four-lane cross-section. Its intersection with Regional Road 25 is signalized with an auxiliary left-turn lane in the eastbound and westbound direction. The posted speed limit along Louis St. Laurent Avenue is 60 km/h.

Izumi Gate is an east/west local road under the jurisdiction of the Town of Milton. Within the study area it has a two-lane cross-section. Its intersection with Regional Road 25 is an unsignalized T-intersection with access onto Regional Road 25 provided via right-in/right-out. The assumed posted speed limit along Izumi Gate is 50 km/h.

Whitlock Avenue is an east/west local road under the jurisdiction of the Town of Milton. Within the study area it has a four-lane cross-section. Its intersection with Regional Road 25 is signalized with an auxiliary left-turn lane in the eastbound and westbound direction and an auxiliary right-turn lane in the westbound direction only. The assumed posted speed limit along Whitlock Avenue is 50 km/h.

The existing lane configurations are shown in **Figure 3**.

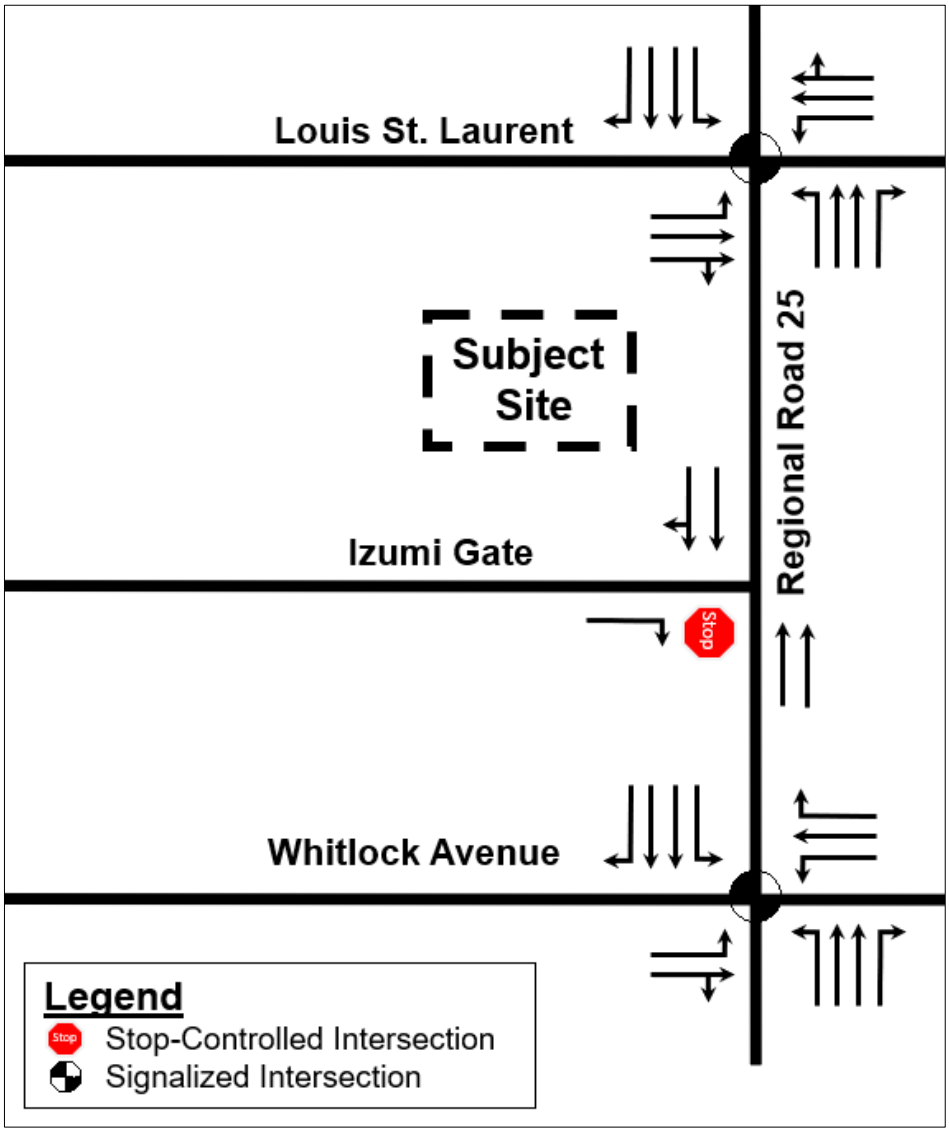


Figure 3 Existing Intersection Lane Configurations

3.2 Existing Pedestrian and Cycling Facilities

The following pedestrian infrastructure is currently available within the study area:

- Regional Road 25 - sidewalk provided only along the east side of the road from Louis St. Laurent towards the south and the southern limit of the study area. A multi-use path is provided along both sides of Regional Road 25 north of Louis St. Laurent Avenue.
- Louis St. Laurent Avenue – Multi-use path provided on both sides of the road throughout the study area.
- Izumi Gate - pedestrian sidewalks along both sides of the road.
- Whitlock Avenue - pedestrian sidewalk along the north side and multi-use path provided along the south side.

A bike lane is provided along Louis St. Laurent Avenue and Whitlock Avenue.

All existing pedestrian and cycling amenities within the study area are illustrated on **Figure 4**.

Figure 4 Existing Active Transportation Plan

3.3 Existing Transit Service

Milton Transit currently offers transit service along Route 9 (Ontario South) within the study area. The route operates in a general north/south direction along Ontario Street/Regional Road 25 from Milton Station in the north, via Main Street East in the east/west direction, and to Britannia Road in the south.

The subject site is also located within the Boyne Zone 1 OnDemand Service Area. As described on their website, Milton Transit OnDemand is a flexible, shared-ride service that allows people to book their ride via their mobile website to travel within the specified zone or to a specific transfer point.

The service runs from 5:15 a.m. to 10:11 p.m. during the weekdays and from 7:10 a.m. to 7:40 p.m. on Saturdays, and uses the same fare as Milton Transit

Route 9 and the bus stops adjacent to the subject site are shown in the figure below.

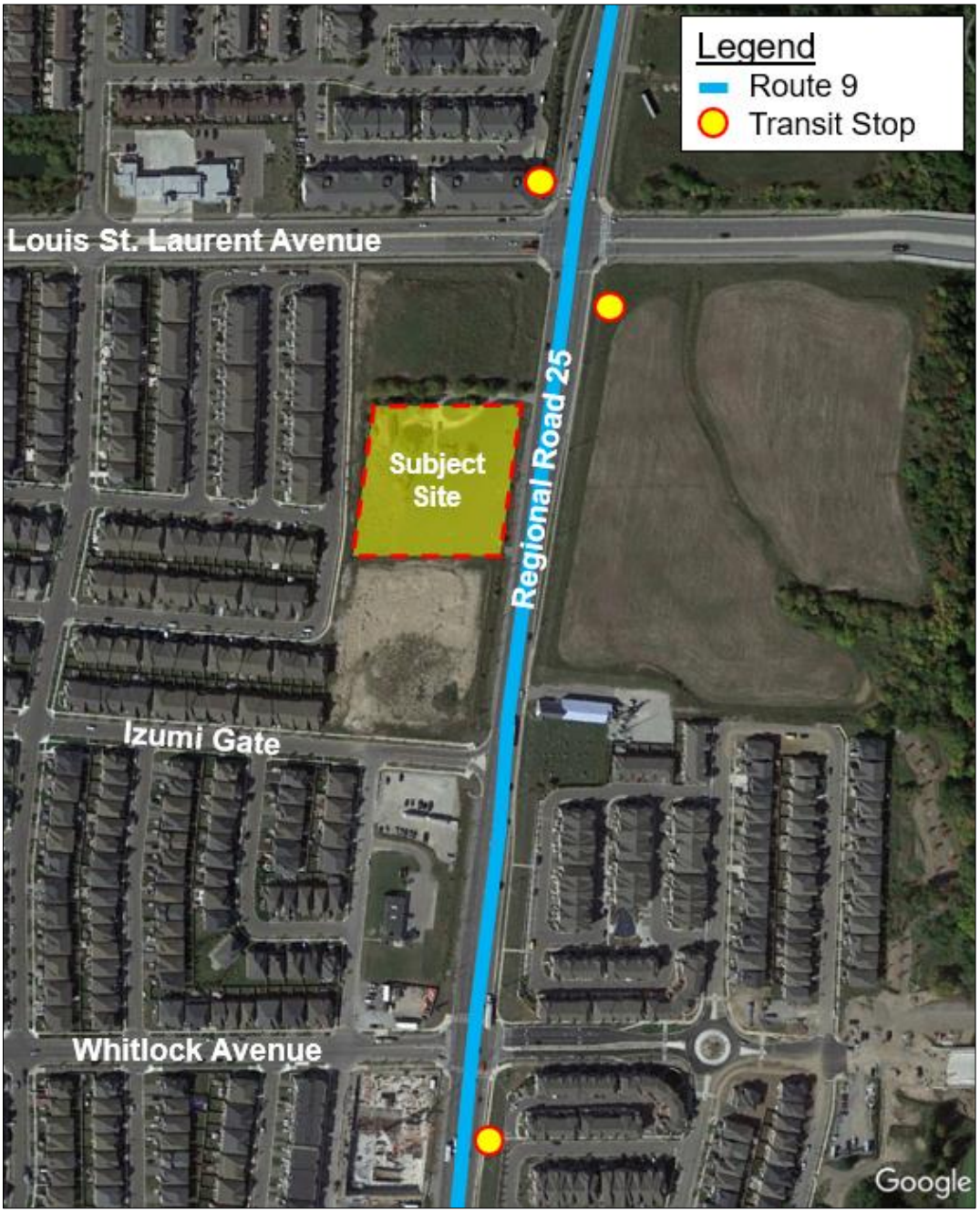


Figure 5 Existing Transit Routes and Stop Locations

3.4 Existing Traffic Data

GHD contracted Spectrum Traffic Data Inc. to collect turning movement counts at the three study intersections of site, with the counts completed in March 2023.

The existing 2023 traffic volumes for the a.m. and p.m. peak hours are summarized in **Figure 6** with the full turning movement count data provided in **Appendix B.**

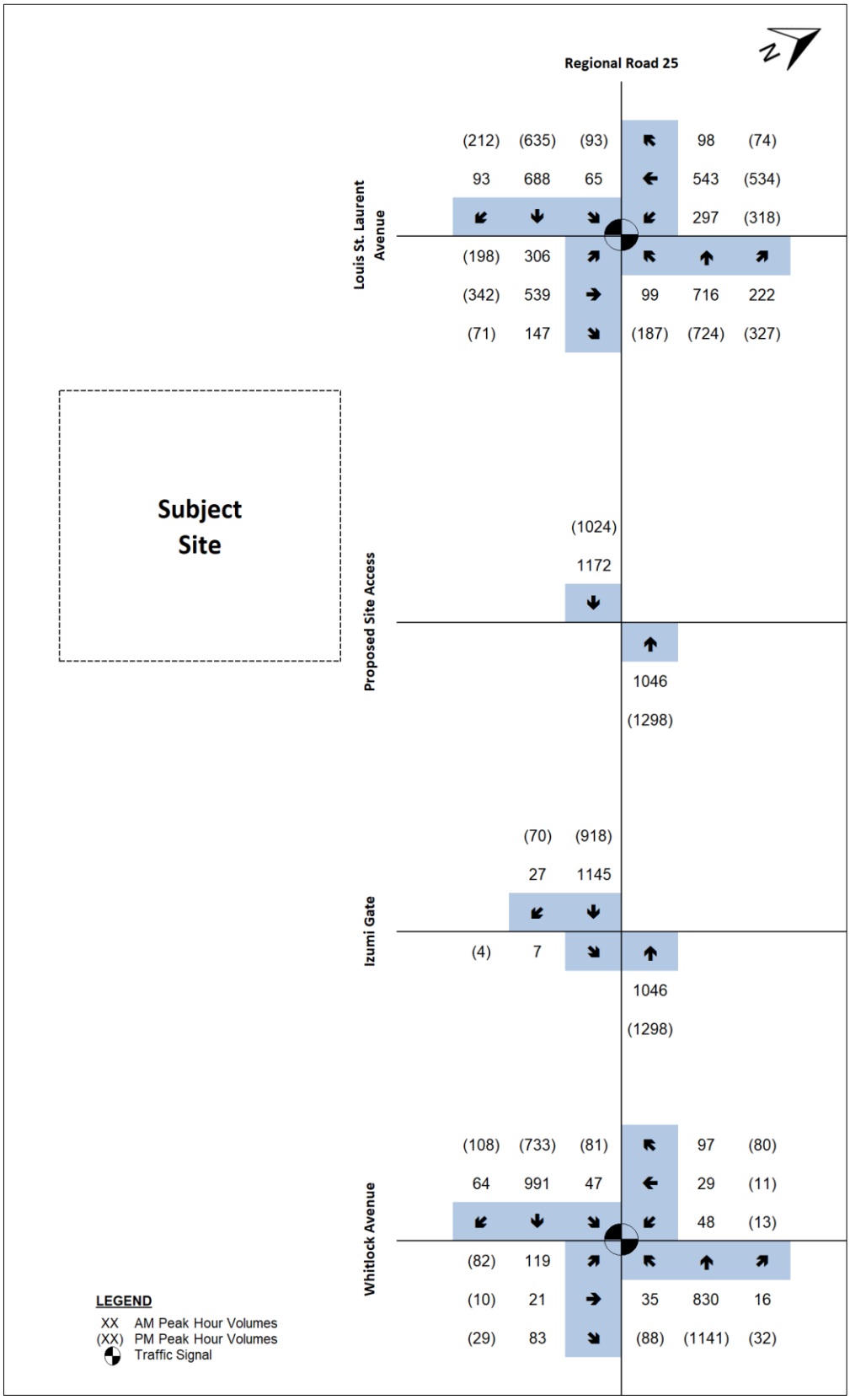


Figure 6 Existing 2023 Traffic Volumes

4. Future Background Traffic

4.1 Study Horizon Year

The future horizon years of 2025 and 2030 were selected for analysis of future traffic conditions, consisting of the year of full build-out and 5 years post-build-out.

4.2 Roadway Improvements

As identified by Region staff through the terms of reference, the Halton Region's Transportation Master Plan identified the need to widen Regional Road 25 to six lanes from Speers Road to Derry Road, with construction currently scheduled to begin in 2027. As informed and directed by Region staff, it is reasonable to assume that the road widening construction for this segment may take a couple of years at minimum and should only be accounted for under the 2030 horizon year only.

The future lane configuration under the 2030 horizon year is shown in **Figure 7** below. The lane configuration under the 2025 horizon year remains unchanged from the existing condition.

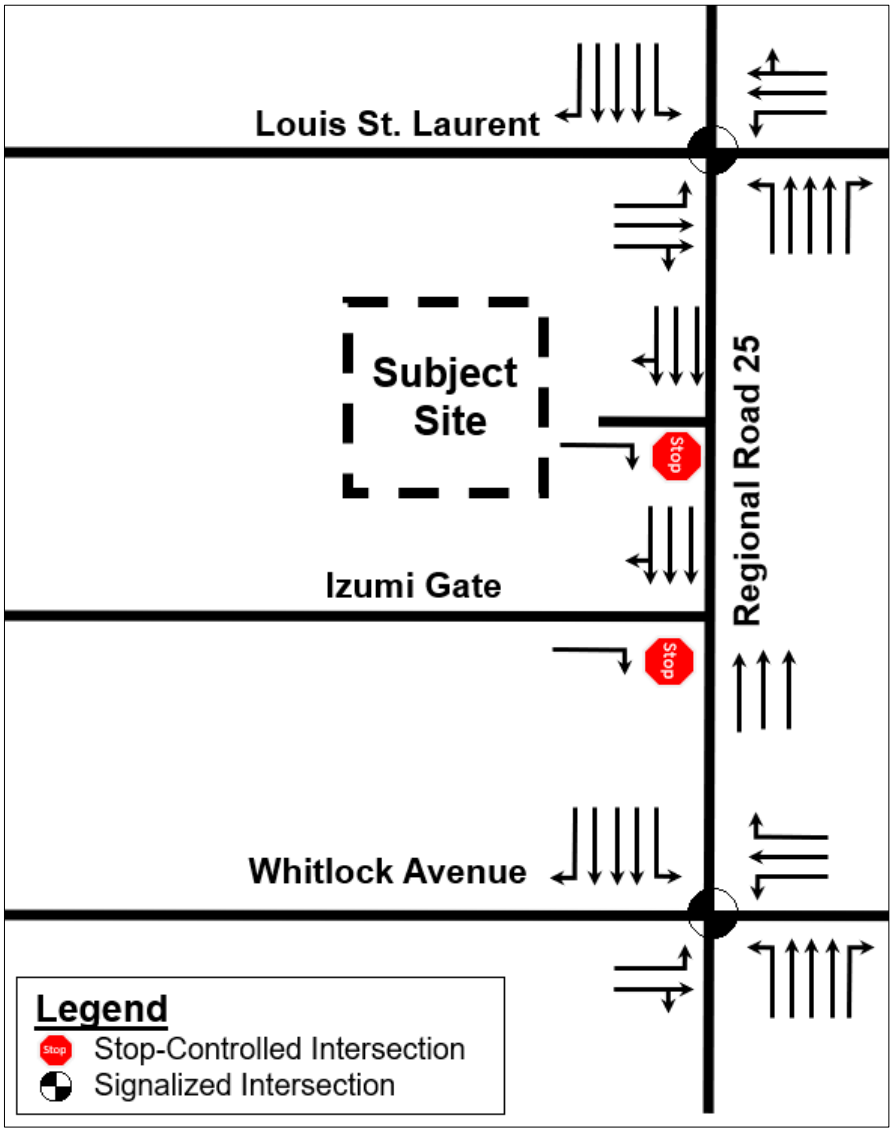


Figure 7 Future Lane Configuration (2030)

4.3 Corridor Growth

As directed by Town and Region staff, GHD applied a 2 percent per annum growth rate to all study roads except for Izumi Gate under the 2025 horizon year. As directed by Region staff, to account for the future Regional Road 25 widening, a growth rate of 3.8% compounded annually was applied to the 2025 projected volumes to forecast the 2030 volumes for the through volumes along Regional Road 25 only. The remaining roadways and movements continue to apply the 2% growth rate to establish the 2030 background volumes.

4.4 Background Developments

Site traffic estimated for the following developments were included as background developments as an estimate of the future traffic volumes and possible traffic redistribution within the study area. Town and Region staff identified the following background developments to include in the future background traffic forecasts:

- Block north of site: Although there currently has been no formal application, City staff have identified the land as being zoned for high density residential, institutional and office uses with a maximum permissible GFA of 27,201 sq.m. (292,789 sq.ft)
- Block south of site: Although there currently has been no formal application, City staff have identified the land as being zoned for medium/high density residential, and office uses. with a maximum permissible GFA of 31,878 sq.m. (343,131 sq.ft)
- Primont Homes residential subdivision 24T-14004/M (fronting Britannia Road, east of Regional Road 25)
- Fernbrook residential development Z-10/20 (fronting Britannia Road, east of Regional Road 25)
- West Country Milton Properties Residential Major Node Z-21/21 (south-west corner of Regional Road 25 and Whitlock Avenue)
- Gulfbeck Developments Residential Major Node Z-11/20 (south-west corner of Regional Road 25 and Whitlock Avenue)
- Sixteen Mile Creek residential subdivision 24T-20007/M at 6439 Regional Road 25 (north-east corner of Regional Road 25 and Louis St. Laurent Avenue)

The location of the proposed background developments are illustrated in **Figure 8**.

Figure 8 Background Development Locations

The background developments are expected to be fully built-out by the 2025 horizon year.

Table 1 below provides a summary of the weekday a.m. and p.m. peak hour sites trips generated by each development extracted from their respective traffic studies. The trip generation from the respective traffic impact studies are provided in **Appendix C**.

Table 1 Background Development Site Traffic

Background Development	Unit Count	Peak Hour Trips					
		Weekday AM			Weekday PM		
		In	Out	Total	In	Out	Total
Block north of the site, requested by Town staff	zoned for high density residential, institutional and office uses with a maximum permissible GFA of 27,201 sq.m. (292,789 sq.ft)	211	68	279	78	200	278
Block south of the site, requested by Town staff	zoned for medium/high density residential, and office uses. with a maximum permissible GFA of 31,878 sq.m. (343,131 sq.ft)	247	81	327	91	235	326
Primont Homes residential subdivision 24T-14004/M	153 single-family dwelling units, 214 townhouse units, and 388 high-rise dwelling units	72	222	294	225	140	365
Fernbrook residential development Z-10/20	254-unit stacked townhouse development	22	63	85	66	42	108
West Country Milton Properties Residential Major Node Z-21/21	227 mid-rise dwelling units	21	61	82	61	39	100
Gulfbeck Developments Residential Major Node Z-11/20	103 mid-rise dwelling units	10	27	37	28	18	46
Sixteen Mile Creek residential subdivision 24T-20007/M	276 mid-rise dwelling units (3 6-storey buildings)	25	74	99	74	47	119

The total background development traffic is summarized in **Figure 9**.

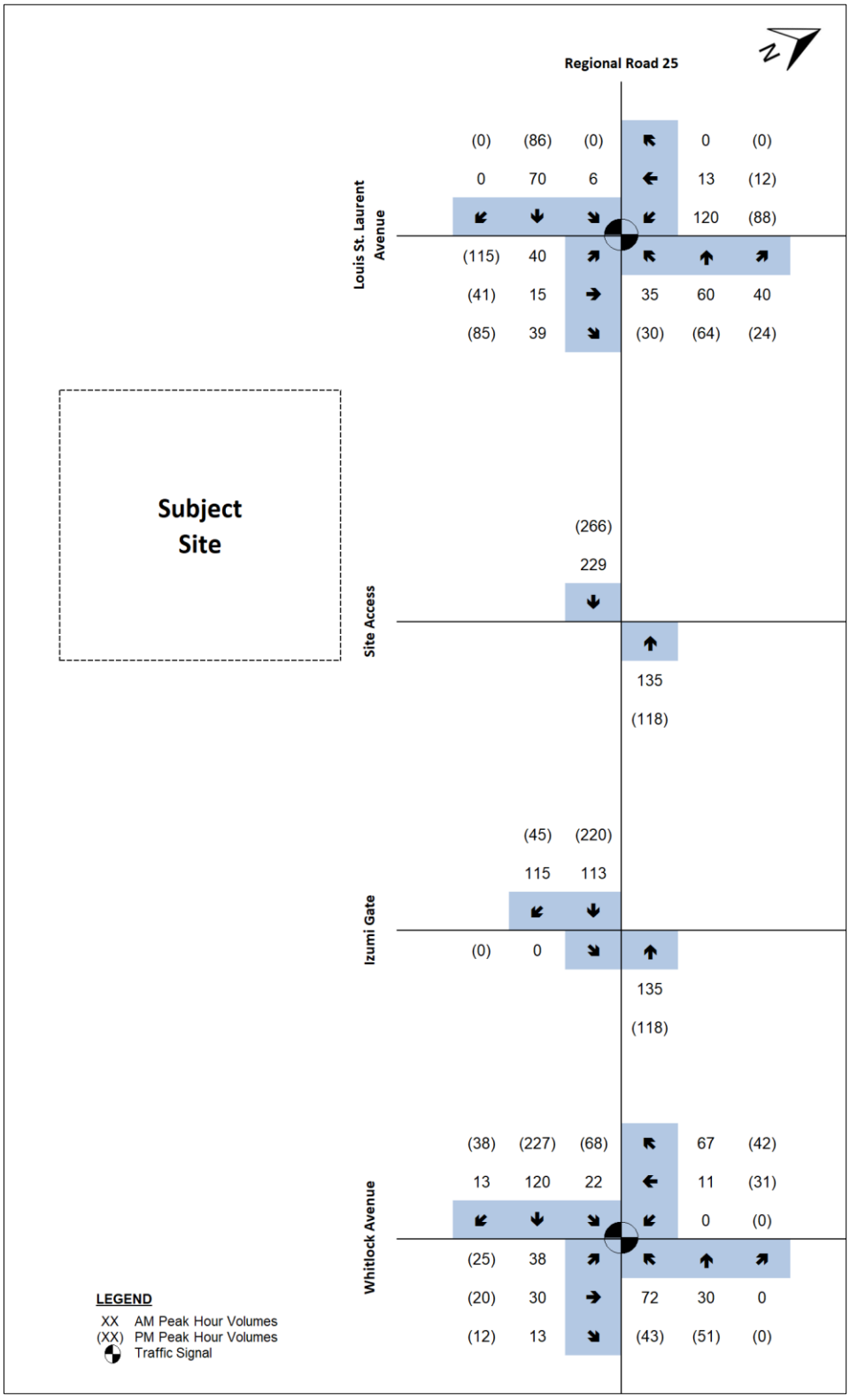


Figure 9 Total Background Development Site Traffic

4.5 Future Background Traffic Volumes

The background traffic volumes for the 2025 and 2030 horizon year were derived by applying the aforementioned corridor growth rate to the baseline 2023 traffic volumes and adding the background development traffic.

The resulting 2025 and 2030 future background traffic volumes are summarized in **Figure 10** and **Figure 11**.

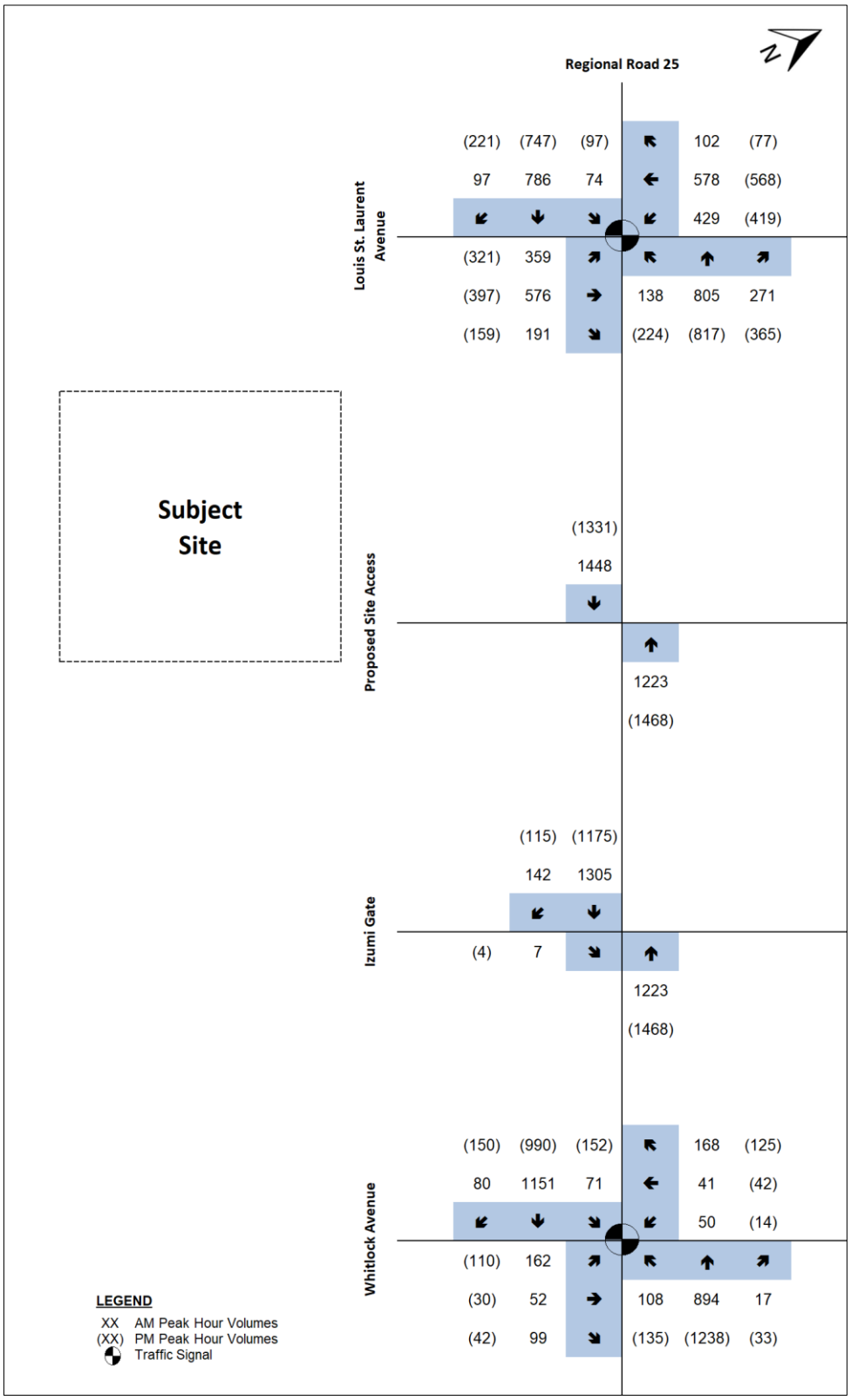


Figure 10 2025 Future Background Traffic Volumes

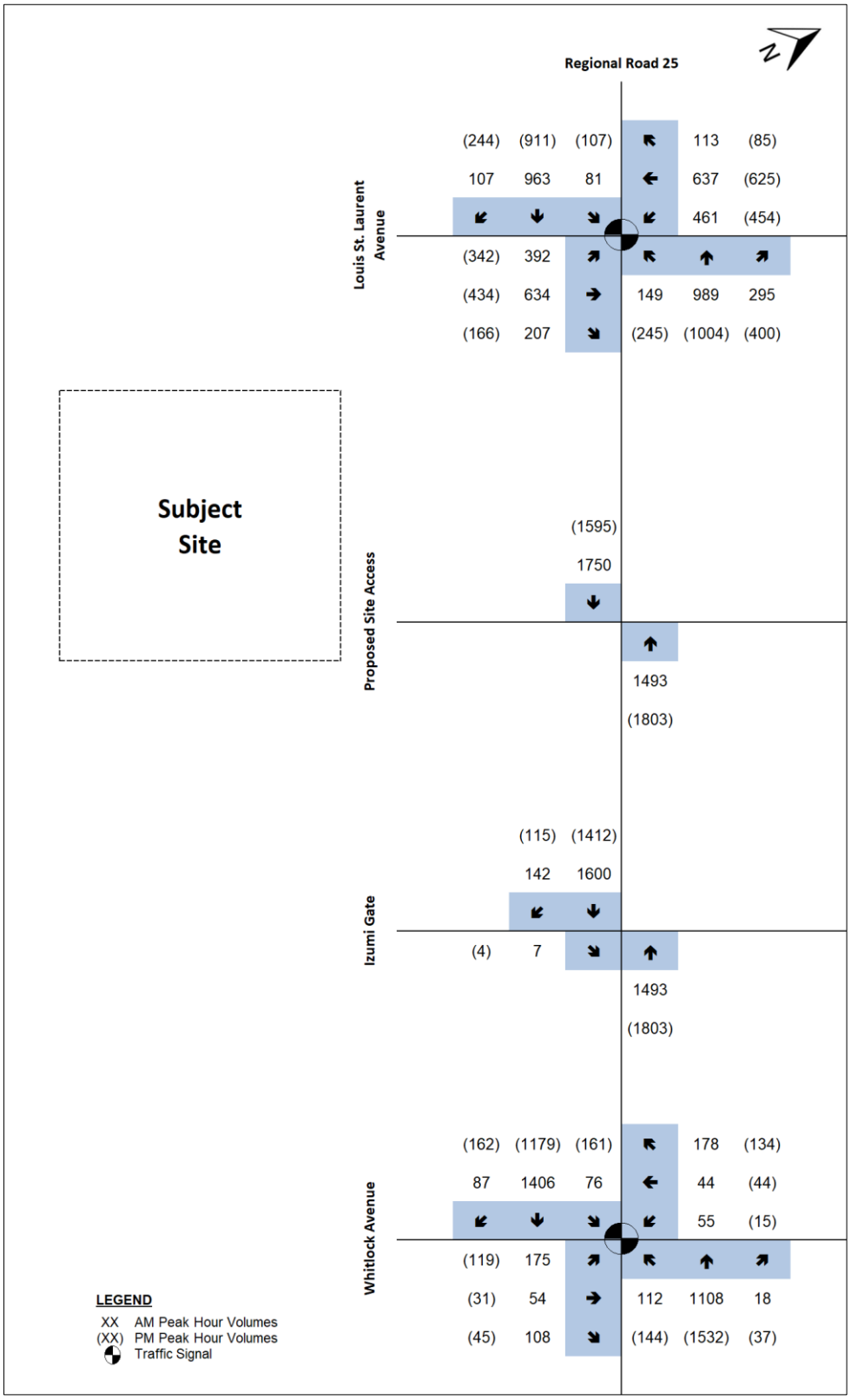


Figure 11 2030 Future Background Traffic Volumes

5. Site Generated Traffic

5.1 Site Traffic Generation

The proposed long-term care facility includes 192 beds and 13,082.89 ft^2 of ground floor commercial retail/office GFA.

The trip generation for the residential uses were calculated using rates provided in the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 11th Edition using Land Use Code (LUC) 254 (Assisted Living) for the 192 long-term care beds and both LUC 822 (retail) and LUC 710 (office) for the ground floor commercial. The breakdown between the office and retail space is currently unknown, and as a result the trip generation was completed based on the total GFA for both uses with the highest inbound and outbound for both peak hours used from either land use used in the analysis.

For each of the proposed land uses, GHD compared the average rates to the fitted curve equation and adopted the rate that generated the highest volume of site trips for a more conservative analysis.

As directed by Town staff, no trip reductions are applied to the site trip generation based on the existing/proposed TDM measures to conduct a conservative analysis.

The office/retail component will not be entirely ancillary to the long-term care facility and therefore trip generation was completed separately for these uses. However, there is expected to be synergy between the long-term care facility and the office/retail uses, resulting in the following trip generation providing a more conservative estimate for the site's trip generation.

Table 2 below summarizes the estimated trip generation for the proposed development.

Table 2 Estimated Site Trips

Land Uses	Beds/ GFA	Parameters	Peak Hour					
			Weekday AM			Weekday PM		
			In	Out	Total	In	Out	Total
Assisted Living (LUC 254)	192 beds	Trip Ratio	60%	40%	100%	39%	61%	100%
		Gross Trips	21	14	35	18	28	46
Retail (LUC 822)	13,082.89 ft^2	Trip Ratio	60%	40%	100%	50%	50%	100%
		Gross Trips	19	**15**	34	**47**	**47**	94
Office (LUC 710)		Trip Ratio	88%	12%	100%	17%	83%	100%
		Gross Trips	**25**	4	29	5	26	31
Total New Primary Trips			***46***	***29***	***75***	***65***	***75***	***140***

Full build-out of the subject site is expected to generate a total of 75 new two-way trips during the weekday a.m. peak hour consisting of 46 inbound and 29 outbound trips and 140 new two-way trips during the weekday p.m. peak hour consisting of 65 inbound and 75 outbound trips.

5.2 Site Traffic Distribution and Assignment

The distribution of the site-generated traffic was based primarily on first principles and identifying possible routing due to the right-in/right-out operation of the intersection. As the 2016 TTS data does not provide data for long-term care

facilities, the trip distribution was primarily based on the existing travel patterns at the intersection of Regional Road 25 and Louis St. Laurent Avenue.

The following assumptions were used to establish the trip assignment due to the restricted movements at the site access:

- Inbound trips would arrive from the north, east, and west from the intersection of Regional Road 25 and Louis St. Laurent Avenue. Inbound trips from the south were distributed evenly between the east and the west along Louis St. Laurent Avenue based on the assumption that they would use the adjacent roads to arrive at the subject site.
- Outbound trips would depart from the site access with trips assigned to the south continuing south through the study area. The trips headed west were assigned to the west along Whitlock Avenue where they continue beyond the study and return to either Louis St. Laurent or continue west along Whitlock. Trips headed to the east were split evenly between Whitlock Avenue and being re-routed to also go south, where they can continue towards the east along Britannia Avenue. Trips heading north were assigned to the east and west along Izumi Gate and Whitlock Avenue where they can continue beyond the study and return to either Louis St. Laurent or continue towards the east along Whitlock beyond the study area to continue their trip north.

The proposed trip distribution is summarized in **Table 3** below.

Table 3 Trip Distribution

Origin/Destination	AM Peak Hour		PM Peak Hour	
	Percentage of Inbound Trips	Percentage of Outbound Trips	Percentage of Inbound Trips	Percentage of Outbound Trips
North (via Izumi Gate and Whitlock Avenue)	22%	N/A	25%	N/A
South (Regional Road 25)	N/A	41%	N/A	38%
East (Louis St. Laurent)	40%	N/A	42%	N/A
West (Louis St. Laurent)	38%	N/A	33%	N/A
East (Whitlock Avenue)	N/A	26%	N/A	24%
West (Whitlock Avenue)	N/A	34%	N/A	39%
Total	**100%**	**100%**	**100%**	**100%**

The estimated site trips generated by the proposed development and distributed to the study area road network for the weekday a.m. and p.m. peak hours are shown in **Figure 12.**

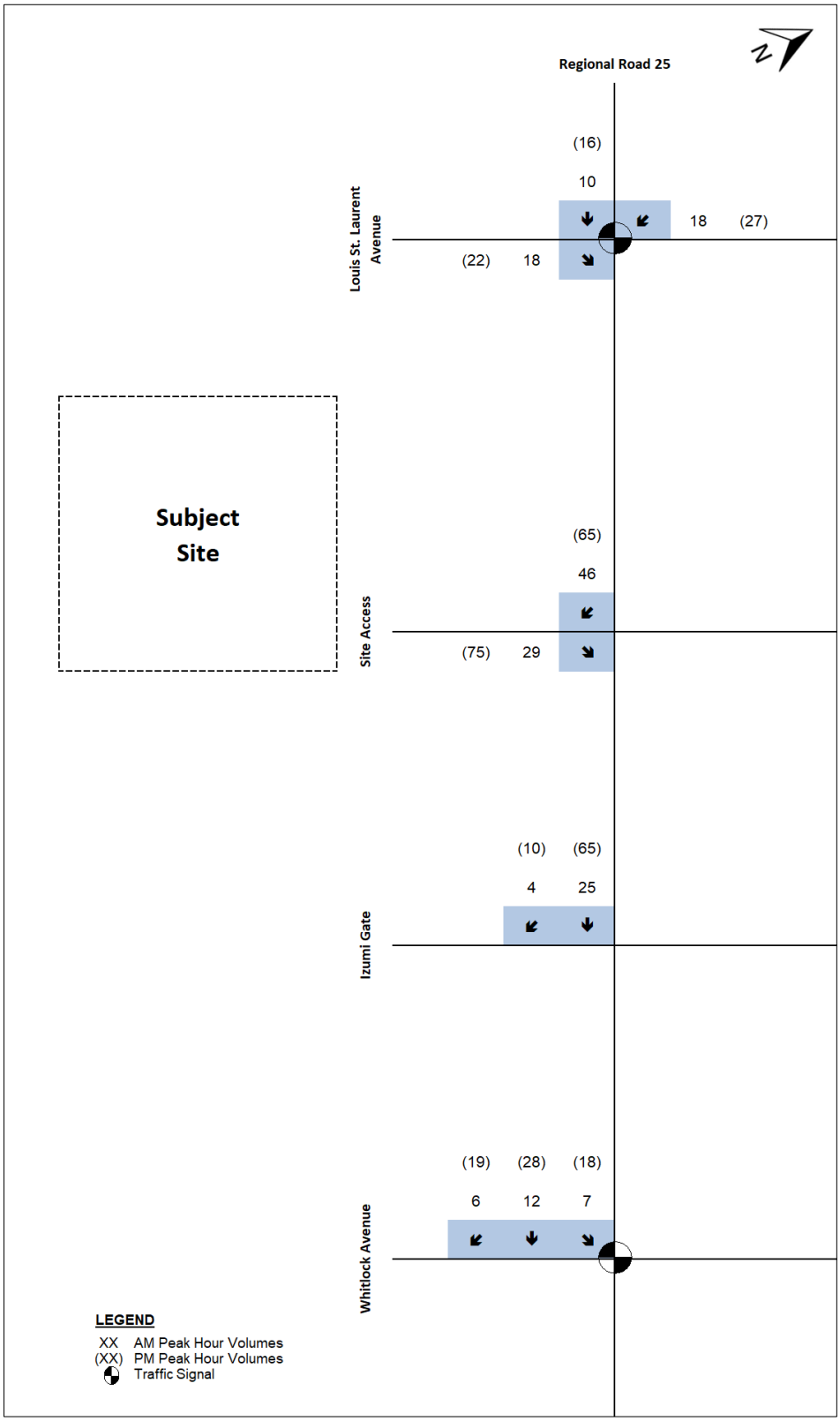


Figure 12 Total Site Trips

6. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2025 and 2030 planning horizons were derived by combining the projected future background traffic with the corresponding estimated site generated traffic. The resulting traffic volumes are presented in **Figure 13** and **Figure 14**

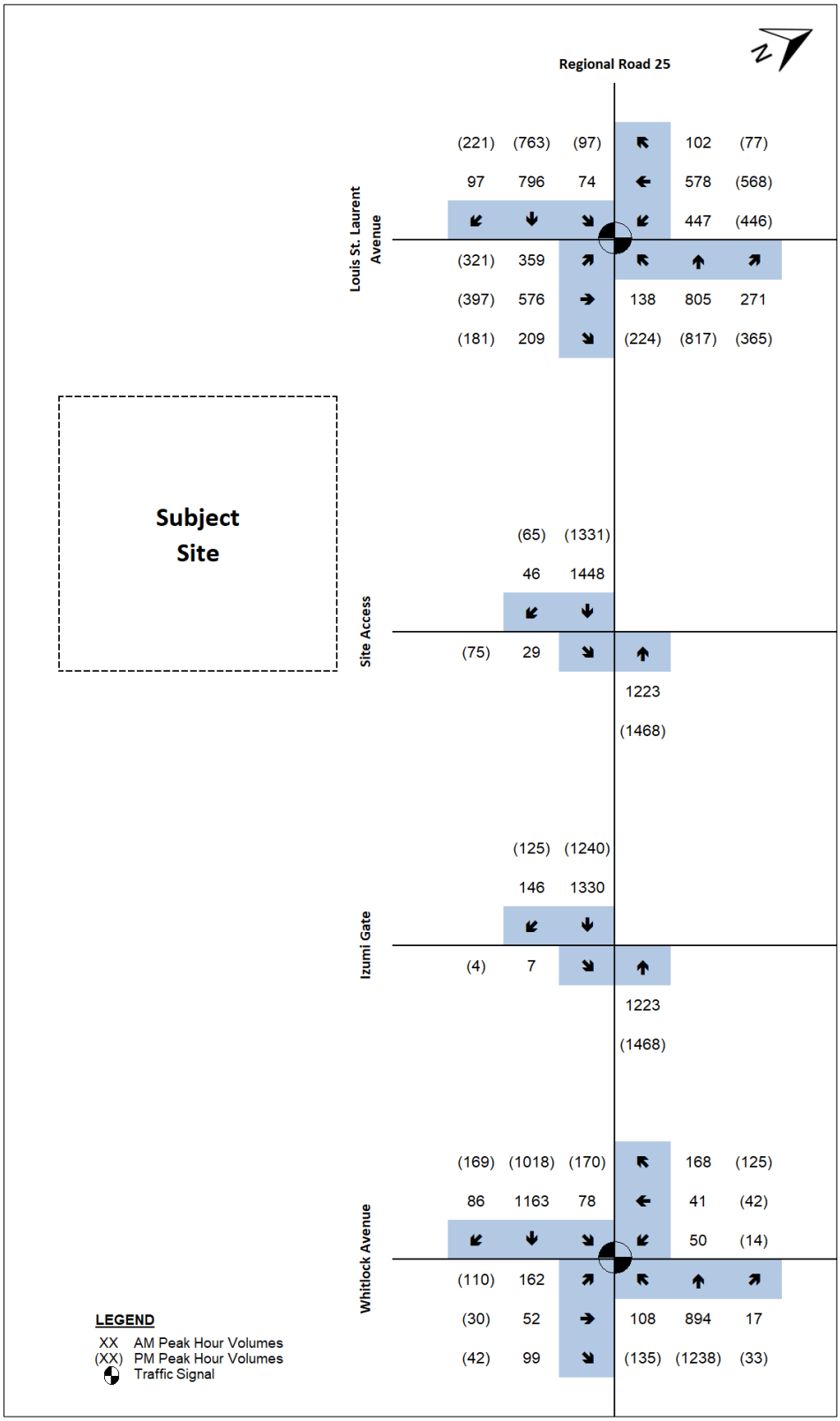


Figure 13 2025 Future Total Traffic Volumes

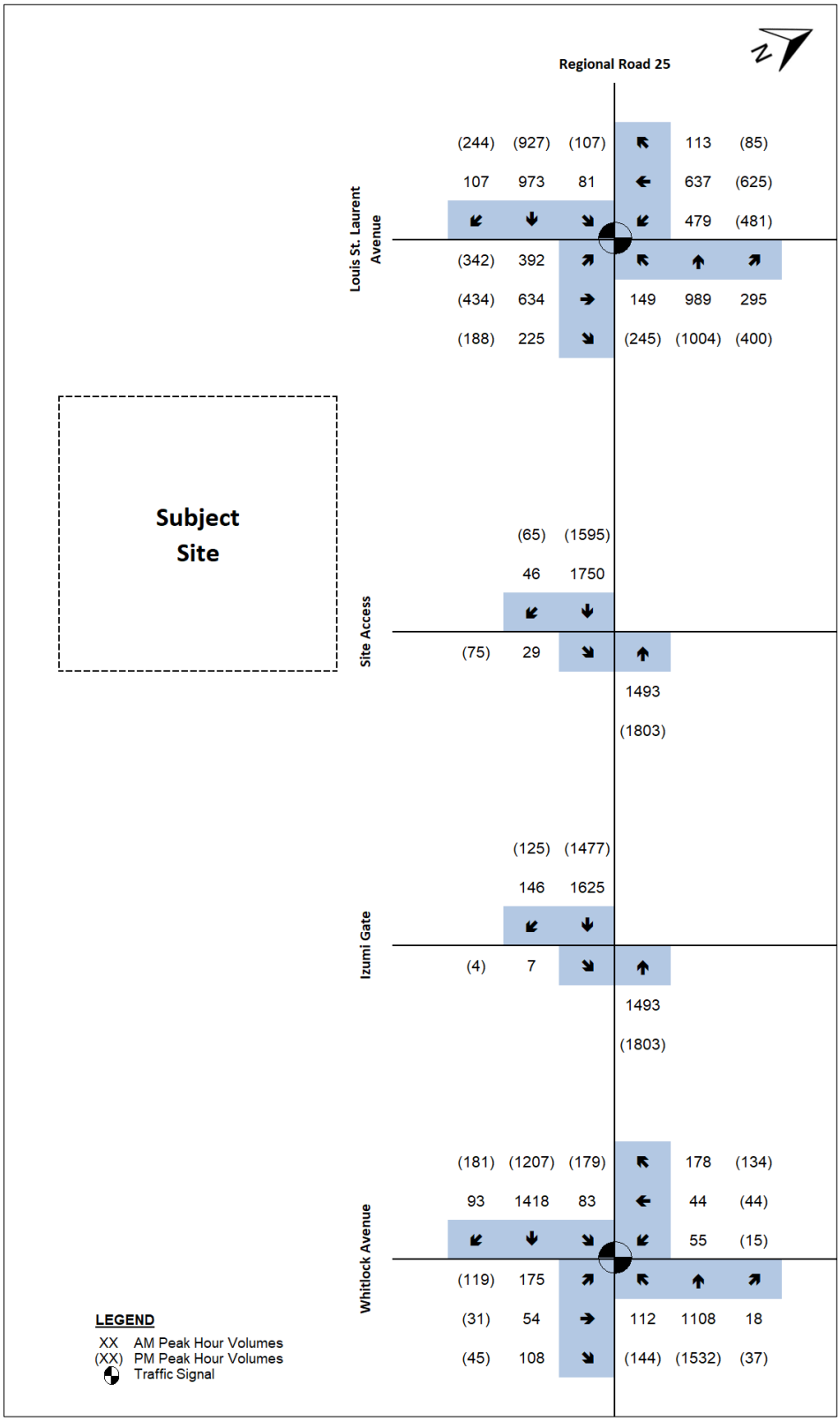


Figure 14 2030 Future Total Traffic Volumes

7. Capacity Analysis

The capacity analysis identifies how well the intersections and driveways are operating. The analysis contained within this report utilized the Highway Capacity Manual (HCM) 2000 procedure within the Synchro Version 10 Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement. Queuing characteristics are reported as the predicted 95th percentile queue for each turning movement. Both pedestrian crossing volumes and heavy vehicle proportions are included in the analyses. The peak hour factors from the traffic counts were used to analyze existing condition and increased to 1.00 for all future traffic conditions.

The analysis includes identification and required modifications and improvements (if any) at intersections where the addition of background growth or background growth plus site-generated traffic volumes causes the following:

'Critical' intersections and movements for a signalized intersection generally include:

- V/C ratios for overall intersections operations, through movements, or shared through/turning movements increase to 0.85 or above;
- V/C ratios for exclusive movements increase to 0.95 or above; or
- 95th percentile queue length for individual movements that are projected to, or exceed, the storage length.

'Critical' intersections and movements for an unsignalized intersection generally include:

- Level of Services (LOS), based on average delay per vehicle, on individual movements exceeds LOS "D",
- Queue length for individual movements that exceeds the lesser of 5 vehicles or the available queue storage.

The following tables summarize the HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing (2023), future background (2025 & 2030) and future total (2025 & 2030) traffic conditions. The detailed calculation sheets are provided in **Appendix D**.

7.1 Regional Road 25 and Louis St. Laurent Avenue

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic condition are summarized in the following table.

Table 4 Capacity analysis of Regional Road 25 and Louis St. Laurent Avenue

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2023	Overall: 0.74 (D) 46 EBL = 0.87 (D) 51 EBTR = 0.81 (E) 58 WBL = 0.83 (D) 51 WBTR = 0.76 (D) 55 NBL = 0.48 (C) 29 NBT = 0.60 (D) 38 NBR = 0.21 (C) 31 SBL = 0.34 (C) 30 SBT = 0.63 (D) 40 SBR = 0.08 (C) 30	 EBL = 100 m EBTR = 135 m WBL = 100 m WBTR = 125 m NBL = 35 m NBT = 125 m NBR = 30 m SBL = 25 m SBT = 125 m SBR = 20 m	Overall: 0.69 (C) 34 EBL = 0.67 (D) 41 EBTR = 0.72 (D) 53 WBL = 0.75 (D) 38 WBTR = 0.79 (D) 50 NBL = 0.58 (C) 24 NBT = 0.51 (C) 27 NBR = 0.26 (C) 24 SBL = 0.33 (C) 20 SBT = 0.45 (C) 26 SBR = 0.18 (C) 23	 EBL = 50 m EBTR = 75 m WBL = 85 m WBTR = 105 m NBL = 50 m NBT = 105 m NBR = 35 m SBL = 25 m SBT = 95 m SBR = 30 m

Future Background 2025	Overall: **0.88** (D) 50 EBL = 0.81 (D) 40 EBTR = 0.83 (E) 59 WBL = 0.89 (E) 59 WBTR = 0.62 (D) 45 NBL = 0.70 (D) 44 NBT = 0.70 (D) 46 NBR = 0.27 (D) 37 SBL = 0.46 (D) 40 SBT = 0.83 (E) 56 SBR = 0.06 (D) 38	 EBL = 85 m EBTR = 140 m WBL = 140 m WBTR = 120 m NBL = 45 m NBT = 140 m NBR = 45 m SBL = 25 m SBT = 145 m SBR = 10 m	Overall: 0.83 (D) 45 EBL = 0.80 (D) 46 EBTR = 0.71 (E) 58 WBL = 0.84 (D) 44 WBTR = 0.64 (D) 49 NBL = 0.74 (D) 38 NBT = 0.64 (D) 40 NBR = 0.32 (C) 34 SBL = 0.41 (C) 33 SBT = 0.67 (D) 46 SBR = 0.24 (D) 38	 EBL = 85 m EBTR = 105 m WBL = 120 m WBTR = 110 m NBL = 65 m NBT = 130 m NBR = 45 m SBL = 30 m SBT = 130 m SBR = 40 m
Future Total 2025	Overall: 0.90 (D) 52 EBL = 0.79 (D) 39 EBTR = **0.86** (E) 62 WBL = 0.91 (E) 63 WBTR = 0.60 (D) 44 NBL = 0.74 (D) 49 NBT = 0.74 (D) 49 NBR = 0.27 (D) 39 SBL = 0.46 (D) 39 SBT = 0.85 (E) 60 SBR = 0.06 (D) 39	 EBL = 80 m EBTR = 150 m WBL = 160 m WBTR = 120 m NBL = 50 m NBT = 140 m NBR = 45 m SBL = 25 m SBT = 155 m SBR = 10 m	Overall: 0.87 (D) 47 EBL = 0.80 (D) 48 EBTR = 0.79 (E) 64 WBL = 0.88 (D) 54 WBTR = 0.63 (D) 48 NBL = 0.76 (D) 40 NBT = 0.64 (D) 40 NBR = 0.32 (C) 34 SBL = 0.42 (C) 33 SBT = 0.69 (D) 47 SBR = 0.24 (D) 38	 EBL = 80 m EBTR = 110 m WBL = 140 m WBTR = 110 m NBL = 65 m NBT = 130 m NBR = 45 m SBL = 30 m SBT = 135 m SBR = 40 m
Future Background 2030	Overall: **0.93** (D) 52 EBL = 0.81 (D) 36 EBTR = **0.85** (E) 59 WBL = 0.91 (E) 64 WBTR = 0.69 (D) 48 NBL = 0.83 (E) 64 NBT = 0.71 (D) 50 NBR = 0.28 (D) 43 SBL = 0.53 (D) 43 SBT = 0.80 (E) 57 SBR = 0.11 (D) 43	 EBL = 105 m EBTR = 155 m WBL = 170 m WBTR = 130 m NBL = 65 m NBT = 115 m NBR = 40 m SBL = 30 m SBT = 120 m SBR = 20 m	Overall: 0.**88** (D) 47 EBL = 0.83 (D) 48 EBTR = 0.78 (E) 61 WBL = 0.88 (D) 52 WBTR = 0.71 (D) 50 NBL = 0.79 (D) 43 NBT = 0.59 (D) 41 NBR = 0.32 (D) 37 SBL = 0.48 (D) 36 SBT = 0.65 (D) 48 SBR = 0.26 (D) 42	 EBL = 95 m EBTR = 110 m WBL = 140 m WBTR = 125 m NBL = 80 m NBT = 110 m NBR = 45 m SBL = 35 m SBT = 110 m SBR = 45 m
Future Total 2030	Overall: **0.95** (D) 54 EBL = 0.82 (D) 37 EBTR = **0.88** (E) 62 WBL = 0.94 (E) 70 WBTR = 0.65 (D) 46 NBL = 0.86 (E) 69 NBT = 0.72 (D) 52 NBR = 0.28 (D) 44 SBL = 0.54 (D) 44 SBT = 0.82 (E) 59 SBR = 0.11 (D) 43	 EBL = 100 m EBTR = 160 m WBL = 185 m WBTR = 130 m NBL = 65 m NBT = 115 m NBR = 40 m SBL = 30 m SBT = 120 m SBR = 20 m	Overall: **0.91** (D) 50 EBL = 0.82 (D) 47 EBTR = 0.83 (E) 66 WBL = 0.91 (E) 59 WBTR = 0.69 (D) 50 NBL = 0.82 (D) 47 NBT = 0.60 (D) 42 NBR = 0.32 (D) 38 SBL = 0.49 (D) 37 SBT = 0.68 (D) 51 SBR = 0.27 (D) 44	 EBL = 90 m EBTR = 120 m WBL = 170 m WBTR = 125 m NBL = 85 m NBT = 110 m NBR = 45 m SBL = 35 m SBT = 110 m SBR = 45 m

Under existing conditions, the intersection of Regional Road 25 and Louis St. Laurent is operating at satisfactory levels with an overall v/c ratio of 0.74 LOS D during the a.m. peak hour and 0.69 LOS C during the p.m. peak hour. The intersection operates without any critical movements.

Under the 2025 future background horizon year including the addition of corridor growth and background development traffic, the intersection is reported to operate with a critical v/c during the a.m. peak hour (0.88 LOS D) only, with the intersection operating with an overall v/c ratio of 0.83 LOS D during the p.m. peak hour. The intersection continues to operate without any critical movements during the a.m. and p.m. peak hour.

Under the 2025 future total traffic condition, with the addition of the site generated traffic, the overall intersection begins to operate at a critical level with an overall v/c ratio of 0.90 LOS D during the a.m. peak hour and 0.87 LOS D

during the p.m. peak hour. The eastbound through/right movement has begun to operate at a critical level during the a.m. peak hour but remains below the theoretical capacity.

Under the 2030 future background scenario, which includes corridor growth, the background development site traffic, and the addition of one through lane in the northbound and southbound direction along Regional Road 25, the intersection operates at a critical level during both peak hours, with an overall v/c ratio of 0.93 LOS D during the a.m. peak hour and 0.88 LOS D during the p.m. peak hour. The eastbound through/right movement continues to operate at a critical level during the a.m. peak hour only with no additional critical movements.

Under the 2030 future total traffic condition, with the addition of the site generated traffic, the overall intersection continues to operate at a critical level with an overall v/c ratio of 0.96 LOS D during the a.m. peak hour and 0.91 LOS D during the p.m. peak hour. The eastbound through/right turn movement during the a.m. peak hour continues to operate as the only critical movement.

No improvements are recommended at this intersection as a result of the proposed development. The development has a marginal impact on the overall operation of the intersection with only a maximum increase of 2 seconds to the overall delay under the 2030 future total a.m. peak hour and 3 seconds during the p.m. peak hour.

7.2 Regional Road 25 and Izumi Gate

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions out are summarized in the following table.

Table 5 Capacity analysis of Regional Road 25 and Izumi Gate

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2023	EBR = 0.01 (B) 10 SBTR = 0.27 (A) 0	EBR = 5 m SBTR = 0 m	EBR = 0.01 (A) 10 SBTR = 0.23 (A) 0	EBR = 5 m SBTR = 0 m
Future Background 2025	EBR = 0.01 (A) 10 SBTR = 0.34 (A) 0	EBR = 5 m SBTR = 0 m	EBR = 0.01 (A) 10 SBTR = 0.30 (A) 0	EBR = 5 m SBTR = 0 m
Future Total 2025	EBR = 0.01 (A) 10 SBTR = 0.35 () 0	EBR = 5 m SBTR = 0 m	EBR = 0.01 (B) 10 SBTR = 0.32 () 0	EBR = 5 m SBTR = 0 m
Future Background 2030	EBR = 0.01 (A) 9 SBTR = 0.27 () 0	EBR = 5 m SBTR = 0 m	EBR = 0 (A) 9 SBTR = 0.23 () 0	EBR = 5 m SBTR = 0 m
Future Total 2030	EBR = 0.01 (A) 9 SBTR = 0.28 () 0	EBR = 5 m SBTR = 0 m	EBR = 0 (A) 9 SBTR = 0.25 () 0	EBR = 5 m SBTR = 0 m

Under existing conditions, the intersection of Region Road 25 and Izumi Gate operates at satisfactory levels with no delays reported along Regional Road 25 and a 10 second delay on the approach from Izumi Gate.

Under the future background 2025 condition, which includes corridor growth along Regional Road 25 and the background development traffic, the intersection is expected to continue to operate at satisfactory levels with Regional Road 25 continuing to operate without any delays and the right-out from Izumi Gate continuing to operate with a 10 second delay.

With the addition of site generated traffic under the 2025 future total horizon year, with the addition of the site generated traffic, the overall intersection continues to operate at a satisfactory level the delays remaining unchanged at all approaches.

Under the future background 2030 condition, which includes corridor growth along Regional Road 25, the background development traffic, in addition to the road widening along Regional Road 25, the intersection is expected to continue to operate at satisfactory levels with Regional Road 25 continuing to operate with no significant delays and the delays for the right-out from Izumi Gate being reduced by 1 second to operate with a 9 second delay.

With the addition of site generated traffic under the 2030 future total horizon year, the overall intersection continues to operate at a satisfactory level the delays remaining unchanged along at all approaches.

No improvements are recommended at this intersection as a result of the proposed development.

7.3 Regional Road 25 and Whitlock Avenue

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 6 Capacity analysis of Regional Road 25 and Whitlock Avenue

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2023	Overall: 0.52 (C) 22 EBL = 0.42 (D) 45 EBTR = 0.12 (D) 39 WBL = 0.19 (D) 40 WBT = 0.08 (D) 38 WBR = 0.07 (D) 38 NBL = 0.15 (B) 12 NBT = 0.48 (B) 17 NBR = 0.01 (B) 12 SBL = 0.16 (B) 11 SBT = 0.59 (B) 19 SBR = 0.05 (B) 12	 EBL = 50 m EBTR = 20 m WBL = 25 m WBT = 15 m WBR = 15 m NBL = 10 m NBT = 85 m NBR = 0 m SBL = 10 m SBT = 110 m SBR = 10 m	Overall: 0.47 (B) 19 EBL = 0.25 (D) 41 EBTR = 0.04 (D) 38 WBL = 0.04 (D) 38 WBT = 0.03 (D) 38 WBR = 0.05 (D) 38 NBL = 0.21 (B) 11 NBT = 0.59 (B) 19 NBR = 0.02 (B) 12 SBL = 0.31 (B) 15 SBT = 0.38 (B) 16 SBR = 0.09 (B) 13	 EBL = 35 m EBTR = 15 m WBL = 10 m WBT = 10 m WBR = 15 m NBL = 15 m NBT = 120 m NBR = 5 m SBL = 15 m SBT = 70 m SBR = 15 m
Future Background 2025	Overall: 0.55 (C) 22 EBL = 0.49 (D) 48 EBTR = 0.26 (D) 41 WBL = 0.18 (D) 40 WBT = 0.09 (D) 39 WBR = 0.11 (D) 39 NBL = 0.38 (B) 16 NBT = 0.45 (B) 17 NBR = 0.01 (B) 12 SBL = 0.18 (B) 11 SBT = 0.59 (B) 19 SBR = 0.06 (B) 12	 EBL = 60 m EBTR = 35 m WBL = 25 m WBT = 20 m WBR = 20 m NBL = 15 m NBT = 85 m NBR = 0 m SBL = 10 m SBT = 120 m SBR = 10 m	Overall: 0.53 (C) 21 EBL = 0.33 (D) 43 EBTR = 0.09 (D) 39 WBL = 0.04 (D) 38 WBT = 0.10 (D) 39 WBR = 0.08 (D) 38 NBL = 0.39 (B) 14 NBT = 0.61 (B) 20 NBR = 0.02 (B) 12 SBL = 0.60 (C) 24 SBT = 0.49 (B) 17 SBR = 0.13 (B) 13	 EBL = 40 m EBTR = 20 m WBL = 10 m WBT = 20 m WBR = 15 m NBL = 20 m NBT = 125 m NBR = 5 m SBL = 20 m SBT = 95 m SBR = 20 m
Future Total 2025	Overall: 0.56 (C) 22 EBL = 0.49 (D) 48 EBTR = 0.26 (D) 41 WBL = 0.18 (D) 40 WBT = 0.09 (D) 39 WBR = 0.11 (D) 39 NBL = 0.39 (B) 16 NBT = 0.45 (B) 17 NBR = 0.01 (B) 12 SBL = 0.2 (B) 11 SBT = 0.6 (B) 19 SBR = 0.07 (B) 12	 EBL = 60 m EBTR = 35 m WBL = 25 m WBT = 20 m WBR = 20 m NBL = 15 m NBT = 85 m NBR = 0 m SBL = 15 m SBT = 120 m SBR = 10 m	Overall: 0.58 (C) 21 EBL = 0.33 (D) 43 EBTR = 0.09 (D) 39 WBL = 0.04 (D) 38 WBT = 0.1 (D) 39 WBR = 0.08 (D) 38 NBL = 0.4 (B) 15 NBT = 0.61 (B) 20 NBR = 0.02 (B) 12 SBL = 0.67 (C) 27 SBT = 0.51 (B) 18 SBR = 0.15 (B) 13	 EBL = 40 m EBTR = 20 m WBL = 10 m WBT = 20 m WBR = 15 m NBL = 20 m NBT = 125 m NBR = 5 m SBL = 25 m SBT = 95 m SBR = 25 m
Future Background 2030	Overall: 0.51 (C) 21 EBL = 0.53 (D) 49 EBTR = 0.28 (D) 42 WBL = 0.21 (D) 41 WBT = 0.10 (D) 39	EBL = 65 m EBTR = 40 m WBL = 25 m WBT = 20 m WBR = 20 m	Overall: 0.63 (B) 20 EBL = 0.36 (D) 44 EBTR = 0.10 (D) 39 WBL = 0.04 (D) 38 WBT = 0.10 (D) 39	EBL = 45 m EBTR = 20 m WBL = 10 m WBT = 20 m WBR = 20 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
	WBR = 0.13 (D) 39 NBL = 0.46 (B) 17 NBT = 0.39 (B) 16 NBR = 0.01 (B) 12 SBL = 0.23 (B) 12 SBT = 0.51 (B) 17 SBR = 0.07 (B) 12	NBL = 15 m NBT = 65 m NBR = 0 m SBL = 15 m SBT = 90 m SBR = 10 m	WBR = 0.11 (D) 39 NBL = 0.47 (B) 16 NBT = 0.53 (B) 18 NBR = 0.02 (B) 12 SBL = 0.74 (C) 33 SBT = 0.41 (B) 16 SBR = 0.14 (B) 13	NBL = 20 m NBT = 100 m NBR = 5 m SBL = 30 m SBT = 70 m SBR = 20 m
Future Total 2030	Overall: 0.51 (C) 21 EBL = 0.53 (D) 49 EBTR = 0.28 (D) 42 WBL = 0.21 (D) 41 WBT = 0.1 (D) 39 WBR = 0.13 (D) 39 NBL = 0.46 (B) 17 NBT = 0.39 (B) 16 NBR = 0.01 (B) 12 SBL = 0.25 (B) 12 SBT = 0.51 (B) 17 SBR = 0.07 (B) 12	EBL = 65 m EBTR = 40 m WBL = 25 m WBT = 20 m WBR = 20 m NBL = 15 m NBT = 65 m NBR = 0 m SBL = 15 m SBT = 90 m SBR = 10 m	Overall: 0.69 (C) 20 EBL = 0.36 (D) 44 EBTR = 0.1 (D) 39 WBL = 0.04 (D) 38 WBT = 0.1 (D) 39 WBR = 0.11 (D) 39 NBL = 0.48 (B) 16 NBT = 0.53 (B) 18 NBR = 0.02 (B) 12 SBL = 0.82 (D) 42 SBT = 0.42 (B) 16 SBR = 0.16 (B) 13	EBL = 45 m EBTR = 20 m WBL = 10 m WBT = 20 m WBR = 20 m NBL = 20 m NBT = 100 m NBR = 5 m SBL = 40 m SBT = 75 m SBR = 25 m

Under existing conditions, the intersection of Regional Road 25 and Whitlock Avenue is operating at satisfactory levels with an overall v/c ratio of 0.52 LOS C during the a.m. peak hour and 0.47 LOS B during the p.m. peak hour. The intersection operates without any critical movements.

Under the 2025 future background horizon year, including the addition of corridor growth and background development traffic, the intersection is expected to continue to operate at satisfactory levels with an overall v/c ratio of 0.55 LOS C during the a.m. peak hour and 0.53 LOS C during the p.m. peak hour and without any critical movements.

Under the 2025 future total traffic condition, with the addition of the site generated traffic, the overall intersection continues to operate at a satisfactory levels with an overall v/c ratio of 0.56 LOS C during the a.m. peak hour and 0.58 LOS C during the p.m. peak hour. All movements continue to operate below the critical threshold.

Under the 2030 future background scenario, which includes corridor growth, the background development site traffic, and the widening of Regional Road 25, the intersection is expected to operate at a satisfactory level with an overall v/c ratio of 0.51 LOS C during the a.m. peak hour and 0.63 LOS C during the p.m. peak hour. No critical movements are reported.

With the addition of site generated under the 2030 future total scenario, the overall intersection continues to operate at satisfactory levels with the overall v/c ratio remaining at 0.51 LOS C during the a.m. peak hour and increasing to 0.69 LOS C during the p.m. peak hour. The intersection is expected to continue to operate without any critical movements.

No improvements are recommended at this intersection as a result of the proposed development.

7.4 Regional Road 25 and the Site Access

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic condition is summarized in the following table.

Table 7 Capacity analysis of Regional Road 25 and the Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2025	EBR = 0.04 (B) 10 SBTR = 0.31 (A) 0	EBR = 5 m SBTR = 0 m	EBR = 0.11 (B) 11 SBTR = 0.30 (A) 0	EBR = 5 m SBTR = 0 m
Future Total 2030	EBR = 0.03 (A) 9 SBTR = 0.23 (A) 0	EBR = 5 m SBTR = 0 m	EBR = 0.08 (A) 9 SBTR = 0.23 (A) 0	EBR = 5 m SBTR = 0 m

Under future 2025 and 2030 traffic scenario, the proposed right-in/right-out access onto the Regional Road 25 is expected to operate satisfactorily. Under the 2025 future total scenario, the access is reporting a delay of 10 seconds during the a.m. peak hour and 11 seconds during the p.m. peak hour. With the widening of Regional Road 25 under the 2030 planning horizon, the delays along the access are expected to be reduced to a 9 second delay during the p.m. peak hour.

The proposed site access is expected to operate with no significant issues and with acceptable levels of delays and queueing.

8. Parking Review

8.1 Existing Town of Milton Zoning By-Law

8.1.1 Vehicular Parking By-Law Requirement

The subject site is governed by the Town of Milton's zoning By-law 016-2014, with the minimum parking requirement for residential uses found in Section 5.8.1, Table 5E and for non-residential uses in Section 5.8.2, Table 5G. The minimum By-law requirement for the subject site is as follows:

- Long-Term Care Facility:
    - 0.33 parking spaces per bed
- Retail Store:
    - 1 parking space per 20 m^2 of GFA

The minimum parking required for the proposed development is as follow:

- Long-Term Care Facility:
    - 0.33 parking spaces per bed x 192 beds = 64 spaces
- Retail
    - 1 parking space per 20 m^2 x 1,215 m^2 = 61 spaces

A minimum of 125 parking spaces are required under the Town's By-law 016-2014 for the long-term care facility and ground floor commercial GFA.

8.1.2 Barrier Free Parking By-Law Requirement

The barrier free parking requirement is also subject to the Town of Milton's zoning By-law 016-2014, with the minimum accessible parking requirement found in Section 5.9, Table 5H and is based on the number of required parking spaces. The minimum By-law requirements are found below, with the requirement applied to the subject site underlined.

- 1-12 spaces required: 1 Type A
- 13-100 spaces required: 4% of the required spaces
- 101-200 spaces required: 1 accessible parking space plus 3% of the required spaces
- 201-1,000 spaces required: 2 accessible parking space plus 2% of the required spaces
- More than 1,000 spaces required: 11 accessible parking space plus 1% of the required spaces

An equal number of Type A and Type B spaces are required. If an odd number of barrier free spaces are required, an even number of Type A and Type B spaces should be provided and the additional space may be a Type B space.

With a total requirement of 125 spaces, the subject site is required to provide a minimum of 5 barrier free spaces consisting of 3 Type A and 2 Type B spaces.

8.1.3 Bicycle Parking By-Law Requirement

The bicycle parking requirement is also subject to the Town of Milton's zoning By-law 016-2014, with the minimum bicycle parking requirement found in Section 5.10, Table 5I and is based on the number of required parking spaces. The minimum By-law requirements are found below.

- 3% of the required parking spaces for the use or lot
- 3% of 125 parking spaces = 4 bicycle parking spaces

With a total requirement of 125 spaces, the subject site is required to provide a minimum of 4 bicycle parking spaces.

8.2 Parking Provision

The Zoning By-law requirement for vehicle parking and loading spaces and the subject site's provision are summarized in the table below.

Table 8 Parking and Loading Requirements and Provision

Type	Unit Count/GFA	By-Law Requirement	Required	Provided
Vehicle Parking –	192 long-term care beds, 1,215 m^2 of commercial GFA	Long-Term Care Facility: 0.33 parking spaces per bed Retail Store: 1 parking space per 20 m^2 of GFA	Minimum of 64 long-term care spaces. Minimum of 61 retail parking spaces **Total of 125 parking spaces**	105 parking spaces
Barrier Free Parking		1 accessible parking space plus 3% of the required spaces	Minimum of 5 spaces	8 barrier free spaces

Bicycle Parking		3% of the required spaces	Minimum of 4 spaces	10 bicycle parking spaces

The development proposes to provide a total of 105 parking spaces including 8 barrier-free spaces. As a result, a site specific Zoning By-law is required for the site to permit a total of 105 parking spaces whereas a total of 125 spaces are required a per the Zoning By-law.

It is proposed that the minimum 64 required parking spaces for the LTC be provided and that parking for the ground floor commercial be reduced from the zoning required 61 parking spaces to the remaining 41 parking spaces. Justification for the reduction is provided in Section 8.3.

8.3 Parking Assessment

8.3.1 Proxy Site Parking Demand Surveys

In support of the proposed reduction in the commercial parking supply, GHD has reviewed parking demand data for two separate commercial plazas completed before 2019 and the beginning of the pandemic. One site is located in Mississauga and the other in Brampton. Each of these sites contains a mix of retail, service, medical office and/or restaurant uses similar to the uses proposed for the site. To determine the peak parking demand, both the 95th percentile and peak observed demand were calculated from the survey data. It is calculated by ensuring that the same number of observations from each day are surveyed and sorted from highest to lowest. To determine the 95th percentile, the highest 5% of the data values are eliminated leaving the remaining highest data point as the 95th percentile.

8.3.1.1 6980 Maritz Drive

The parking surveys were conducted on March 23rd and 24th and on June 7th and 8th with on-site parking accumulation surveyed at 15-minute intervals, from 11:00 a.m. to 4:00 p.m. and from 6:00 p.m. to 10:00 p.m. during each of the survey days.

At the time of the survey the site consisted of the following tenants:

- Santhigram Kerala Ayurveda (physical therapy type of business)
- Falcon Vision Centre
- Derry Health Center
- Maritz Dental
- Zen Gardens Vegetarian Restaurant
- Century 21 Green Realty Inc.
- Brar Tamber Litigation Lawyers
- Sandeep Kaur Law Office
- SR Legal Professional Corporation – Sandeep Randhawa
- Chimney Fresh Authentic Kerala Kitchen
- Law Office
- Chartered Accountants Aneja Professional Corporation

- Assante Wealth Management
- Future 2000 Systems Inc. – Enterprise Storage, Security and Systems Integration
- Inpace Academy (tutoring)
- All Link Travel Inc.

The site has approximately 2,200 m^2 of commercial GFA and a total of 148 parking spaces. None of the 16 units were vacant at the time of the survey.

Table 4 Summary of Peak 15 minute Parking Demand

Table 9 Peak 15-minute Parking Demand (6980 Maritz Drive)

	Friday March 23, 2018	Saturday March 23, 2018	Thursday June 7, 2018	Friday June 8, 2018
Mid-Day 11 am to 4 pm	72	61	62	68
Evening 6 pm to 10 pm	47	48	39	47

The observed peak parking demand for the site is 72 spaces (3.27 spaces per 100 m^2 of GFA) which occurred on Friday, March 23, 2018 during the mid-day when 49% off the existing 148 parking spaces were occupied. The observed peak parking demand occurred for a period of 15 minutes. The 95th percentile peak parking demand is 66 spaces or 3.00 spaces per 100 m^2 of GFA.

8.3.1.2 1965-1975 Cottrelle Boulevard

The proxy site located at 1965 & 1975 Cottrelle Boulevard in the City of Brampton was surveyed during the following days and time:

- Friday January 26, 2018 from 10:00 to 3:00 pm and from 5:00 am to 10:00 pm
- Saturday January 27, 2018 from 10:00 to 3:00 pm and from 5:00 am to 10:00 pm

At the time of the survey the site consisted of the following tenants:

- Dairy Queen
- iQuest Education Center
- Warraich Meats
- Pizza Flames
- Faith Physiotherapy
- Dr. Chetana Lepakshi Optometrist
- Scotiabank
- My Mom’s Rasoi – Sweets & Pure Vegetarian Restaurant
- McVean Medical Centre Guardian Pharmacy
- Guardian Pharmacy
- Baroda Medical Clinic
- Hasty Market
- Re Lex Salon & Spa
- Valley Creek Dental

The site has approximately 2,224 m^2 of GFA within three buildings and a total of 111 parking spaces. None of the 14 units were vacant at the time of the survey.

Table 6 Summary of Peak 15 minute Parking Demand

Table 10 Peak 15-minute Parking Demand (1965-1975 Cottrelle Boulevard)

	Friday March 23, 2018	Saturday March 23, 2018
Mid-Day 11 am to 4 pm	61	66
Evening 6 pm to 10 pm	47	27

The peak parking demand for the site is 66 spaces (2.97 spaces per 100 m^2 of GFA) which occurred on January 27, 2018 during the mid-day where 60% of the existing 111 parking spaces were occupied. The observed peak parking demand occurred for a period of 15 minutes. The 95th percentile peak parking demand is 63 spaces or 2.69 spaces per 100 m^2 of GFA.

8.3.2 Proxy Site Parking Rates to the Subject Site

Based on a maximum peak parking demand rate of 3.27 parking spaces per 100 m^2 of GFA, the subject site's commercial GFA of 13,082.89 ft^2 (1,215.44 m^2) would require a parking supply of 40 parking spaces.

Based on the minimum By-law requirement of 64 parking spaces for the LTC and expected peak parking demand based on the proxy survey data of 40 spaces, the total supply of 105 parking spaces is expected to be sufficient for the site considering that all 85 surface parking spaces will be shared between both the LTC and the commercial GFA uses.

9. Site Access Review

As directed by Region staff, the Halton Region's Access Management Guidelines require a minimum spacing to adjacent intersections on a regional road of 115 metres for a right-in/right-out access.

The proposed right-in/out access to the subject site is located more than 115 metres from the signalized intersection of Regional Road 25 and Louis St. Laurent to the north and satisfies the Region's Guidelines, however the spacing of approximately 105 metre from Izumi Gate is less than the required spacing. Shifting the proposed location of the site access towards the north to provide the additional 10 metres would require numerous changes to the layout of the site and a considerable loss of parking spaces. Due to the right-in/right-out operation of the intersection of Izumi Gate at Regional Road 25, there are no expected queuing concerns that would result in the site access being blocked by potential queues along Regional Road 25, therefore, it is GHD's opinion that the proposed spaces of 105 metres is sufficient and will not negatively impact the traffic flow on Regional Road 25.

The right-in/out restrictions will be enforced by a raised centre median on Regional Road 25 extending a minimum of 45 metres from each access curb return.

GHD completed a review of the proposed site plan with respect to its geometric layout ensuring that it meets the Region of Halton's Access Management Guidelines for driveway width and driveway radii. The access requirements can be found in Section 5.2 of the Region's Access Management Guidelines and provides minimum and maximum dimensions for residential, commercial and industrial land uses in urban and rural environments. Based on a commercial site within an urban environment, the site access requires a minimum width of 4.5 metres and a maximum width of 9.0 metres, and the curb return radii is required to have a minimum radius of 3 metres and a maximum radius of 16 metres. The site access has a width of 6.9 metres and curb return radii of 9 metres, satisfying the Region's requirements.

Typical industry standards suggest that auxiliary right-turn lanes be provided when the anticipated future right-turn volumes exceed 60 vehicles per hour. The subject site is anticipated to generate a total of 65 right-turning vehicles during the p.m. peak hour, exceeding this threshold and thus warranting an auxiliary right-turn lane.

However, in consideration that the right turn volume only slightly exceeds the threshold warrant for the right turn lane, it is our recommendation that the provision of a right turn lane be delayed until after the planned widening of Regional Road 25 is completed which is expected to be several years from build-out of the site. Delaying the right turn lane eliminates a significant throw away cost for the construction of infrastructure which is only marginally warranted. This approach is consistent with the Izumi Gate right-in/out intersection to the south which currently has a right turn volume exceeding 65 vehicles during both peak hours and does not provide a right turn lane.

9.1 Clear Throat

The suggested clear throat length can be found in the TAC 2017 Manual Section 8.9.10, Table 8.9.3. The TAC manual does not provide guidelines for the anticipated land use, however land uses with less than 100 apartment units, shopping centres with less than 25,000 m^2 of GFA, or offices with less than 5,000 m^2 along an arterial road all have a suggested minimum clear throat length of 15 metres.

As shown on **Figure 15**, the 15 metres of clear throat is provided on the site with a small portion of the first parking space as the point of first conflict on-site. The location of this first parking space is not anticipated to have an impact on the operation of the access as it is anticipated to only generate approximately one inbound trip per minute during the peak hours. Additionally, the parking aisle located within the 15 metre clear throat is also not expected to be a significant conflict point as vehicles entering the driveway are provided with unimpeded access and vehicles exiting the site will have to stop and wait for the driveway to clear before exiting.

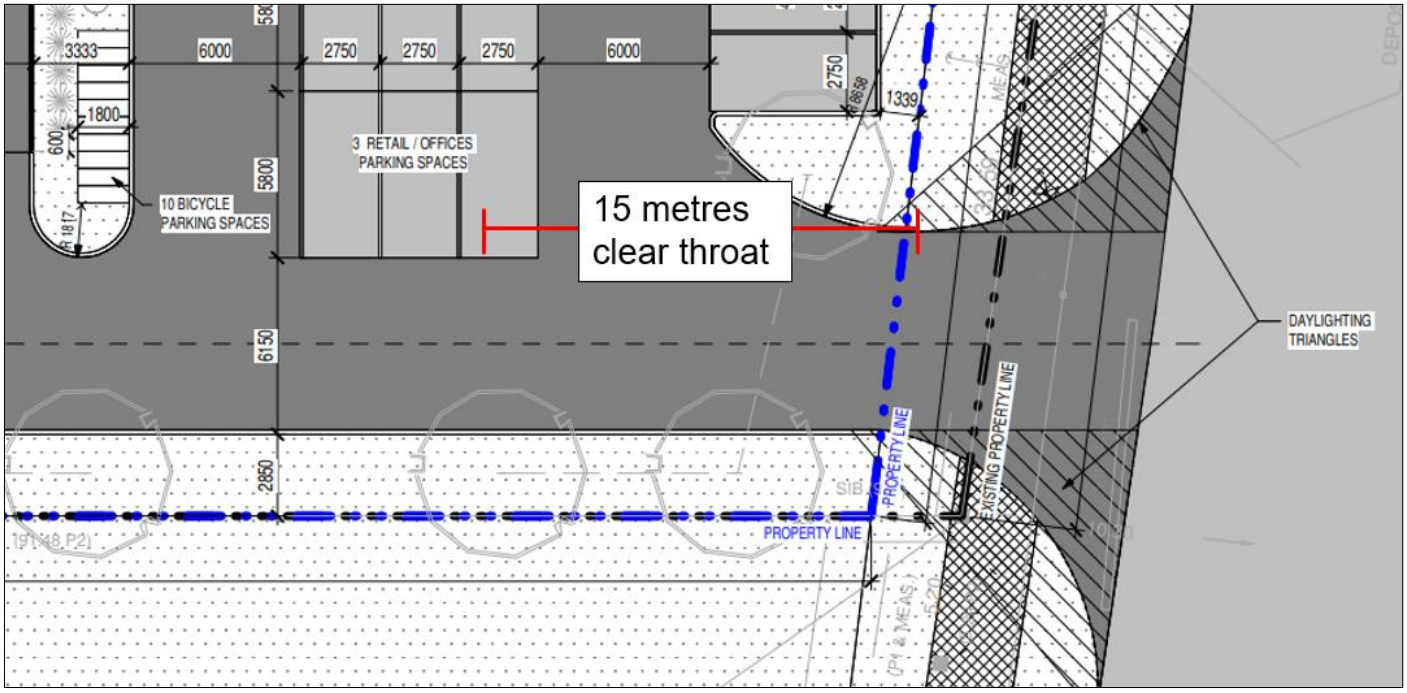


Figure 15 Clear Throat Length

9.2 Sightline Assessment

Adjacent to the proposed site, Regional Road 25 has a posted speed limit of 70 km/h and is relatively flat with no significant vertical changes in elevation. For the purpose of Stopping Sight Distance requirements a design speed of 80 km/h was used for the assessment on Regional Road 25 based on the 70 km/h posted speed limit. Per Transportation Association of Canada's Geometric Design Guide for Canadian Roads (TAC GDGCR) Table 2.5.2, the minimum stopping sight-distance for level roadways with a design speed of 80 km/h is 130 metres for level roadways.

Section 9.9 of the TAC GDCR provides intersection sight distances for different scenarios, with only Case B2 – Right turn from the minor road applicable to the proposed right-in/right-out access.

For the purpose of the assessment, the minor road is assumed to be the proposed site access. A vehicle entering the major road (Regional Road 25) from the site access is assumed to stop a distance of approximately 4.5 to 5.4 metres to the pavement edge of Regional Road 25 as recommended by TAC. In this stopped position, the driver will be required to look left in order to perceive and react to approaching vehicles prior to initiating a turning movement onto the intersecting drive aisle.

The required intersection sight distances are provided in TAC GDGCR Tables 9.9.6 for passenger vehicles turning right from stop and is summarized in the following table. The required intersection sight distances summarized in the tables below are based on a 80 km/h design speed along the major road.

Table 11 Intersection Sight Distance Requirement

Case (Design Speed of 80 km/h)	Required Intersection Sight Distance for Passenger Cars (TAC 2017)	Required Intersection Sight Distance for Single Unit Trucks (TAC 2017)	Available Intersection Sight Distance	TAC Reference
B2: Vehicles turning right from stop	145 m	190 m	>190 m	Table 9.9.6

The required intersection sight distance is calculated from the equation

$$ISD = 0.278\, V_{major}\, t_g$$

Where:

$$ISD = intersection\ sight\ distance$$

$$V_{major} = design\ speed\ of\ the\ major\ road\ \left(\frac{km}{h}\right)$$

$$t_g = time\ gap\ for\ the\ minor\ road\ vehicle\ to\ enter\ the\ major\ road\ (s)$$

The intersection sight distance requirement for passenger cars was determined by the equation above, where the time gap for the minor road vehicle to enter the major road for vehicles is 6.5 seconds for vehicles turning right from a stop.

The intersection sight distance requirement for trucks was determined by the equation above, where the time gap for the minor road vehicle to enter the major road for trucks is 10.5 seconds for vehicles turning right from a stop.

The available sight distances along Regional Road 25 to the north of the proposed site access meet the minimum required stopping sight distance for an 80 km/h design speed. The sightline for a single unit truck (MSU is illustrated in **Figure 16**.Taking into consideration that sightline distance requirements for trucks are greater than the requirement for passenger cars, if the available sight distance provided meets the minimum requirement for trucks, the minimum requirement for passenger vehicles is also met.

Figure 16 Sight Distance Requirement

10. Vehicle Swept Path Analysis

GHD undertook a Vehicle Swept Path Analysis to assess the proposed site plan's ability to accommodate the required turning movements of an emergency vehicle accessing the site through the fire route located in the north and south parking lots, Medium Sized Unit (MSU) loading vehicle and a Wayne Titan waste collection truck accessing the two loading spaces.

The results of the analysis, which are provided in **Appendix E,** illustrate that the site can sufficiently accommodate the aforementioned design vehicles with no conflicts.

The Waste Collection Vehicle was assessed accessing the site along located in the north parking lot in drawing AT-101 and reversing from their stopped position and exiting the parking lot in drawing AT-102. No conflicts were found with the maneuvers.

MSU Trucks were assessed reversing into the loading area in the south parking lot in drawing AT-103 and exiting in a forward motion in drawing AT-104. No conflicts were found with the maneuver.

11. Conclusion

The proposed site plan consists of a long-term care facility with 192 beds and 13,082.89 ft^2 of commercial retail/office GFA. Access to the development is proposed via a right-in/right-out driveway along Regional Road 25.

Based on ITE Trip Generation rates the proposed development is expected to generate a total of 75 new two-way trips during the weekday a.m. peak hour consisting of 46 inbound and 29 outbound trips and 140 new two-way trips during the weekday p.m. peak hour consisting of 65 inbound and 75 outbound trips.

All existing intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2025 future background conditions, with the addition of corridor growth and background development traffic, all intersections continue to operate with acceptable v/c ratios and levels of service with the exception of Louis St. Laurent Avenue and Regional Road 25 reporting an overall v/c ratio of 0.88 LOS D during the a.m. peak hour and 0.83 LOS D during the p.m. peak hour.

With the addition of site generated traffic under the 2025 future total condition, all intersections continue to operate at satisfactory levels the intersection of Louis St. Laurent Avenue and Region Road 25 continuing to operate at a critical level (0.90 LOS D during the a.m. peak hour and 0.87 LOS D during the p.m. peak hour).

Under the 2030 future background conditions, with the addition of corridor growth, background development traffic, and road widening along Regional Road 25, all intersections continue to operate with acceptable v/c ratios and levels of service with the exception of Louis St. Laurent Avenue and Regional Road 25 reporting an overall v/c ratio of 0.93 LOS D during the a.m. peak hour and 0.88 LOS D during the p.m. peak hour.

With the addition of site generated traffic under the 2025 future total condition, all intersections continue to operate at satisfactory levels the intersection of Louis St. Laurent Avenue and Region Road 25 continuing to operate at a critical level (0.95 LOS D during the a.m. peak hour and 0.91 LOS D during the p.m. peak hour).

The overall impact of the development generated traffic was found to be negligible to the operation of the study area intersections and traffic flow along Regional Road 25, Louis St. Laurent Avenue and all other study area roadways. South of the study area, construction is currently underway along Britannia Road from Regional Road 25 towards James Snow Parkway in the east for an ultimate 6-lane cross-section. Once completed, it is expected that traffic along Louis St. Laurent will be redirected towards Britannia Road, providing some relief from the reported capacity issues.

Application of the current Town of Milton's Zoning By-law to the proposed development results in a minimum requirement of 125 parking spaces including 5 barrier-free spaces

The subject site provides a total of 105 parking spaces including 8 barrier free spaces. The provision of 8 barrier free satisfies the minimum By-law requirement. The provision of 105 parking spaces is expected to accommodate the demand based on the minimum by-law requirement of 64 LTC spaces and 40 commercial spaces based on proxy survey data.

An access review was completed for the proposed site access onto Regional Road 25. The proposed site access satisfies the Region's Access Management Guidelines for driveway width and driveway radii with the site access designed with a width of 6.1 metres and curb return radii of 9 metres.

The Halton Region's Access Management Guidelines require a minimum spacing for accesses on a regional road of 115 metres for a right-in/right-out access. The proposed site access is located more than 115 metres spacing from the existing intersections to the north and south of the site.

A Vehicle Swept Path Analysis was undertaken to assess the site's ability to accommodate the required turning movements of a waste collection truck, MSU Truck, and an emergency vehicle as per TAC design guidelines and confirmed that the site accesses, fire route and loading areas can accommodate the aforementioned design vehicles with no conflicts.

Appendices

Appendix A

Terms of Reference

Raf Andrenacci

From: Loro, Darren <Darren.Loro@halton.ca>
Sent: Tuesday, March 7, 2023 8:56 AM
To: Raf Andrenacci
Cc: Will Maria; kavleen.sachdeva@milton.ca; Chris.Toews@milton.ca; Matt Krusto (InTouch); Gregory, Sara
Subject: RE: Terms of Reference - 6360 Regional Road 25

Hi Raf,

Thank you for circulating the proposed TIS Terms of Reference for the 6360 Regional Road 25 property. Please see our comments on the proposed TIS Terms of Reference in blue.

Let us know if you have any questions or wish to discuss further.

Cheers,
Darren

Darren Loro, C.E.T.
Project Manager I – Transportation Planning Coordination
Infrastructure Planning & Policy
Public Works
Halton Region
905-825-6000, ext. 2694 | 1-866-442-5866

From: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Sent: Monday, February 27, 2023 1:31 PM
To: kavleen.sachdeva@milton.ca; Chris.Toews@milton.ca; Loro, Darren <Darren.Loro@halton.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: Terms of Reference - 6360 Regional Road 25

Hello,

GHD Inc. has been retained to prepare a Transportation Impact Study for a proposed long term care home located on land municipally known as 6360 Regional Road 25 in the Town of Milton.

The proposed development will consist of a long-term care home with 192 beds and approximately 10,700 sq.ft. of at-grade commercial space.

Access to the subject site is directly to Region Road 25 as the site does not currently have frontage onto Restivo Lane. Per Halton Region's pre-consultation comments, the minimum allowable spacing for accesses to Regional Road 25 per Halton Region's Access Management Guideline is 300m for a full-moves access and 115m for a right-in/right-out (RI/RO) access, to be measured from inner curb return to inner curb return. The Access Management Guideline is available online at: https://www.halton.ca/Repository/Access-Management-Guideline. Given that the site frontage to Regional Road 25 is approximately 95m and that the spacing along Regional Road 25 between the nearest intersections (Louis St. Laurent Avenue and Izumi Gate) is approximately 300 metres, only one RI/RO site access to Regional Road 25 will be permitted. The site access must be located a minimum of 115m from the existing RI/RO intersection of Regional Road 25 and Izumi Gate (e.g. 115m between the southerly curb return at the proposed site access, and the northerly curb return at the Izumi Gate intersection).

The site access will need to be restricted to a RI/RO operation via a raised centre median on Regional Road 25 per the design specifications outlined in the Region's Access Management Guideline.

In order to properly scope this project, we ask that the Town and Region review and provide comments on the following scope and confirm if there are any additional items required as part of the study. The TIS must conform to Halton Region's Transportation Impact Study Guidelines (2015). The Region's TIS Guidelines are available online at: https://www.halton.ca/Repository/Transportation-Impact-Study-Guidelines

Study Horizon Year
2023 (existing), 2025 (full build-out), and 2030 (5 years post-build-out) Acceptable.

Study intersections

- Existing
  - Regional Road 25 and Louis St. Laurent Avenue Acceptable.
  - Regional Road 25 and Izumi Gate Acceptable.
    - Please add the intersection of Regional Road 25 and Whitlock Avenue to the study scope.
- Proposed Intersections
  - Regional Road 25 and proposed site access Acceptable.
  - ~~Restivo Lane and proposed site access~~ It is understood that the development does not propose an access Restivo Lane.

Traffic Data
Updated traffic counts at the existing study intersection will be undertaken during the a.m. and p.m. peak hours. Acceptable, as long as the counts are conducted on a typical mid-week weekday (i.e. a typical Tuesday, Wednesday or Thursday).

Signal timing data can be requested at accesshalton@halton.ca.

Study Peak Hours
Weekday a.m. and p.m. peak hours Acceptable.

Background Growth Rate
GHD will confirm with Town and Region staff for an appropriate corridor growth rate to use for all movements.

Halton Region's Transportation Master Plan identified the need to widen Regional Road 25 to six lanes from Speers Road to Derry Road, with construction currently scheduled to begin in 2027 per Halton Region's 2022 Budget and Business Plan which is available online at: https://www.halton.ca/Repository/2022-Budget-and-Business-Plan-Capital-Report. A

Municipal Class Environmental Assessment (MCEA) is currently underway for this project, for which information and updates on this study are available online at: https://www.halton.ca/For-Residents/Roads-Construction/Municipal-Class-Environmental-Assessment-Studies/Regional-Road-25-Corridor-Study-%E2%80%93-Speers-Road-(1)

It is reasonable to assume that the road widening construction for this segment may take a couple of years at minimum. Therefore, this improvement should only be accounted for under the 2030 horizon year.

A growth rate of 2% compounded annually can be applied to the existing traffic volumes for all intersection movements in the study area to forecast 2025 future background traffic volumes. To account for the future Regional Road 25 widening, a growth rate of 3.8% compounded annually should be applied to the 2025 future background traffic volumes along Regional Road 25 (through movements only) to forecast 2030 future background traffic volumes. A growth rate of 2% compounded annually can be maintained for all other intersection movements.

Background Development Traffic
City staff to advise if there are any proposed developments located in close proximity to the site that would contribute to additional trips along the study area road network.

Please account for the following background developments in the future background traffic forecasts:

- Primont Homes residential subdivision 24T-14004/M (fronting Britannia Road, east of Regional Road 25)
- Fernbrook residential development Z-10/20 (fronting Britannia Road, east of Regional Road 25)
- West Country Milton Properties Residential Major Node Z-21/21 (south-west corner of Regional Road 25 and Whitlock Avenue)
- Gulfbeck Developments Residential Major Node Z-11/20 (south-west corner of Regional Road 25 and Whitlock Avenue)
- Sixteen Mile Creek residential subdivision 24T-20007/M at 6439 Regional Road 25 (north-east corner of Regional Road 25 and Louis St. Laurent Avenue)
- The development of the blocks adjacent to the subject property as directed by Town staff in their TOR comments.

Trip Generation
Will be completed using rates published by the ITE Trip Generation 11th Edition, LUC 254, Assisted Living, and LUC 822, Strip Retail Plaza >40k. Acceptable, as long as all trip generation assumptions are clearly documented in the TIS (including why these land use categories are the most appropriate to apply to the proposed development) with supporting data appended.

The directional distribution of traffic approaching and departing the site will be determined based on TTS 2016 data, existing local patterns and first principles. Acceptable, as long as all trip distribution assumptions are clearly documented in the TIS with supporting data appended.

The analysis will Identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

- All traffic operations analysis must conform to the Region's TIS Guidelines. This includes documenting all analysis methodologies and highlighting or bolding all critical volume-to-capacity ratios or 95th percentile queue lengths results that exceed the thresholds outlined in the TIS Guidelines.
- If traffic operations issues are identified under future background or total conditions, then the TIS will need to recommend mitigation measures to address these issues (even if not necessarily triggered by the proposed development) or at the very least, rationalize the traffic operations issues if there are no feasible mitigation measures. The TIS should identify who is responsible for each recommended mitigation measure, if required.

TAC, Region, and Town guidelines will be reviewed in order to complete an access management. Acceptable. See previous comments for access spacing requirements to Regional Road 25.

Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance. Acceptable. Sight distance analysis for the proposed site access to Regional Road 25 must also be included in the TIS.

GHD will review and assess the appropriateness of the proposed car accesses and potential queuing concerns onto adjacent roads. Acceptable.

Complete AutoTurn assessment for the expected design vehicles. Acceptable. The AutoTURN assessment must confirm that the proposed site access can accommodate a simultaneous inbound design vehicle (e.g. fire truck, waste collection truck, etc.) and outbound passenger car, and vice versa.

Existing TDM opportunities will be identified and future TDM opportunities will be recommended for the site. Acceptable, as long as no modal split reductions are applied to the site trip generation forecasts.

The parking supply will be reviewed in accordance with the Town's Zoning By-law.

If the above scope is acceptable to the Town and Region, it will form the basis of our scope of work.

Thank you,
Raf

Raf Andrenacci

From: Chris.Toews@milton.ca
Sent: Monday, March 6, 2023 1:56 PM
To: Raf Andrenacci
Cc: Kavleen.Sachdeva@milton.ca; Will Maria; 'Loro, Darren'
Subject: FW: Terms of Reference - 6360 Regional Road 25

Hi Raf,

See below comments from the Town in red.

Chris Toews
Transportation Planning Technologist
150 Mary Street., Milton ON, L9T 6Z5
905-878-7252 ext. 2502
www.milton.ca

From: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Sent: Monday, February 27, 2023 1:31 PM
To: Kavleen Sachdeva <Kavleen.Sachdeva@milton.ca>; Chris Toews <Chris.Toews@milton.ca>; Loro, Darren <Darren.Loro@halton.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: Terms of Reference - 6360 Regional Road 25

Hello,

GHD Inc. has been retained to prepare a Transportation Impact Study for a proposed long term care home located on land municipally known as 6360 Regional Road 25 in the Town of Milton.

The proposed development will consist of a long-term care home with 192 beds and approximately 10,700 sq.ft. of at-grade commercial space.

Access to the subject site is directly to Region Road 25 as the site does not currently have frontage onto Restivo Lane.

In order to properly scope this project, we ask that the Town and Region review and provide comments on the following scope and confirm if there are any additional items required as part of the study. Ensure that the report follows the

guidelines set out in the Town's TIS guidelines. The report must be stamped, signed, and dated by a Licensed Professional Engineer from the Province of Ontario (P.Eng.).

Study Horizon Year
2023 (existing), 2025 (full build-out), and 2030 (5 years post-build-out) Acceptable

Study intersections
- Existing
  - Regional Road 25 and Louis St. Laurent Avenue
  - Regional Road 25 and Izumi Gate
- Proposed Intersections
  - Regional Road 25 and proposed site access
  - ~~Restivo Lane and proposed site access~~ Access not considered at this point per correspondence.

Traffic Data
Updated traffic counts at the existing study intersection will be undertaken during the a.m. and p.m. peak hours. Acceptable

Study Peak Hours
Weekday a.m. and p.m. peak hours Acceptable

Background Growth Rate
GHD will confirm with Town and Region staff for an appropriate corridor growth rate to use for all movements. 2% growth rate to be applied to traffic volumes along Louis St. Laurent Avenue, if existing counts are being collected for Izumi Gate, then no growth rate would be required. Region to confirm growth rate for Regional Roads.

Background Development Traffic
City staff to advise if there are any proposed developments located in close proximity to the site that would contribute to additional trips along the study area road network. Vacant lands north and south of property anticipate development, however design concepts have not yet been provided to the Town. Please include the following in the analysis for future background scenarios:

- Block north of site: Zoned for high density residential, institutional and office uses.
  - Max. permissible GFA = **27,201 sq.m. (292,789 sq.ft)**
- Block south of site: Zoned for medium/high density residential, and office uses.
  - Max. permissible GFA = **31,878 sq.m. (343,131 sq.ft)**

Please utilize the above for conservative trip generation estimates. You may note in the report these are maximum allowable ground floor areas based on Town policy, and are subject to change.

Trip Generation
Will be completed using rates published by the ITE Trip Generation 11th Edition, LUC 254, Assisted Living, and LUC 822, Strip Retail Plaza >40k. To conduct a conservative analysis, no trip reductions are applied to the site trip generation based on the existing/proposed TDM measures. The TDM measures and the expected reduction should be noted within the report.

The directional distribution of traffic approaching and departing the site will be determined based on TTS 2016 data, existing local patterns and first principles.

The analysis will Identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements. A PHF of 1.0 can be used to simulate a flat hourly peak for the future background/total scenarios.

TAC, Region, and Town guidelines will be reviewed in order to complete an access management.
Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance.

GHD will review and assess the appropriateness of the proposed car accesses and potential queuing concerns onto adjacent roads.

Complete AutoTurn assessment for the expected design vehicles. (AutoTurn assessment will be requested at the Site Plan Application stage)

Existing TDM opportunities will be identified and future TDM opportunities will be recommended for the site.

The parking supply will be reviewed in accordance with the Town's Zoning By-law.

A safety review should also be included:
The safety review section identifies the potential of safety or operational issues associated with the following, as applicable:

- Weaving;
- Merging;
- Collision history;
- Corner clearances;
- Sight distances;
- Vehicle-pedestrian conflicts;
- School crossings;
- Traffic infiltration;
- Access conflicts;
- Cyclist movements;
- Heavy truck movement conflicts; and,
- Any other issue identified by Town staff or the consultant.

The Safety Review must include all modes of transportation that might access or travel through, and in the proximity of, the proposed development. In addition, a detailed review of the roadway geometry related to MTO/TAC guidelines for:

- Sight distances (stopping distance, intersection sight triangles, departure sight distance, decision sight distance) utilizing MTO guidelines for approach and departure sight distances for all existing roadways to be impacted directly by the development, accesses, entrances, new roadways, etc.;
- Roadway curves (vertical and horizontal) standards;
- Roadway cross-sections & lane widths;
- Clear zone;
- Conflicting vehicle movements within and adjacent to the development; and,
- On-site vehicle swept path analysis (AutoTurn) utilizing the proper design vehicles (buses, fire trucks, garbage trucks, etc., as appropriate).

If the proposed parking supple is insufficient, a Parking Justification Study will also be required. The following must be included within the scope of work:

- Review the estimated parking demand from ITE Parking Generation Manual, 5th Edition
- Review 2016 TTS Data to determine Auto-Ownership, etc.
- Comparison of the Town's ZBL parking requirement rates vs other similar municipalities
- A comprehensive TDM plan using the City of Kitchener's TDM Checklist may also be used. Through the proposed TDM checklist measures, it must be ensured that the resultant parking requirement in Table C is less than or equal to the proposed parking supply. All proposed TDM measures must be included in the recommendation section of the report.

If the above scope is acceptable to the Town and Region, it will form the basis of our scope of work.

Thank you,
Raf

Appendix B

Traffic Data

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Turning Movement Count (2 . REGIONAL RD 25 & IZUMI GATE)

Start Time	N Approach REGIONAL RD 25					S Approach REGIONAL RD 25					W Approach IZUMI GATE					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	3	231	0	0	234	141	0	0	0	141	2	0	0	0	2	377	
07:15:00	5	242	0	0	247	173	0	0	0	173	1	0	0	0	1	421	
07:30:00	4	317	0	0	321	228	0	0	0	228	2	0	0	0	2	551	
07:45:00	7	240	0	0	247	260	0	0	0	260	2	0	0	0	2	509	1858
08:00:00	7	272	0	0	279	259	0	0	0	259	0	0	0	0	0	538	2019
08:15:00	9	316	0	0	325	299	0	0	0	299	3	0	0	0	3	627	2225
08:30:00	13	285	0	0	298	242	0	0	0	242	1	0	0	0	1	541	2215
08:45:00	11	234	0	0	245	240	0	0	0	240	0	0	0	0	0	485	2191
BREAK																	
16:00:00	15	247	0	0	262	260	0	0	0	260	0	0	0	0	0	522	
16:15:00	13	212	0	0	225	309	0	0	0	309	0	0	0	0	0	534	
16:30:00	18	211	0	0	229	344	0	0	0	344	2	0	0	1	2	575	
16:45:00	9	232	0	0	241	342	0	0	0	342	1	0	0	0	1	584	2215
17:00:00	22	240	0	0	262	289	0	0	0	289	0	0	0	0	0	551	2244
17:15:00	21	235	0	0	256	323	0	0	0	323	1	0	0	0	1	580	2290
17:30:00	12	215	0	0	227	319	0	0	0	319	0	0	0	0	0	546	2261
17:45:00	21	252	0	0	273	310	0	0	0	310	4	0	0	0	4	587	2264
Grand Total	190	3981	0	0	4171	4338	0	0	0	4338	19	0	0	1	19	**8528**	-
Approach%	4.6%	95.4%	0%		-	100%	0%	0%		-	100%	0%	0%		-	**-**	-
Totals %	2.2%	46.7%	0%		48.9%	50.9%	0%	0%		50.9%	0.2%	0%	0%		0.2%	**-**	-
Heavy	1	207	0		-	174	0	0		-	0	0	0		-	**-**	-
Heavy %	0.5%	5.2%	0%		-	4%	0%	0%		-	0%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Clear Sky (-3.12 °C)

Start Time	N Approach REGIONAL RD 25					S Approach REGIONAL RD 25					W Approach IZUMI GATE					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
07:30:00	4	317	0	0	321	228	0	0	0	228	2	0	0	0	2	551
07:45:00	7	240	0	0	247	260	0	0	0	260	2	0	0	0	2	509
08:00:00	7	272	0	0	279	259	0	0	0	259	0	0	0	0	0	538
08:15:00	9	316	0	0	325	299	0	0	0	299	3	0	0	0	3	627
Grand Total	27	1145	0	0	1172	1046	0	0	0	1046	7	0	0	0	7	**2225**
Approach%	2.3%	97.7%	0%		-	100%	0%	0%		-	100%	0%	0%		-	**-**
Totals %	1.2%	51.5%	0%		52.7%	47%	0%	0%		47%	0.3%	0%	0%		0.3%	**-**
PHF	0.75	0.9	0		0.9	0.87	0	0		0.87	0.58	0	0		0.58	**-**
Heavy	1	78	0		79	54	0	0		54	0	0	0		0	**-**
Heavy %	3.7%	6.8%	0%		6.7%	5.2%	0%	0%		5.2%	0%	0%	0%		0%	**-**
Lights	26	1067	0		1093	992	0	0		992	7	0	0		7	**-**
Lights %	96.3%	93.2%	0%		93.3%	94.8%	0%	0%		94.8%	100%	0%	0%		100%	**-**
Single-Unit Trucks	0	31	0		31	30	0	0		30	0	0	0		0	**-**
Single-Unit Trucks %	0%	2.7%	0%		2.6%	2.9%	0%	0%		2.9%	0%	0%	0%		0%	**-**
Buses	1	14	0		15	15	0	0		15	0	0	0		0	**-**
Buses %	3.7%	1.2%	0%		1.3%	1.4%	0%	0%		1.4%	0%	0%	0%		0%	**-**
Articulated Trucks	0	33	0		33	9	0	0		9	0	0	0		0	**-**
Articulated Trucks %	0%	2.9%	0%		2.8%	0.9%	0%	0%		0.9%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

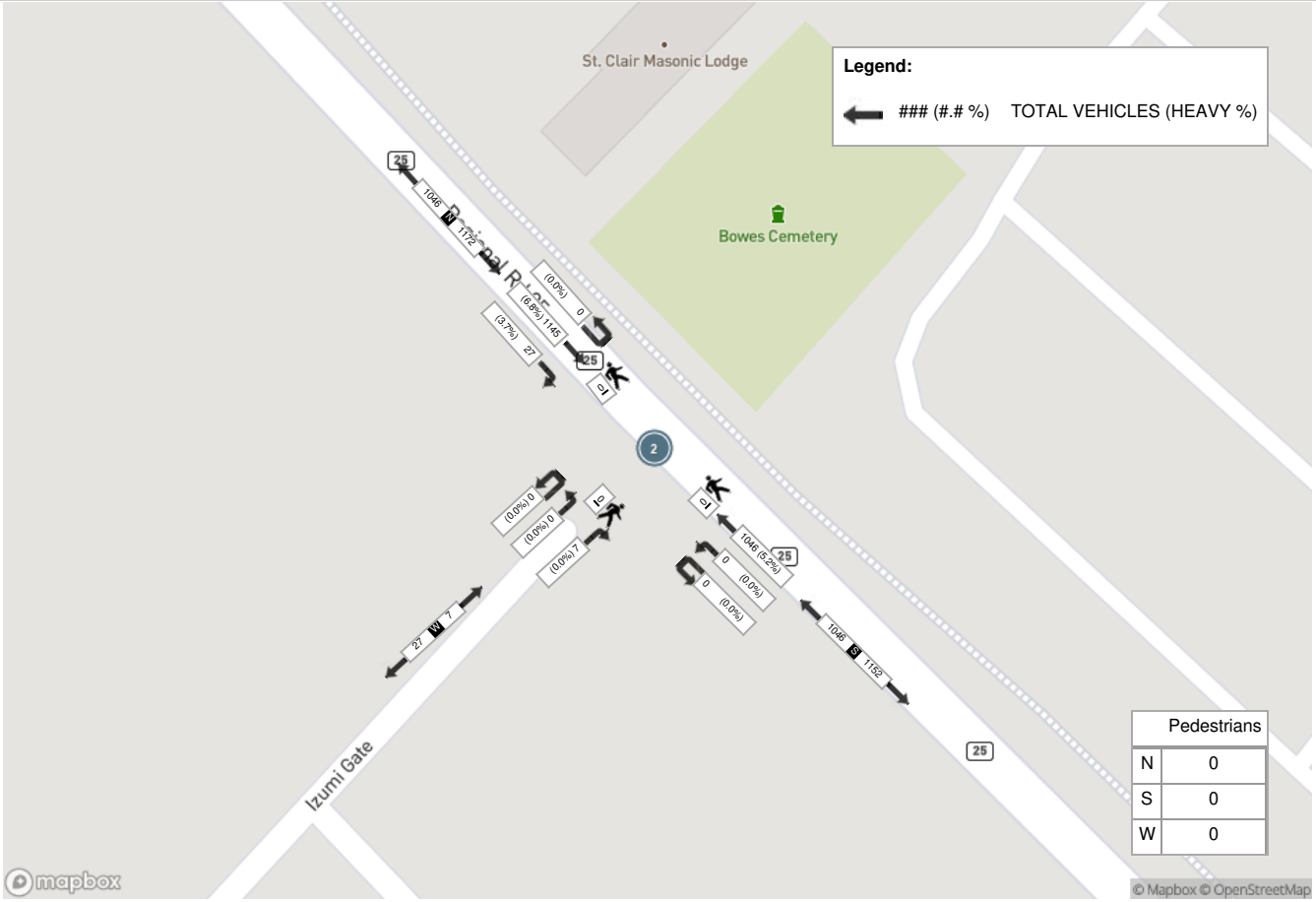
GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (2 °C)

Start Time	N Approach REGIONAL RD 25					S Approach REGIONAL RD 25					W Approach IZUMI GATE					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
16:30:00	18	211	0	0	229	344	0	0	0	344	2	0	0	1	2	575
16:45:00	9	232	0	0	241	342	0	0	0	342	1	0	0	0	1	584
17:00:00	22	240	0	0	262	289	0	0	0	289	0	0	0	0	0	551
17:15:00	21	235	0	0	256	323	0	0	0	323	1	0	0	0	1	580
Grand Total	70	918	0	0	988	1298	0	0	0	1298	4	0	0	1	4	**2290**
Approach%	7.1%	92.9%	0%		-	100%	0%	0%		-	100%	0%	0%		-	**-**
Totals %	3.1%	40.1%	0%		43.1%	56.7%	0%	0%		56.7%	0.2%	0%	0%		0.2%	**-**
PHF	0.8	0.96	0		0.94	0.94	0	0		0.94	0.5	0	0		0.5	**-**
Heavy	0	31	0		31	36	0	0		36	0	0	0		0	**-**
Heavy %	0%	3.4%	0%		3.1%	2.8%	0%	0%		2.8%	0%	0%	0%		0%	**-**
Lights	70	887	0		957	1262	0	0		1262	4	0	0		4	**-**
Lights %	100%	96.6%	0%		96.9%	97.2%	0%	0%		97.2%	100%	0%	0%		100%	**-**
Single-Unit Trucks	0	13	0		13	13	0	0		13	0	0	0		0	**-**
Single-Unit Trucks %	0%	1.4%	0%		1.3%	1%	0%	0%		1%	0%	0%	0%		0%	**-**
Buses	0	5	0		5	7	0	0		7	0	0	0		0	**-**
Buses %	0%	0.5%	0%		0.5%	0.5%	0%	0%		0.5%	0%	0%	0%		0%	**-**
Articulated Trucks	0	13	0		13	16	0	0		16	0	0	0		0	**-**
Articulated Trucks %	0%	1.4%	0%		1.3%	1.2%	0%	0%		1.2%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	100%		**-**

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

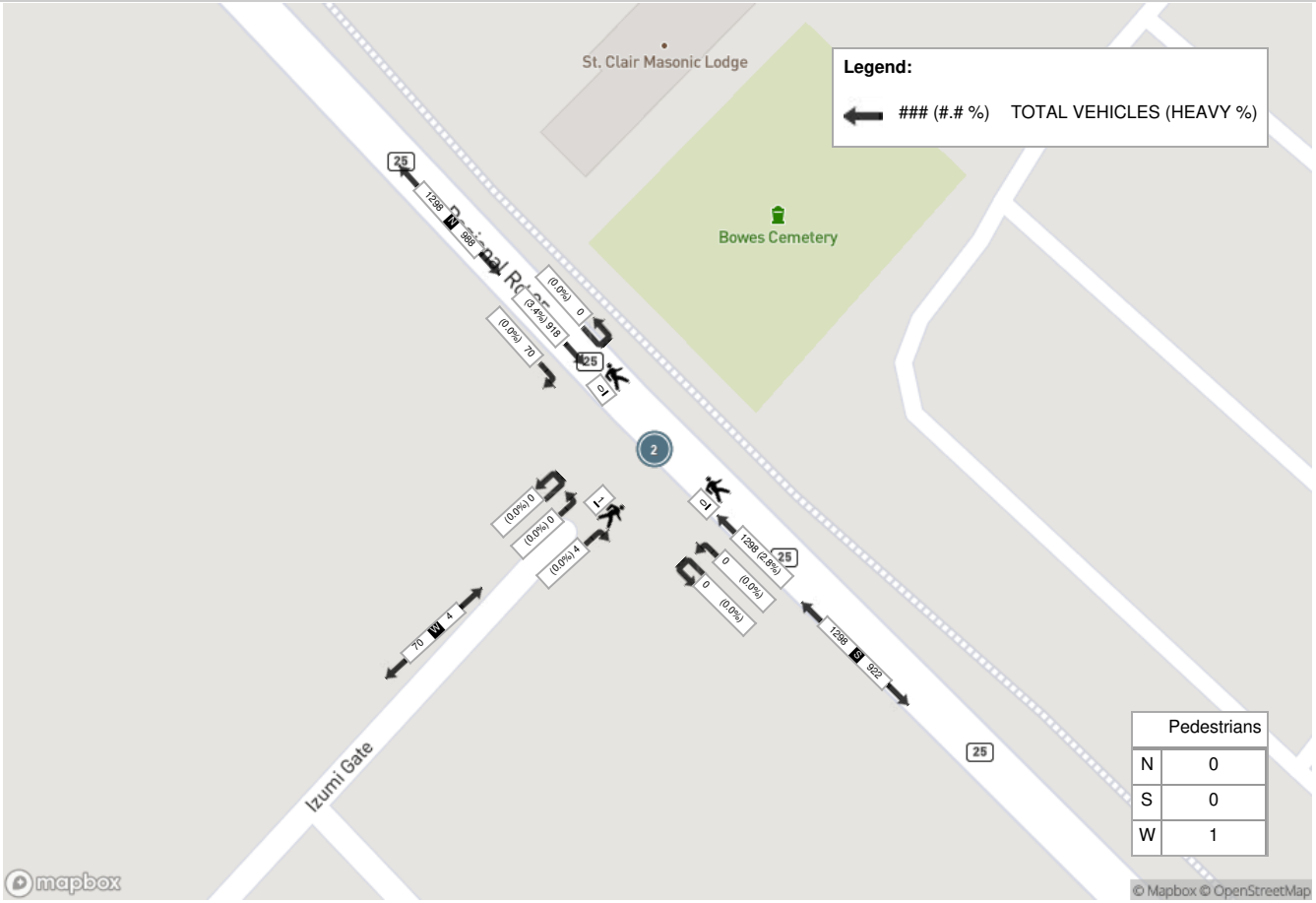
Peak Hour: 07:30 AM - 08:30 AM Weather: Clear Sky (-3.12 °C)



	Pedestrians
N	0
S	0
W	0

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (2 °C)



	Pedestrians
N	0
S	0
W	1

Spectrum

Turning Movement Count
Location Name: REGIONAL RD 25 & LOUIS ST LAURENT AVE
Date: Wed, Mar 08, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Turning Movement Count (1 . REGIONAL RD 25 & LOUIS ST LAURENT AVE)

Start Time	N Approach REGIONAL RD 25						E Approach LOUIS ST LAURENT AVE						S Approach REGIONAL RD 25						W Approach LOUIS ST LAURENT AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	8	137	5	0	0	150	9	24	73	0	0	106	23	106	12	0	0	141	32	57	47	0	0	136	533	
07:15:00	20	147	6	0	0	173	8	29	58	0	1	95	47	119	12	0	0	178	38	64	47	0	0	149	595	
07:30:00	11	199	15	0	5	225	10	54	78	0	0	142	57	154	18	0	0	229	39	94	58	0	0	191	787	
07:45:00	20	161	23	0	3	204	23	101	60	0	0	184	57	168	28	0	1	253	28	135	76	0	2	239	880	2795
08:00:00	23	166	18	0	0	207	31	207	80	0	0	318	56	176	23	0	0	255	34	149	82	0	0	265	1045	3307
08:15:00	24	177	8	0	1	209	25	133	84	0	0	242	63	200	28	0	0	291	49	139	73	1	1	262	1004	3716
08:30:00	26	184	16	0	4	226	19	102	73	0	0	194	46	172	20	0	0	238	36	116	74	0	0	226	884	3813
08:45:00	28	153	27	0	1	208	21	62	63	0	0	146	52	175	24	0	0	251	36	128	66	0	0	230	835	3768
BREAK																										
16:00:00	34	154	13	0	1	201	19	93	75	0	0	187	75	151	38	0	0	264	26	89	21	0	0	136	788	
16:15:00	41	150	20	0	0	211	14	121	57	0	1	192	66	183	44	0	0	293	25	82	36	0	0	143	839	
16:30:00	41	147	19	0	1	207	19	100	65	0	0	184	86	216	41	0	0	343	17	80	53	0	0	150	884	
16:45:00	57	149	27	0	1	233	15	125	57	0	2	197	85	223	31	0	3	339	25	84	35	0	0	144	913	3424
17:00:00	49	179	24	0	3	252	17	137	83	0	0	237	69	171	50	0	0	290	20	81	46	0	0	147	926	3562
17:15:00	50	166	24	0	1	240	19	126	62	0	1	207	80	202	45	0	0	327	18	60	54	0	0	132	906	3629
17:30:00	53	120	22	0	3	195	19	135	88	0	2	242	91	177	42	0	1	310	16	106	39	0	0	161	908	3653
17:45:00	60	170	23	0	1	253	19	136	85	0	0	240	87	174	50	0	0	311	17	95	58	1	0	171	975	3715
Grand Total	545	2559	290	0	25	3394	287	1685	1141	0	7	3113	1040	2767	506	0	5	4313	456	1559	865	2	3	2882	**13702**	-
Approach%	16.1%	75.4%	8.5%	0%		-	9.2%	54.1%	36.7%	0%		-	24.1%	64.2%	11.7%	0%		-	15.8%	54.1%	30%	0.1%		-	**-**	-
Totals %	4%	18.7%	2.1%	0%		24.8%	2.1%	12.3%	8.3%	0%		22.7%	7.6%	20.2%	3.7%	0%		31.5%	3.3%	11.4%	6.3%	0%		21%	**-**	-
Heavy	6	177	3	0		-	4	29	24	0		-	22	135	17	0		-	9	29	27	0		-	**-**	-
Heavy %	1.1%	6.9%	1%	0%		-	1.4%	1.7%	2.1%	0%		-	2.1%	4.9%	3.4%	0%		-	2%	1.9%	3.1%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Spectrum

Turning Movement Count
Location Name: REGIONAL RD 25 & LOUIS ST LAURENT AVE
Date: Wed, Mar 08, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Clear Sky (-3.12 °C)

Start Time	N Approach REGIONAL RD 25						E Approach LOUIS ST LAURENT AVE						S Approach REGIONAL RD 25						W Approach LOUIS ST LAURENT AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	20	161	23	0	3	204	23	101	60	0	0	184	57	168	28	0	1	253	28	135	76	0	2	239	880
08:00:00	23	166	18	0	0	207	31	207	80	0	0	318	56	176	23	0	0	255	34	149	82	0	0	265	1045
08:15:00	24	177	8	0	1	209	25	133	84	0	0	242	63	200	28	0	0	291	49	139	73	1	1	262	1004
08:30:00	26	184	16	0	4	226	19	102	73	0	0	194	46	172	20	0	0	238	36	116	74	0	0	226	884
Grand Total	93	688	65	0	8	846	98	543	297	0	0	938	222	716	99	0	1	1037	147	539	305	1	3	992	**3813**
Approach%	11%	81.3%	7.7%	0%		-	10.4%	57.9%	31.7%	0%		-	21.4%	69%	9.5%	0%		-	14.8%	54.3%	30.7%	0.1%		-	**-**
Totals %	2.4%	18%	1.7%	0%		22.2%	2.6%	14.2%	7.8%	0%		24.6%	5.8%	18.8%	2.6%	0%		27.2%	3.9%	14.1%	8%	0%		26%	**-**
PHF	0.89	0.93	0.71	0		0.94	0.79	0.66	0.88	0		0.74	0.88	0.9	0.88	0		0.89	0.75	0.9	0.93	0.25		0.94	**-**
Heavy	5	66	1	0		72	1	14	13	0		28	6	35	6	0		47	5	9	19	0		33	**-**
Heavy %	5.4%	9.6%	1.5%	0%		8.5%	1%	2.6%	4.4%	0%		3%	2.7%	4.9%	6.1%	0%		4.5%	3.4%	1.7%	6.2%	0%		3.3%	**-**
Lights	88	622	64	0		774	97	529	284	0		910	216	681	93	0		990	142	530	286	1		959	**-**
Lights %	94.6%	90.4%	98.5%	0%		91.5%	99%	97.4%	95.6%	0%		97%	97.3%	95.1%	93.9%	0%		95.5%	96.6%	98.3%	93.8%	100%		96.7%	**-**
Single-Unit Trucks	1	24	1	0		26	0	2	4	0		6	3	17	2	0		22	3	2	13	0		18	**-**
Single-Unit Trucks %	1.1%	3.5%	1.5%	0%		3.1%	0%	0.4%	1.3%	0%		0.6%	1.4%	2.4%	2%	0%		2.1%	2%	0.4%	4.3%	0%		1.8%	**-**
Buses	4	7	0	0		11	0	12	6	0		18	3	10	4	0		17	2	7	6	0		15	**-**
Buses %	4.3%	1%	0%	0%		1.3%	0%	2.2%	2%	0%		1.9%	1.4%	1.4%	4%	0%		1.6%	1.4%	1.3%	2%	0%		1.5%	**-**
Articulated Trucks	0	35	0	0		35	1	0	3	0		4	0	8	0	0		8	0	0	0	0		0	**-**
Articulated Trucks %	0%	5.1%	0%	0%		4.1%	1%	0%	1%	0%		0.4%	0%	1.1%	0%	0%		0.8%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	66.7%		-	-	-	-	0%		-	-	-	-	8.3%		-	-	-	-	25%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

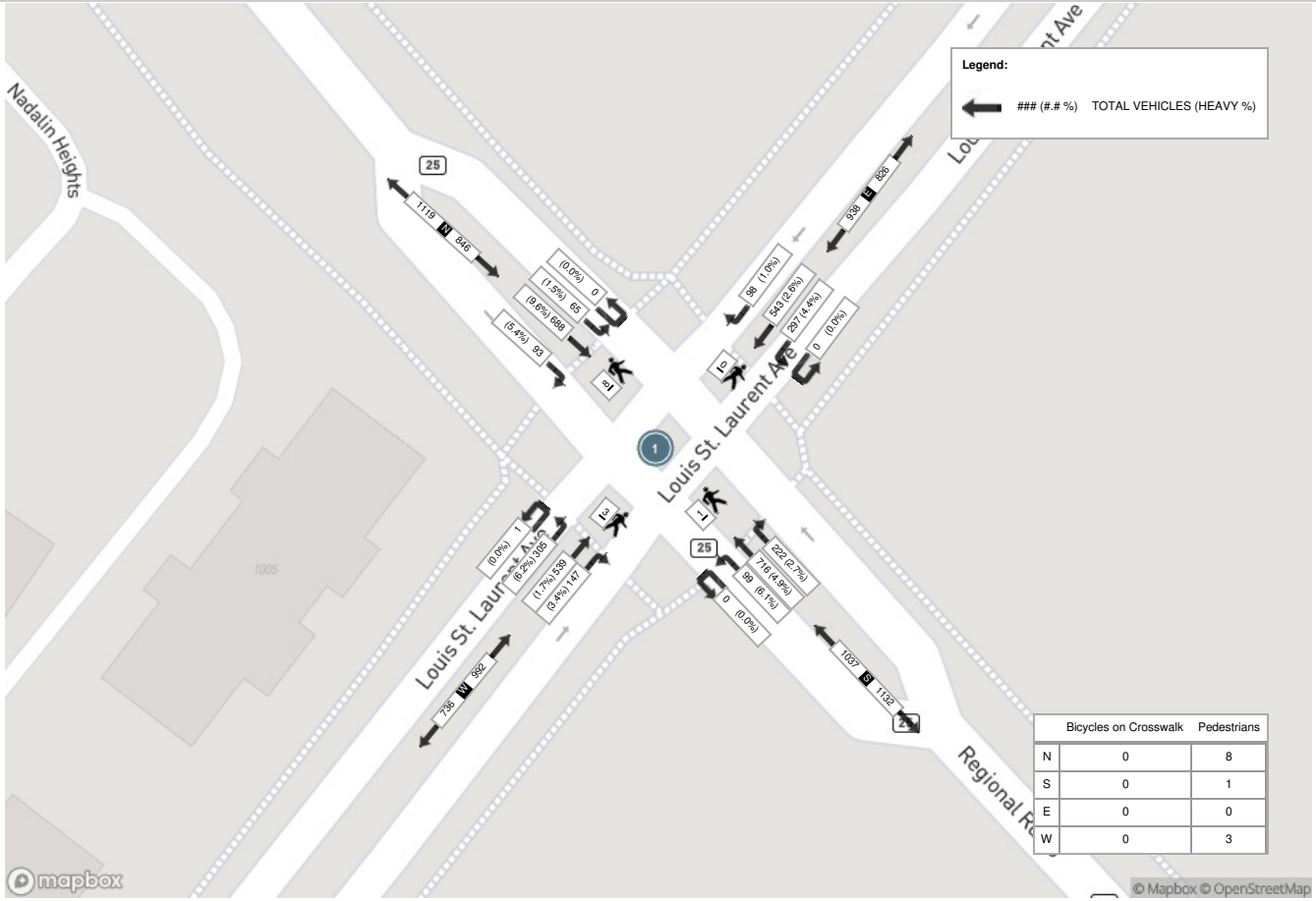
Turning Movement Count
Location Name: REGIONAL RD 25 & LOUIS ST LAURENT AVE
Date: Wed, Mar 08, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

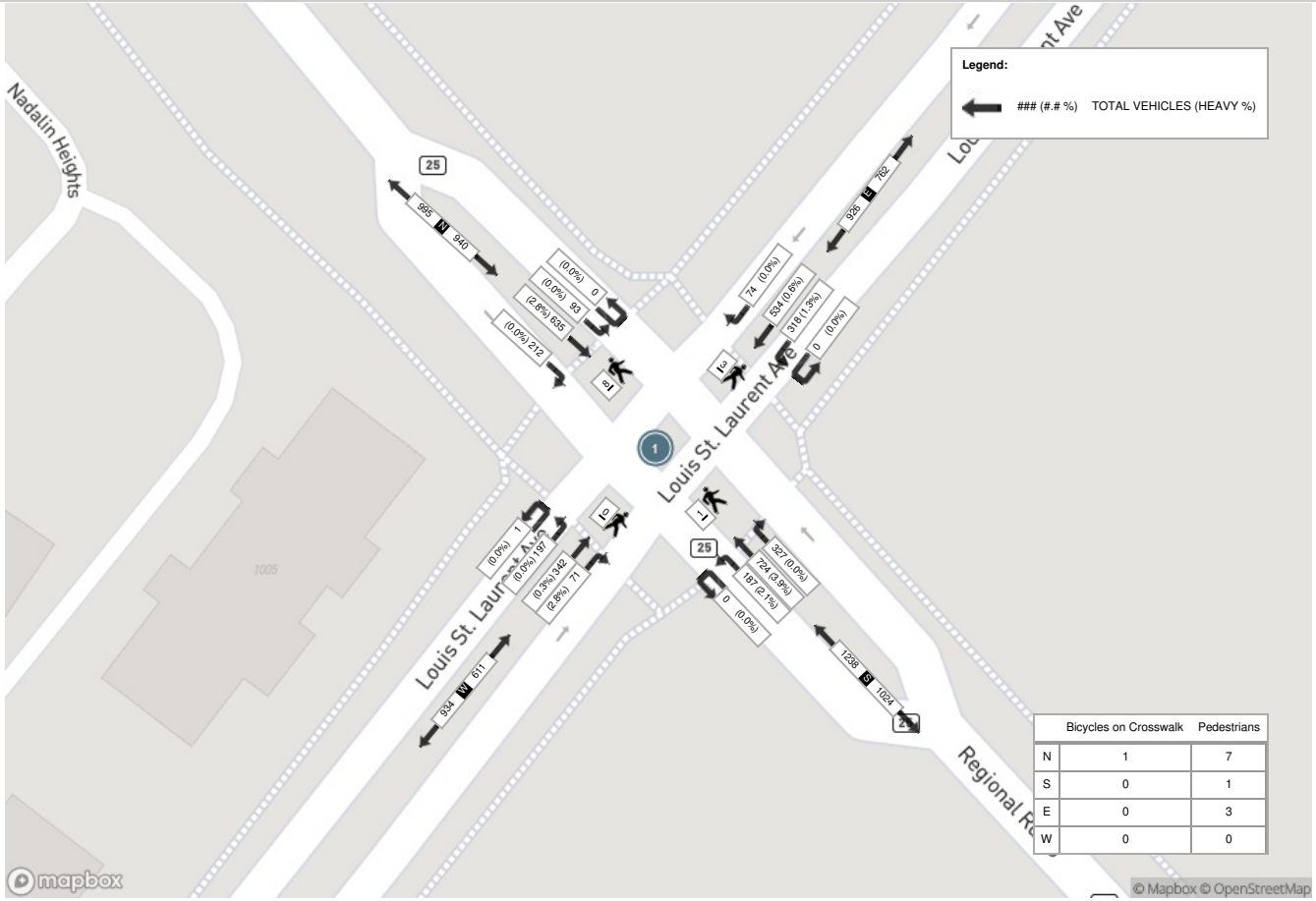
Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (2 °C)

Start Time	N Approach REGIONAL RD 25						E Approach LOUIS ST LAURENT AVE						S Approach REGIONAL RD 25						W Approach LOUIS ST LAURENT AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	49	179	24	0	3	252	17	137	83	0	0	237	69	171	50	0	0	290	20	81	46	0	0	147	926
17:15:00	50	166	24	0	1	240	19	126	62	0	1	207	80	202	45	0	0	327	18	60	54	0	0	132	906
17:30:00	53	120	22	0	3	195	19	135	88	0	2	242	91	177	42	0	1	310	16	106	39	0	0	161	908
17:45:00	60	170	23	0	1	253	19	136	85	0	0	240	87	174	50	0	0	311	17	95	58	1	0	171	975
Grand Total	212	635	93	0	8	940	74	534	318	0	3	926	327	724	187	0	1	1238	71	342	197	1	0	611	**3715**
Approach%	22.6%	67.6%	9.9%	0%		-	8%	57.7%	34.3%	0%		-	26.4%	58.5%	15.1%	0%		-	11.6%	56%	32.2%	0.2%		-	**-**
Totals %	5.7%	17.1%	2.5%	0%		25.3%	2%	14.4%	8.6%	0%		24.9%	8.8%	19.5%	5%	0%		33.3%	1.9%	9.2%	5.3%	0%		16.4%	**-**
PHF	0.88	0.89	0.97	0		0.93	0.97	0.97	0.9	0		0.96	0.9	0.9	0.94	0		0.95	0.89	0.81	0.85	0.25		0.89	**-**
Heavy	0	18	0	0		18	0	3	4	0		7	0	28	4	0		32	2	1	0	0		3	**-**
Heavy %	0%	2.8%	0%	0%		1.9%	0%	0.6%	1.3%	0%		0.8%	0%	3.9%	2.1%	0%		2.6%	2.8%	0.3%	0%	0%		0.5%	**-**
Lights	212	617	93	0		922	74	531	314	0		919	327	696	183	0		1206	69	341	196	1		607	**-**
Lights %	100%	97.2%	100%	0%		98.1%	100%	99.4%	98.7%	0%		99.2%	100%	96.1%	97.9%	0%		97.4%	97.2%	99.7%	99.5%	100%		99.3%	**-**
Single-Unit Trucks	0	6	0	0		6	0	2	3	0		5	0	12	3	0		15	2	0	0	0		2	**-**
Single-Unit Trucks %	0%	0.9%	0%	0%		0.6%	0%	0.4%	0.9%	0%		0.5%	0%	1.7%	1.6%	0%		1.2%	2.8%	0%	0%	0%		0.3%	**-**
Buses	0	3	0	0		3	0	1	1	0		2	0	2	1	0		3	0	1	0	0		1	**-**
Buses %	0%	0.5%	0%	0%		0.3%	0%	0.2%	0.3%	0%		0.2%	0%	0.3%	0.5%	0%		0.2%	0%	0.3%	0%	0%		0.2%	**-**
Articulated Trucks	0	9	0	0		9	0	0	0	0		0	0	14	0	0		14	0	0	0	0		0	**-**
Articulated Trucks %	0%	1.4%	0%	0%		1%	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.1%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0.5%	0%		0.2%	**-**
Pedestrians	-	-	-	-	7	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	58.3%		-	-	-	-	25%		-	-	-	-	8.3%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	8.3%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 07:45 AM - 08:45 AM **Weather: Clear Sky (-3.12 °C)**



Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (2 °C)**



	Bicycles on Crosswalk	Pedestrians
N	1	7
S	0	1
E	0	3
W	0	0

Spectrum

Turning Movement Count
Location Name: REGIONAL RD 25 & WHITLOCK AVE
Date: Wed, Mar 08, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Turning Movement Count (3 . REGIONAL RD 25 & WHITLOCK AVE)

Start Time	N Approach REGIONAL RD 25						E Approach WHITLOCK AVE						S Approach REGIONAL RD 25						W Approach WHITLOCK AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	4	225	5	0	0	234	15	0	5	0	0	20	3	111	2	0	0	116	22	0	15	0	2	37	407	
07:15:00	11	225	10	0	0	246	19	3	3	0	1	25	1	151	7	0	0	159	19	3	15	0	0	37	467	
07:30:00	5	297	8	0	2	310	15	2	13	0	0	30	2	187	6	0	1	195	27	2	20	0	0	49	584	
07:45:00	9	221	10	0	1	240	18	1	10	0	0	29	1	229	11	0	0	241	13	3	18	0	0	34	544	2002
08:00:00	15	230	11	0	0	256	31	9	12	0	0	52	3	181	8	0	0	192	24	3	31	0	0	58	558	2153
08:15:00	21	290	7	0	3	318	30	9	10	0	1	49	10	226	11	0	2	247	23	13	40	0	1	76	690	2376
08:30:00	19	250	19	0	2	288	18	10	13	3	0	44	2	194	5	0	1	201	23	2	30	0	1	55	588	2380
08:45:00	26	207	7	0	0	240	17	6	3	0	0	26	5	188	14	0	2	207	19	4	31	0	0	54	527	2363
BREAK																										
16:00:00	31	192	24	0	2	247	14	1	6	0	0	21	6	229	13	0	3	248	16	5	23	0	0	44	560	
16:15:00	19	173	21	0	0	213	22	2	3	0	0	27	8	284	19	0	1	311	6	1	14	0	0	21	572	
16:30:00	29	172	14	0	1	215	22	1	2	0	0	25	10	295	25	0	0	330	7	4	18	0	0	29	599	
16:45:00	22	188	21	0	1	231	24	5	1	0	1	30	4	286	10	0	0	300	11	1	27	0	0	39	600	2331
17:00:00	31	188	26	0	0	245	14	3	5	0	0	22	5	264	24	0	0	293	5	3	15	0	0	23	583	2354
17:15:00	26	185	20	0	1	231	20	2	5	0	1	27	13	296	29	0	0	338	6	2	22	0	0	30	626	2408
17:30:00	29	166	20	0	1	215	23	1	7	0	1	31	10	274	19	0	0	303	3	4	20	0	0	27	576	2385
17:45:00	30	193	29	1	0	253	19	3	6	2	0	30	9	269	26	0	2	304	12	3	17	0	0	32	619	2404
Grand Total	327	3402	252	1	14	3982	321	58	104	5	5	488	92	3664	229	0	12	3985	236	53	356	0	4	645	**9100**	-
Approach%	8.2%	85.4%	6.3%	0%		-	65.8%	11.9%	21.3%	1%		-	2.3%	91.9%	5.7%	0%		-	36.6%	8.2%	55.2%	0%		-	**-**	-
Totals %	3.6%	37.4%	2.8%	0%		43.8%	3.5%	0.6%	1.1%	0.1%		5.4%	1%	40.3%	2.5%	0%		43.8%	2.6%	0.6%	3.9%	0%		7.1%	**-**	-
Heavy	3	195	7	0		-	8	4	4	0		-	4	151	3	0		-	1	9	9	0		-	**-**	-
Heavy %	0.9%	5.7%	2.8%	0%		-	2.5%	6.9%	3.8%	0%		-	4.3%	4.1%	1.3%	0%		-	0.4%	17%	2.5%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Clear Sky (-3.12 °C)

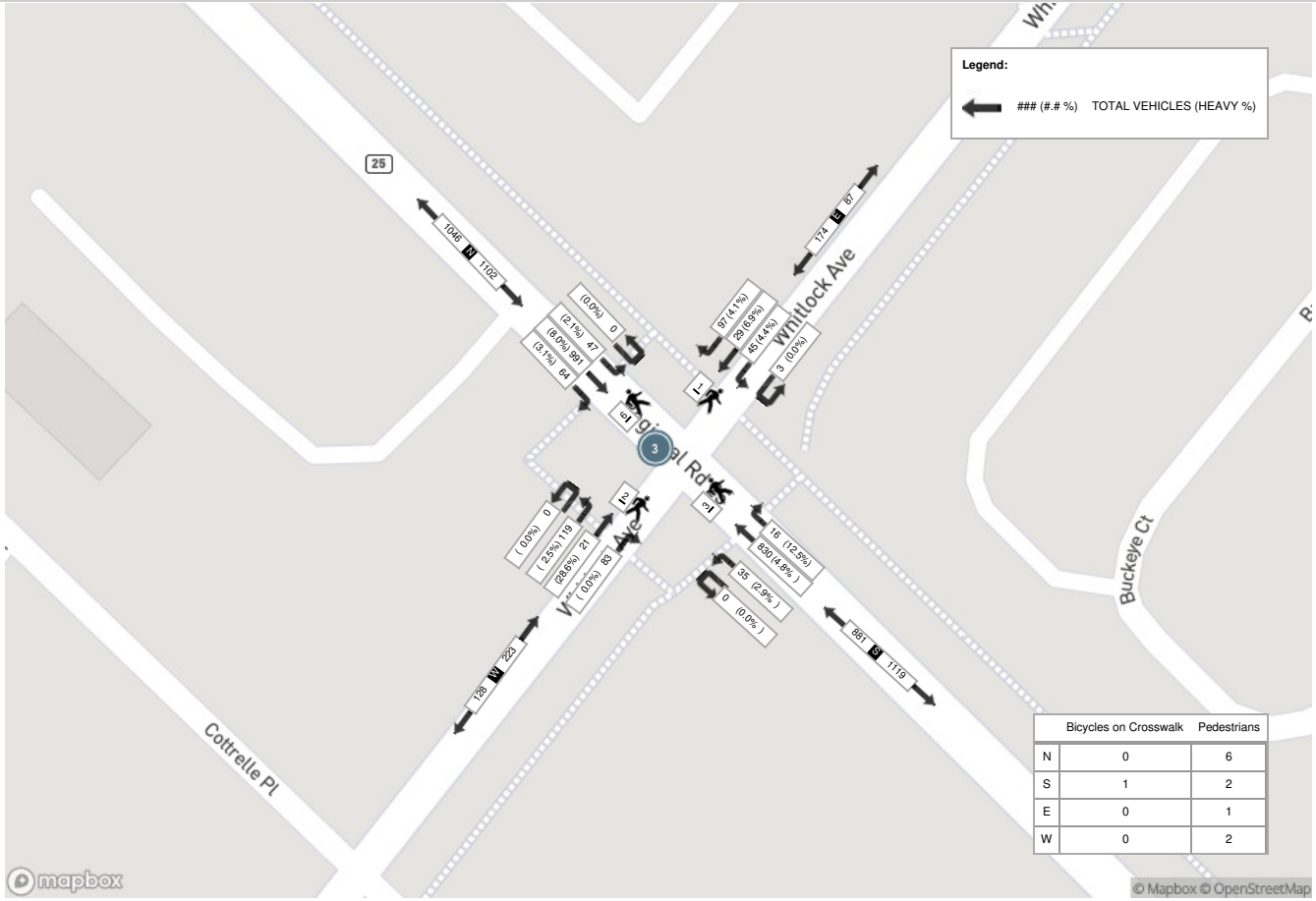
Start Time	N Approach REGIONAL RD 25						E Approach WHITLOCK AVE						S Approach REGIONAL RD 25						W Approach WHITLOCK AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	9	221	10	0	1	240	18	1	10	0	0	29	1	229	11	0	0	241	13	3	18	0	0	34	544
08:00:00	15	230	11	0	0	256	31	9	12	0	0	52	3	181	8	0	0	192	24	3	31	0	0	58	558
08:15:00	21	290	7	0	3	318	30	9	10	0	1	49	10	226	11	0	2	247	23	13	40	0	1	76	690
08:30:00	19	250	19	0	2	288	18	10	13	3	0	44	2	194	5	0	1	201	23	2	30	0	1	55	588
Grand Total	64	991	47	0	6	1102	97	29	45	3	1	174	16	830	35	0	3	881	83	21	119	0	2	223	**2380**
Approach%	5.8%	89.9%	4.3%	0%		-	55.7%	16.7%	25.9%	1.7%		-	1.8%	94.2%	4%	0%		-	37.2%	9.4%	53.4%	0%		-	**-**
Totals %	2.7%	41.6%	2%	0%		46.3%	4.1%	1.2%	1.9%	0.1%		7.3%	0.7%	34.9%	1.5%	0%		37%	3.5%	0.9%	5%	0%		9.4%	**-**
PHF	0.76	0.85	0.62	0		0.87	0.78	0.73	0.87	0.25		0.84	0.4	0.91	0.8	0		0.89	0.86	0.4	0.74	0		0.73	**-**
Heavy	2	79	1	0		82	4	2	2	0		8	2	40	1	0		43	0	6	3	0		9	**-**
Heavy %	3.1%	8%	2.1%	0%		7.4%	4.1%	6.9%	4.4%	0%		4.6%	12.5%	4.8%	2.9%	0%		4.9%	0%	28.6%	2.5%	0%		4%	**-**
Lights	62	912	46	0		1020	93	27	43	3		166	14	790	34	0		838	83	15	116	0		214	**-**
Lights %	96.9%	92%	97.9%	0%		92.6%	95.9%	93.1%	95.6%	100%		95.4%	87.5%	95.2%	97.1%	0%		95.1%	100%	71.4%	97.5%	0%		96%	**-**
Single-Unit Trucks	0	27	1	0		28	0	0	0	0		0	0	18	0	0		18	0	0	1	0		1	**-**
Single-Unit Trucks %	0%	2.7%	2.1%	0%		2.5%	0%	0%	0%	0%		0%	0%	2.2%	0%	0%		2%	0%	0%	0.8%	0%		0.4%	**-**
Buses	2	13	0	0		15	4	2	2	0		8	2	12	1	0		15	0	6	2	0		8	**-**
Buses %	3.1%	1.3%	0%	0%		1.4%	4.1%	6.9%	4.4%	0%		4.6%	12.5%	1.4%	2.9%	0%		1.7%	0%	28.6%	1.7%	0%		3.6%	**-**
Articulated Trucks	0	39	0	0		39	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	**-**
Articulated Trucks %	0%	3.9%	0%	0%		3.5%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	50%		-	-	-	-	8.3%		-	-	-	-	16.7%		-	-	-	-	16.7%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	8.3%		-	-	-	-	0%		**-**

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (2 °C)

Start Time	N Approach REGIONAL RD 25						E Approach WHITLOCK AVE						S Approach REGIONAL RD 25						W Approach WHITLOCK AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	29	172	14	0	1	215	22	1	2	0	0	25	10	295	25	0	0	330	7	4	18	0	0	29	599
16:45:00	22	188	21	0	1	231	24	5	1	0	1	30	4	286	10	0	0	300	11	1	27	0	0	39	600
17:00:00	31	188	26	0	0	245	14	3	5	0	0	22	5	264	24	0	0	293	5	3	15	0	0	23	583
17:15:00	26	185	20	0	1	231	20	2	5	0	1	27	13	296	29	0	0	338	6	2	22	0	0	30	626
Grand Total	108	733	81	0	3	922	80	11	13	0	2	104	32	1141	88	0	0	1261	29	10	82	0	0	121	**2408**
Approach%	11.7%	79.5%	8.8%	0%		-	76.9%	10.6%	12.5%	0%		-	2.5%	90.5%	7%	0%		-	24%	8.3%	67.8%	0%		-	**-**
Totals %	4.5%	30.4%	3.4%	0%		38.3%	3.3%	0.5%	0.5%	0%		4.3%	1.3%	47.4%	3.7%	0%		52.4%	1.2%	0.4%	3.4%	0%		5%	**-**
PHF	0.87	0.97	0.78	0		0.94	0.83	0.55	0.65	0		0.87	0.62	0.96	0.76	0		0.93	0.66	0.63	0.76	0		0.78	**-**
Heavy	1	26	3	0		30	1	1	0	0		2	0	34	2	0		36	0	0	1	0		1	**-**
Heavy %	0.9%	3.5%	3.7%	0%		3.3%	1.3%	9.1%	0%	0%		1.9%	0%	3%	2.3%	0%		2.9%	0%	0%	1.2%	0%		0.8%	**-**
Lights	107	707	78	0		892	79	10	13	0		102	32	1107	86	0		1225	29	10	81	0		120	**-**
Lights %	99.1%	96.5%	96.3%	0%		96.7%	98.8%	90.9%	100%	0%		98.1%	100%	97%	97.7%	0%		97.1%	100%	100%	98.8%	0%		99.2%	**-**
Single-Unit Trucks	0	10	2	0		12	1	1	0	0		2	0	12	1	0		13	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	1.4%	2.5%	0%		1.3%	1.3%	9.1%	0%	0%		1.9%	0%	1.1%	1.1%	0%		1%	0%	0%	0%	0%		0%	**-**
Buses	1	3	1	0		5	0	0	0	0		0	0	6	1	0		7	0	0	1	0		1	**-**
Buses %	0.9%	0.4%	1.2%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.5%	1.1%	0%		0.6%	0%	0%	1.2%	0%		0.8%	**-**
Articulated Trucks	0	13	0	0		13	0	0	0	0		0	0	16	0	0		16	0	0	0	0		0	**-**
Articulated Trucks %	0%	1.8%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.3%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	60%		-	-	-	-	40%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

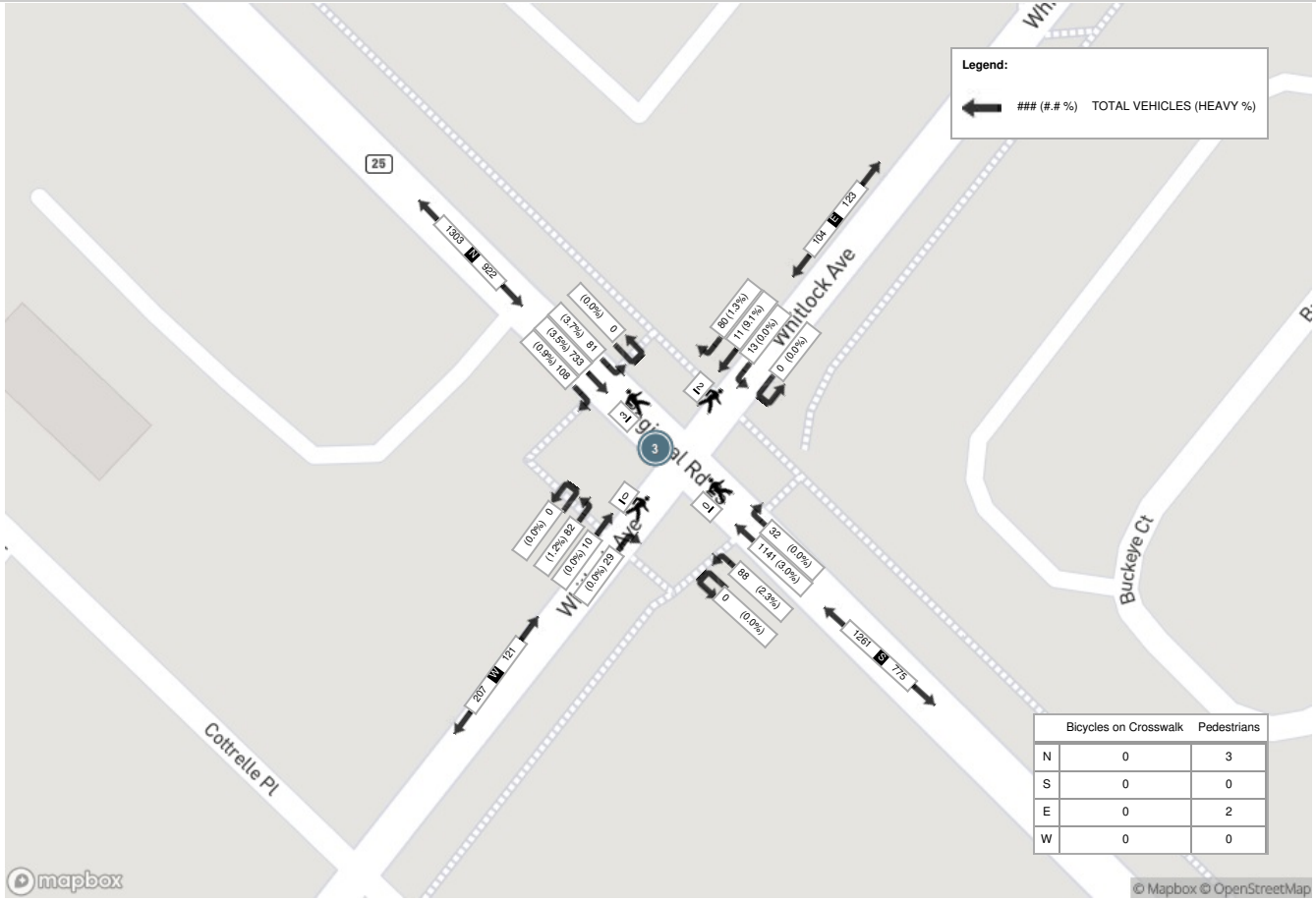
GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Peak Hour: 07:45 AM - 08:45 AM **Weather: Clear Sky (-3.12 °C)**



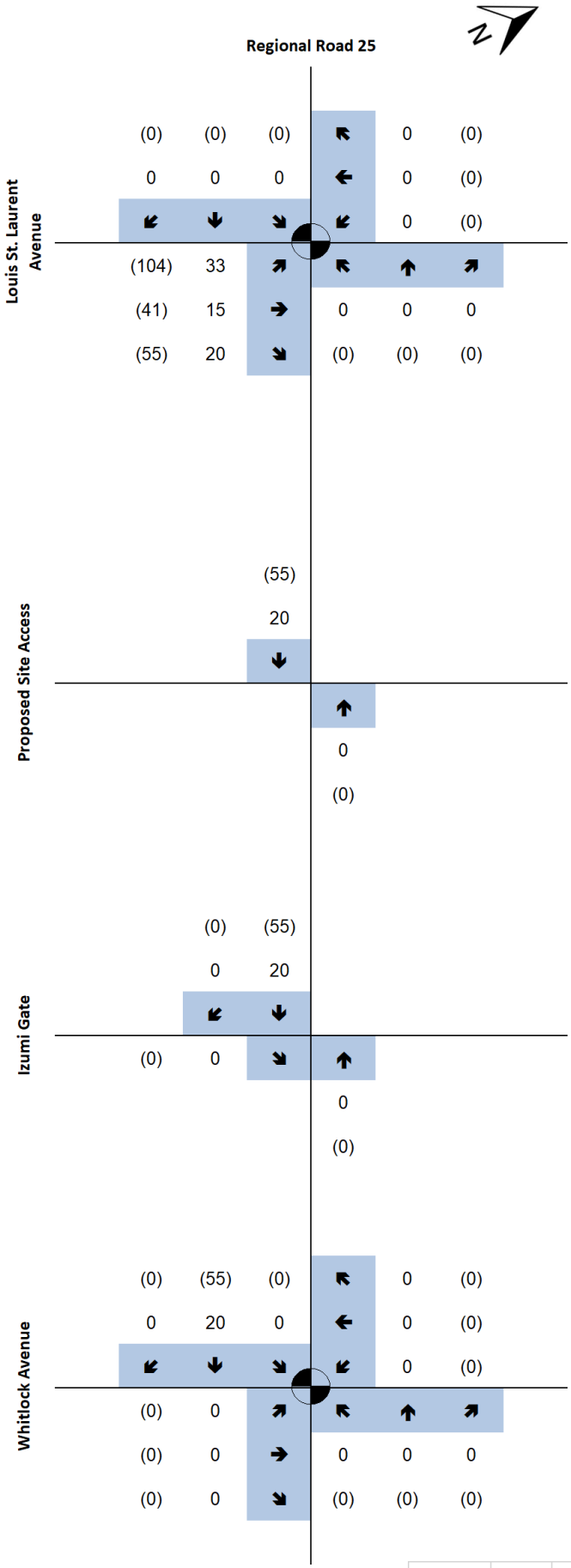
GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Overcast Clouds (2 °C)**



Appendix C

Background Developments



Subject Site

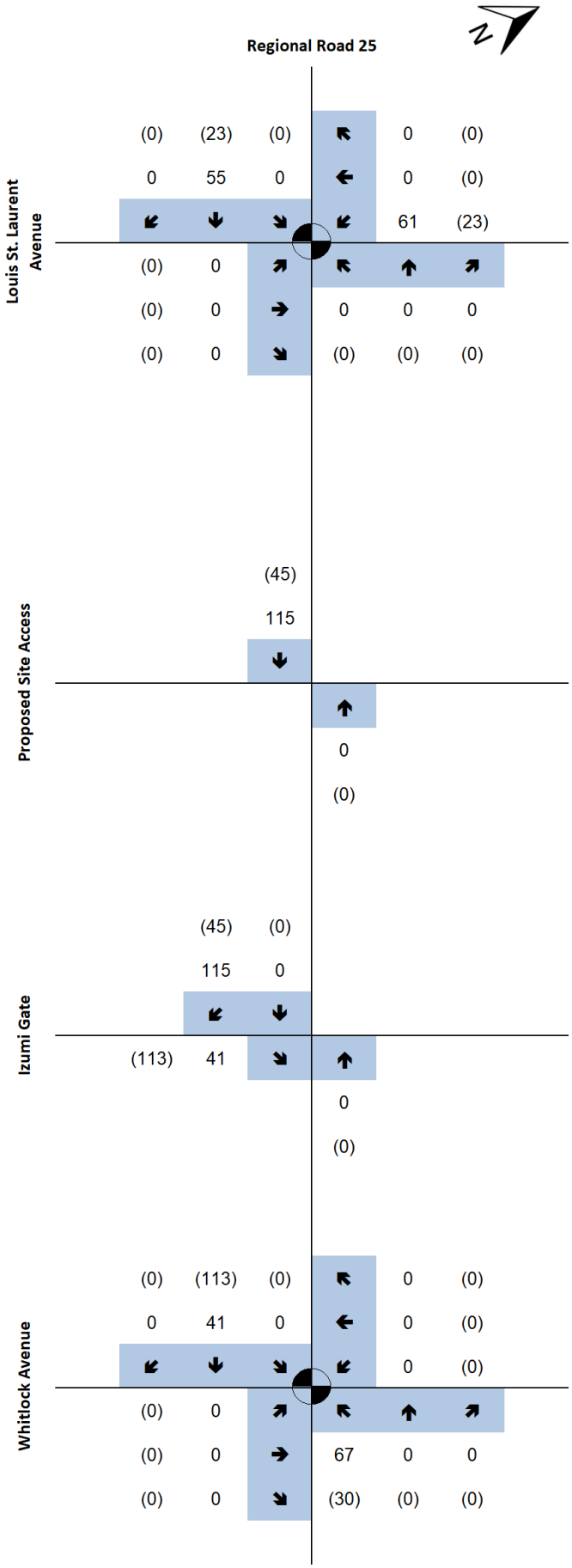
LEGEND

XX AM Peak Hour Volumes
(XX) PM Peak Hour Volumes
Traffic Signal

700	ft2/unit
418	units

		AM				PM		
Possible LUC		in	out	total		in	out	total
710		392	53	445		72	349	421
222		29	84	113		83	51	134
Average		211	68.5	279		77.5	200	278

Block North of Site



Subject Site

LEGEND

XX AM Peak Hour Volumes
(XX) PM Peak Hour Volumes
Traffic Signal

700	ft2/unit
490	units

		AM				PM		
Possible LUC		in	out	total		in	out	total
710		459	63	522		84	410	494
222		34	98	132		97	60	157
Average		247	80.5	327		90.5	235	326

Block South of Site

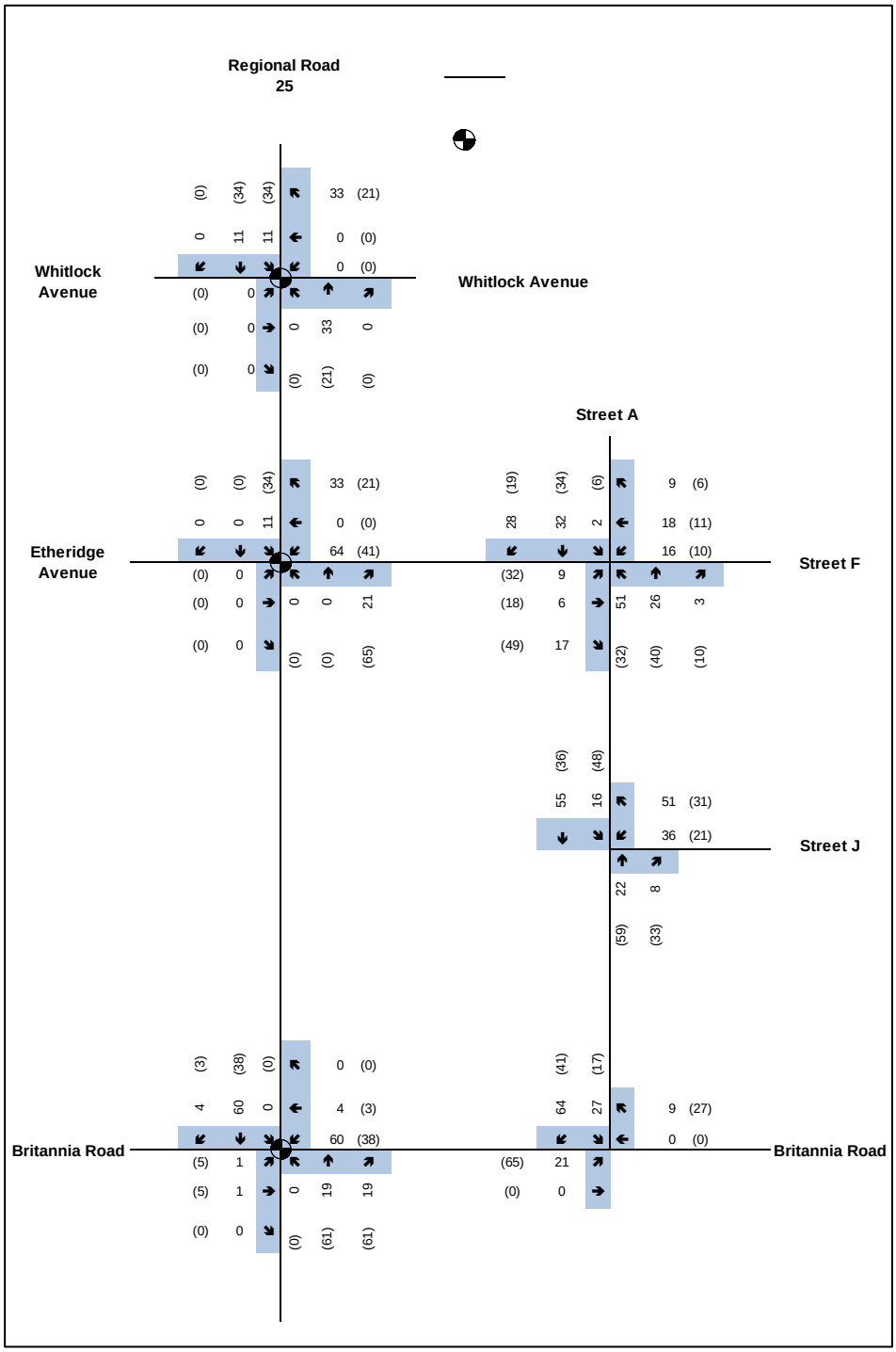
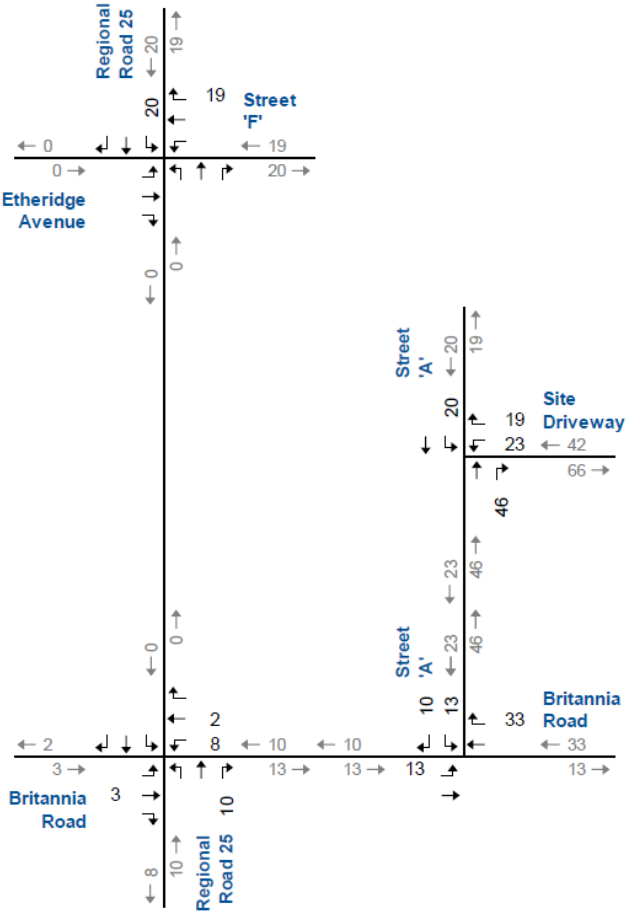
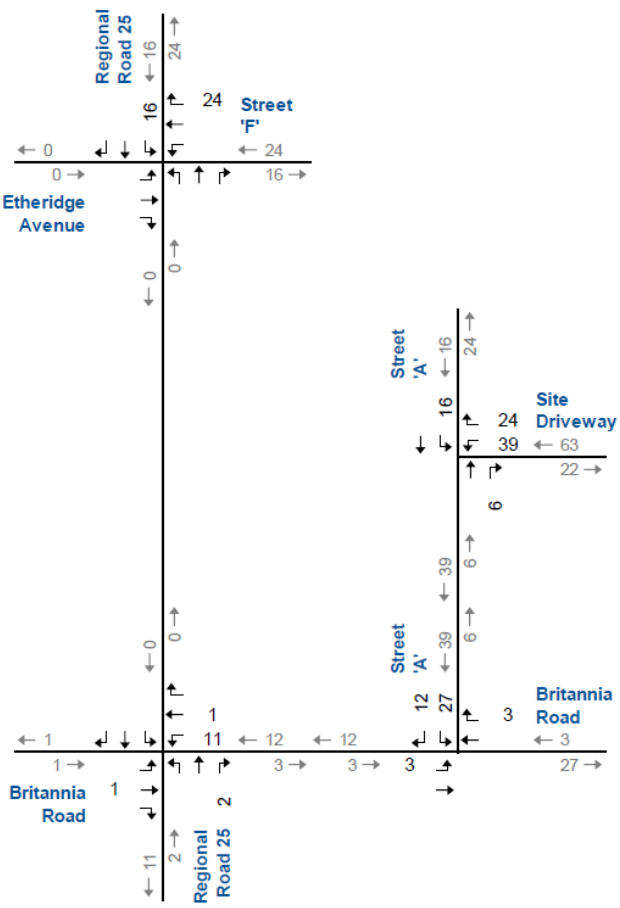


Figure 7 Estimated Site Trips (Ultimate Condition)



Site-Generated Traffic Volumes PM Peak Hour

Figure 3.3b



Site-Generated Traffic Volumes AM Peak Hour

Figure 3.3a

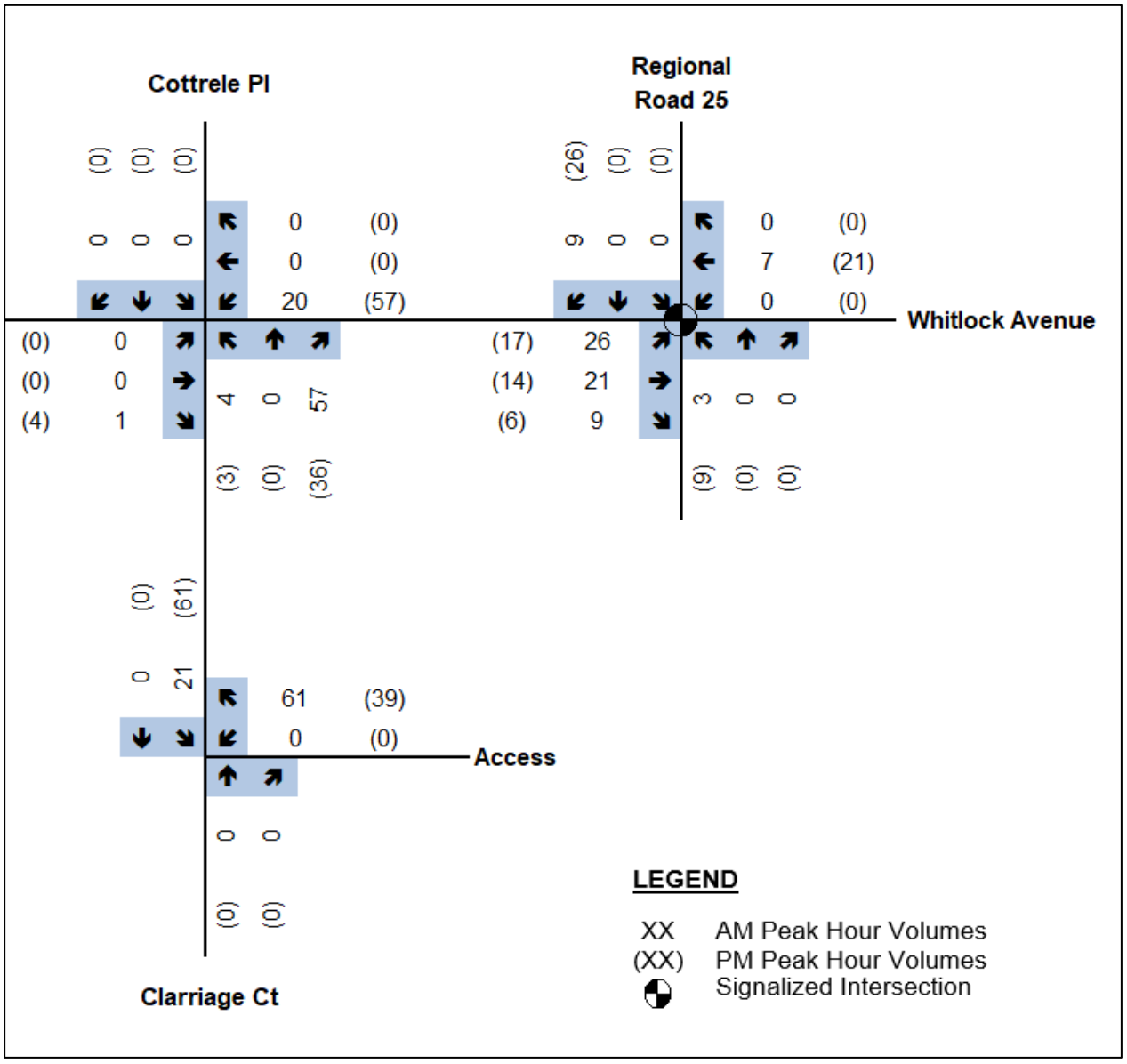


Figure 6 Estimated Site Trips

6. Future Total Traffic

6.1 Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak study hours for the 2025 and 2030 planning horizons were derived by combining the future background traffic volumes with the corresponding estimates of site trips generated by the subject site. The 2025 and 2030 future total traffic volumes at the study area intersections are summarized in Figure 7 and 8, respectively.

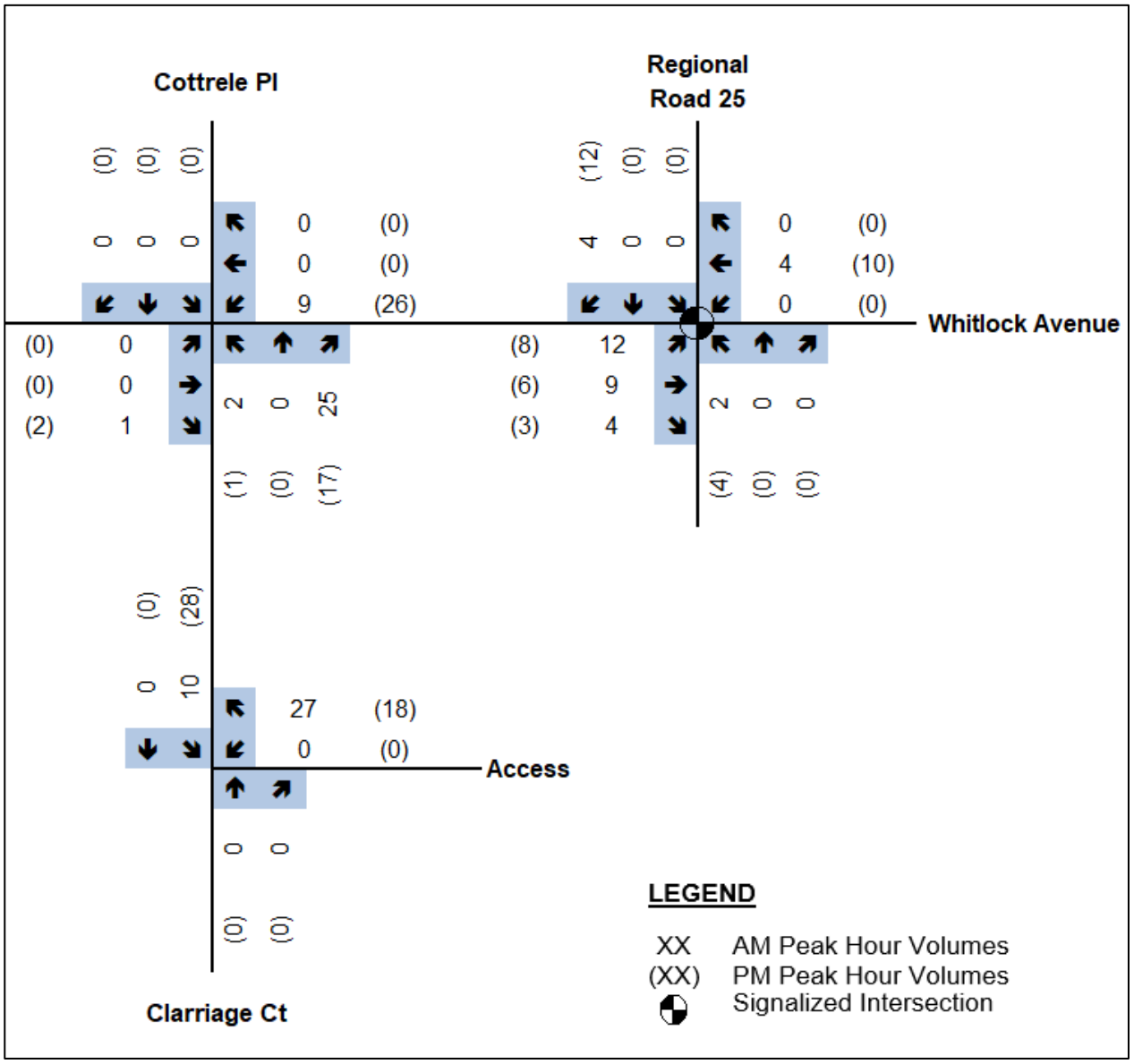
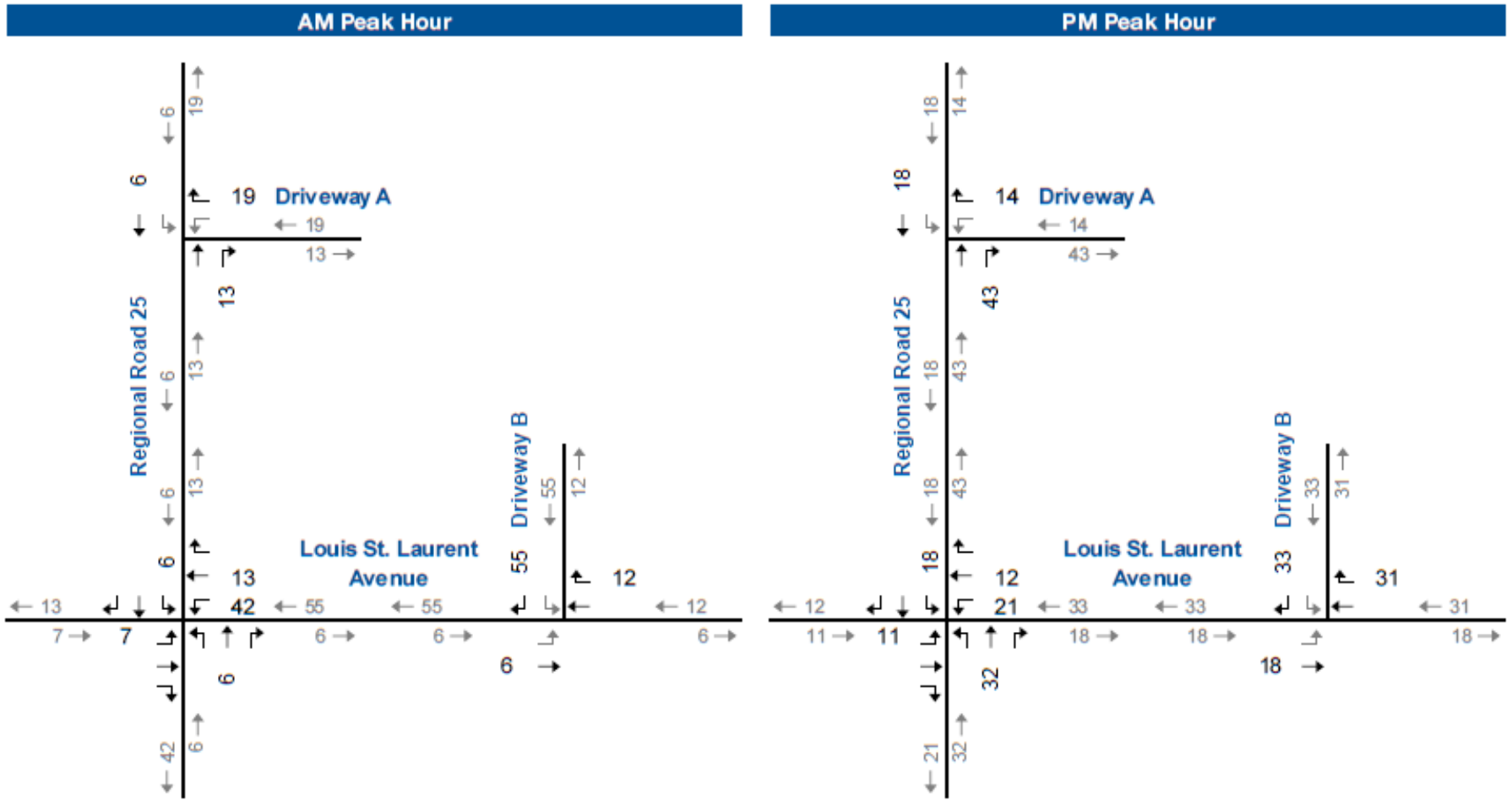


Figure 7 Estimated Site Trips

6. Future Total Traffic

6.1 Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak study hours for the 2025 and 2030 planning horizons were derived by combining the future background traffic volumes with the corresponding estimates of site trips generated by the subject site. The 2025 and 2030 future total traffic volumes at the study area intersections are summarized in Figure 8 and 9, respectively.



Site Generated Traffic Volumes

6349 Regional Road 25 (West Site), Milton TIS, PS & TDM
190334

Figure 3.2

Appendix D

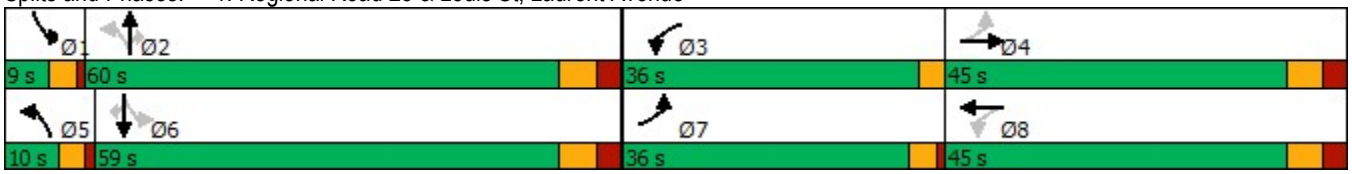
Synchro Outputs

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	306	539	147	297	543	98	99	716	222	65	688	93
Future Volume (vph)	306	539	147	297	543	98	99	716	222	65	688	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00			1.00		1.00					0.98
Frt		0.968			0.977				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3446	0	1755	3458	0	1722	3476	1585	1789	3318	1555
Flt Permitted	0.179			0.143			0.225			0.236		
Satd. Flow (perm)	323	3446	0	264	3458	0	407	3476	1585	444	3318	1528
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			13				194			87
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8	3					3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Adj. Flow (vph)	336	592	162	326	597	108	109	787	244	71	756	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	336	754	0	326	705	0	109	787	244	71	756	102
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	36.0	45.0		36.0	45.0		10.0	60.0	60.0	9.0	59.0	59.0
Total Split (%)	24.0%	30.0%		24.0%	30.0%		6.7%	40.0%	40.0%	6.0%	39.3%	39.3%
Maximum Green (s)	32.0	38.0		33.0	38.0		6.0	52.8	52.8	5.0	51.8	51.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	66.4	38.1		68.9	38.4		62.8	54.8	54.8	60.1	51.9	51.9
Actuated g/C Ratio	0.46	0.26		0.48	0.27		0.44	0.38	0.38	0.42	0.36	0.36
v/c Ratio	0.85	0.81		0.81	0.76		0.47	0.59	0.34	0.31	0.63	0.17
Control Delay	50.1	56.7		48.0	54.3		32.4	39.2	9.5	27.9	41.6	9.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	56.7		48.0	54.3		32.4	39.2	9.5	27.9	41.6	9.4
LOS	D	E		D	D		C	D	A	C	D	A
Approach Delay		54.6			52.3			32.2			37.1	
Approach LOS		D			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 143.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 44.1		Intersection LOS: D	
Intersection Capacity Utilization 80.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	336	754	326	705	109	787	244	71	756	102
v/c Ratio	0.85	0.81	0.81	0.76	0.47	0.59	0.34	0.31	0.63	0.17
Control Delay	50.1	56.7	48.0	54.3	32.4	39.2	9.5	27.9	41.6	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	56.7	48.0	54.3	32.4	39.2	9.5	27.9	41.6	9.4
Queue Length 50th (m)	64.4	104.6	64.8	96.7	18.1	97.1	9.4	11.5	94.6	2.8
Queue Length 95th (m)	100.7	135.1	100.6	125.8	32.3	125.3	30.7	22.4	122.7	16.0
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	467	928	472	931	232	1325	724	232	1197	606
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	0.72	0.81	0.69	0.76	0.47	0.59	0.34	0.31	0.63	0.17

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	306	539	147	297	543	98	99	716	222	65	688	93
Future Volume (vph)	306	539	147	297	543	98	99	716	222	65	688	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		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)	1721	3446		1755	3458		1721	3476	1585	1789	3318	1529
Flt Permitted	0.18	1.00		0.14	1.00		0.23	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	325	3446		263	3458		408	3476	1585	445	3318	1529
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	336	592	162	326	597	108	109	787	244	71	756	102
RTOR Reduction (vph)	0	16	0	0	10	0	0	0	120	0	0	55
Lane Group Flow (vph)	336	738	0	326	695	0	109	787	124	71	756	47
Confl. Peds. (#/hr)	8		1	1		8	3					3
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	63.4	38.1		65.0	38.4		60.8	54.8	54.8	56.6	52.7	52.7
Effective Green, g (s)	63.4	38.1		65.0	38.4		60.8	54.8	54.8	56.6	52.7	52.7
Actuated g/C Ratio	0.44	0.26		0.45	0.27		0.42	0.38	0.38	0.39	0.36	0.36
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	386	907		392	918		226	1317	600	210	1209	557
v/s Ratio Prot	0.15	0.21		c0.15	0.20		c0.02	0.23		0.01	c0.23	
v/s Ratio Perm	c0.23			0.22			0.18		0.08	0.12		0.03
v/c Ratio	0.87	0.81		0.83	0.76		0.48	0.60	0.21	0.34	0.63	0.08
Uniform Delay, d1	31.9	49.9		35.4	48.8		27.7	36.0	30.2	29.1	37.8	30.1
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	18.8	7.9		15.4	5.8		1.6	2.0	0.8	1.0	2.4	0.3
Delay (s)	50.7	57.8		50.8	54.6		29.4	38.1	31.0	30.0	40.3	30.4
Level of Service	D	E		D	D		C	D	C	C	D	C
Approach Delay (s)		55.6			53.4			35.7			38.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	144.6	Sum of lost time (s)	22.2
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	7	0	1046	1145	27
Future Volume (vph)	0	7	0	1046	1145	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.997	
Flt Protected						
Satd. Flow (prot)	0	1662	0	3476	3403	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	3476	3403	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	5%	7%	4%
Adj. Flow (vph)	0	8	0	1175	1287	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	0	1175	1317	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	7	0	1046	1145	27
Future Volume (Veh/h)	0	7	0	1046	1145	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	8	0	1175	1287	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)				183	334	
pX, platoon unblocked	0.90	0.82	0.82			
vC, conflicting volume	1890	658	1287			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	957	143	910			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	234	726	620			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	588	588	858	459
Volume Left	0	0	0	0	0
Volume Right	8	0	0	0	30
cSH	726	1700	1700	1700	1700
Volume to Capacity	0.01	0.35	0.35	0.50	0.27
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0
Control Delay (s)	10.0	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.0	0.0		0.0	
Approach LOS	B				

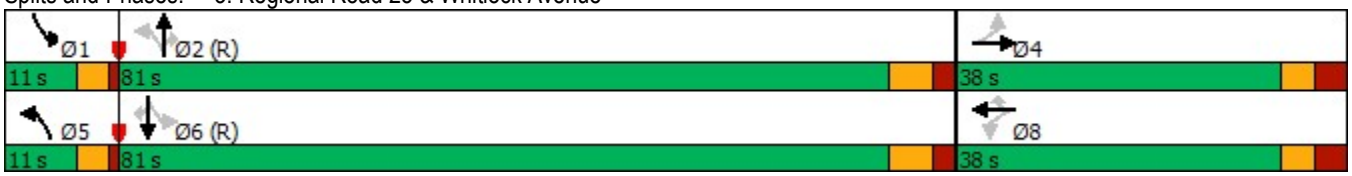
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	21	83	48	29	97	35	830	16	47	991	64
Future Volume (vph)	119	21	83	48	29	97	35	830	16	47	991	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00		0.98	1.00		0.98
Frt		0.880				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1579	0	1755	1795	1570	1772	3476	1445	1789	3380	1585
Flt Permitted	0.735			0.666			0.175			0.236		
Satd. Flow (perm)	1361	1579	0	1226	1795	1540	326	3476	1413	444	3380	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97				113			63			63
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Adj. Flow (vph)	138	24	97	56	34	113	41	965	19	55	1152	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	121	0	56	34	113	41	965	19	55	1152	74
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.42	0.27		0.19	0.08	0.25	0.14	0.48	0.02	0.15	0.59	0.08
Control Delay	46.2	12.8		41.2	38.8	8.2	8.1	17.4	0.1	8.1	19.6	4.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	12.8		41.2	38.8	8.2	8.1	17.4	0.1	8.1	19.6	4.0
LOS	D	B		D	D	A	A	B	A	A	B	A
Approach Delay		30.6			22.5			16.7			18.2	
Approach LOS		C			C			B			B	

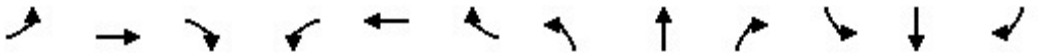
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



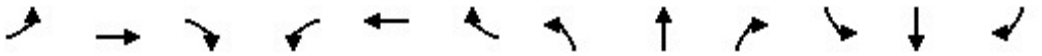
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	138	121	56	34	113	41	965	19	55	1152	74
v/c Ratio	0.42	0.27	0.19	0.08	0.25	0.14	0.48	0.02	0.15	0.59	0.08
Control Delay	46.2	12.8	41.2	38.8	8.2	8.1	17.4	0.1	8.1	19.6	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	12.8	41.2	38.8	8.2	8.1	17.4	0.1	8.1	19.6	4.0
Queue Length 50th (m)	30.0	4.8	11.5	6.8	0.0	3.2	73.5	0.0	4.3	96.0	1.2
Queue Length 95th (m)	47.4	18.4	22.2	14.7	12.8	6.6	84.0	0.0	8.2	108.4	7.0
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	329	456	297	434	458	288	1992	836	359	1937	913
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.27	0.19	0.08	0.25	0.14	0.48	0.02	0.15	0.59	0.08

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	21	83	48	29	97	35	830	16	47	991	64
Future Volume (vph)	119	21	83	48	29	97	35	830	16	47	991	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1759	1578		1749	1795	1540	1772	3476	1413	1789	3380	1547
Flt Permitted	0.73	1.00		0.67	1.00	1.00	0.17	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	1361	1578		1227	1795	1540	326	3476	1413	444	3380	1547
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	138	24	97	56	34	113	41	965	19	55	1152	74
RTOR Reduction (vph)	0	73	0	0	0	86	0	0	8	0	0	27
Lane Group Flow (vph)	138	48	0	56	34	27	41	965	11	55	1152	47
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	329	382		297	434	373	282	1992	809	350	1937	886
v/s Ratio Prot		0.03			0.02		0.01	0.28		c0.01	c0.34	
v/s Ratio Perm	c0.10			0.05		0.02	0.08		0.01	0.09		0.03
v/c Ratio	0.42	0.12		0.19	0.08	0.07	0.15	0.48	0.01	0.16	0.59	0.05
Uniform Delay, d1	41.5	38.5		39.1	38.0	38.0	11.2	16.4	11.9	10.3	18.0	12.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.7		1.4	0.4	0.4	1.1	0.8	0.0	1.0	1.4	0.1
Delay (s)	45.4	39.1		40.5	38.4	38.4	12.3	17.2	12.0	11.3	19.3	12.3
Level of Service	D	D		D	D	D	B	B	B	B	B	B
Approach Delay (s)		42.5			39.0			17.0			18.6	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

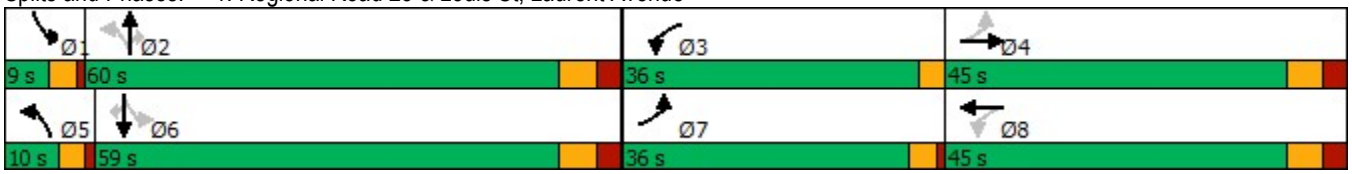


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	342	71	318	534	74	187	724	327	93	635	212
Future Volume (vph)	198	342	71	318	534	74	187	724	327	93	635	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00				0.98	1.00		
Frt		0.974			0.982				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3528	0	1807	3541	0	1789	3510	1633	1825	3544	1633
Flt Permitted	0.259			0.265			0.314			0.279		
Satd. Flow (perm)	496	3528	0	504	3541	0	591	3510	1605	535	3544	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			10				283			176
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Adj. Flow (vph)	208	360	75	335	562	78	197	762	344	98	668	223
Shared Lane Traffic (%)												
Lane Group Flow (vph)	208	435	0	335	640	0	197	762	344	98	668	223
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	36.0	45.0		36.0	45.0		10.0	60.0	60.0	9.0	59.0	59.0
Total Split (%)	24.0%	30.0%		24.0%	30.0%		6.7%	40.0%	40.0%	6.0%	39.3%	39.3%
Maximum Green (s)	32.0	38.0		33.0	38.0		6.0	52.8	52.8	5.0	51.8	51.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Min		None	Min		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	38.9	20.5		51.4	27.9		62.4	53.1	53.1	60.4	52.1	52.1
Actuated g/C Ratio	0.31	0.17		0.42	0.23		0.50	0.43	0.43	0.49	0.42	0.42
v/c Ratio	0.65	0.73		0.73	0.79		0.55	0.51	0.40	0.31	0.45	0.28
Control Delay	34.9	55.2		35.4	52.5		26.2	28.6	7.1	20.2	28.1	7.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	55.2		35.4	52.5		26.2	28.6	7.1	20.2	28.1	7.8
LOS	C	E		D	D		C	C	A	C	C	A
Approach Delay		48.6			46.6			22.6			22.7	
Approach LOS		D			D			C			C	

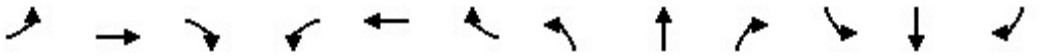
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 123.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 32.9		Intersection LOS: C	
Intersection Capacity Utilization 76.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	208	435	335	640	197	762	344	98	668	223
v/c Ratio	0.65	0.73	0.73	0.79	0.55	0.51	0.40	0.31	0.45	0.28
Control Delay	34.9	55.2	35.4	52.5	26.2	28.6	7.1	20.2	28.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	55.2	35.4	52.5	26.2	28.6	7.1	20.2	28.1	7.8
Queue Length 50th (m)	33.2	51.3	57.3	76.2	24.3	69.3	8.6	11.4	59.5	6.7
Queue Length 95th (m)	50.0	73.0	81.1	102.2	47.8	105.8	33.9	25.4	91.7	26.0
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	545	1100	558	1100	356	1505	850	313	1491	789
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	0.38	0.40	0.60	0.58	0.55	0.51	0.40	0.31	0.45	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	342	71	318	534	74	187	724	327	93	635	212
Future Volume (vph)	198	342	71	318	534	74	187	724	327	93	635	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	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	1.00
Frt	1.00	0.97		1.00	0.98		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)	1823	3529		1807	3542		1789	3510	1606	1825	3544	1633
Flt Permitted	0.26	1.00		0.26	1.00		0.31	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)	496	3529		503	3542		591	3510	1606	536	3544	1633
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	208	360	75	335	562	78	197	762	344	98	668	223
RTOR Reduction (vph)	0	13	0	0	8	0	0	0	162	0	0	102
Lane Group Flow (vph)	208	422	0	335	632	0	197	762	182	98	668	121
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	35.9	20.5		47.4	28.0		59.1	53.1	53.1	57.1	52.1	52.1
Effective Green, g (s)	35.9	20.5		47.4	28.0		59.1	53.1	53.1	57.1	52.1	52.1
Actuated g/C Ratio	0.29	0.17		0.38	0.23		0.48	0.43	0.43	0.46	0.42	0.42
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	309	584		444	801		340	1506	689	299	1492	687
v/s Ratio Prot	0.08	0.12		c0.15	c0.18		c0.03	0.22		0.01	0.19	
v/s Ratio Perm	0.11			0.14			c0.25		0.11	0.14		0.07
v/c Ratio	0.67	0.72		0.75	0.79		0.58	0.51	0.26	0.33	0.45	0.18
Uniform Delay, d1	35.5	48.9		29.6	45.1		21.9	25.7	22.7	19.6	25.5	22.4
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	5.7	4.4		8.4	5.2		2.4	1.2	0.9	0.6	1.0	0.6
Delay (s)	41.2	53.3		38.1	50.3		24.3	27.0	23.7	20.3	26.5	22.9
Level of Service	D	D		D	D		C	C	C	C	C	C
Approach Delay (s)		49.4			46.1			25.7			25.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	123.7	Sum of lost time (s)	22.2
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	1298	918	70
Future Volume (vph)	0	4	0	1298	918	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.989	
Flt Protected						
Satd. Flow (prot)	0	1662	0	3544	3512	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	3544	3512	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	0	4	0	1324	937	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	1324	1008	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	0	1298	918	70
Future Volume (Veh/h)	0	4	0	1298	918	70
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	4	0	1324	937	71
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.84	0.88	0.88			
vC, conflicting volume	1634	504	937			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	740	168	659			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	300	752	827			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	662	662	625	383
Volume Left	0	0	0	0	0
Volume Right	4	0	0	0	71
cSH	752	1700	1700	1700	1700
Volume to Capacity	0.01	0.39	0.39	0.37	0.23
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0
Control Delay (s)	9.8	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.8	0.0		0.0	
Approach LOS	A				

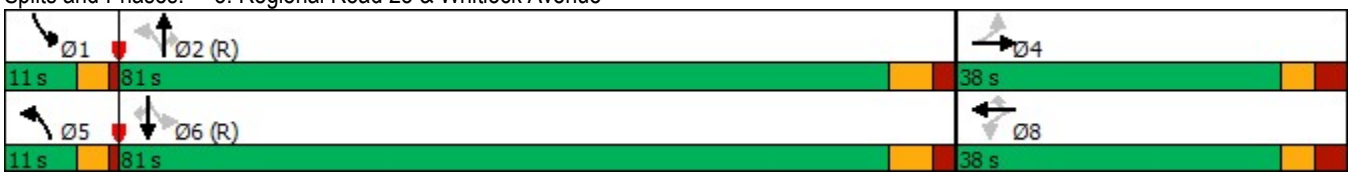
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	10	29	13	11	80	88	1141	32	81	733	108
Future Volume (vph)	82	10	29	13	11	80	88	1141	32	81	733	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		
Frt		0.887				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1704	0	1825	1762	1617	1789	3544	1633	1755	3510	1617
Flt Permitted	0.750			0.731			0.316			0.164		
Satd. Flow (perm)	1421	1704	0	1404	1762	1591	595	3544	1593	303	3510	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				83			63			63
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	3					3			2	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Adj. Flow (vph)	85	10	30	14	11	83	92	1189	33	84	764	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	85	40	0	14	11	83	92	1189	33	84	764	113
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.25	0.09		0.04	0.03	0.19	0.21	0.59	0.04	0.31	0.38	0.12
Control Delay	42.0	17.4		38.3	37.9	8.9	8.4	19.3	0.7	10.2	15.8	6.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	17.4		38.3	37.9	8.9	8.4	19.3	0.7	10.2	15.8	6.3
LOS	D	B		D	D	A	A	B	A	B	B	A
Approach Delay		34.2			15.7			18.1			14.2	
Approach LOS		C			B			B			B	

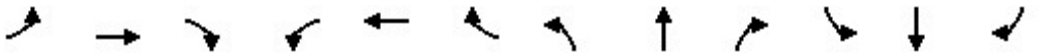
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 82.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	40	14	11	83	92	1189	33	84	764	113
v/c Ratio	0.25	0.09	0.04	0.03	0.19	0.21	0.59	0.04	0.31	0.38	0.12
Control Delay	42.0	17.4	38.3	37.9	8.9	8.4	19.3	0.7	10.2	15.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	17.4	38.3	37.9	8.9	8.4	19.3	0.7	10.2	15.8	6.3
Queue Length 50th (m)	17.7	2.0	2.8	2.2	0.0	7.4	98.4	0.0	6.7	53.7	5.4
Queue Length 95th (m)	32.5	11.3	8.2	7.2	12.8	13.2	118.2	1.3	12.2	67.0	13.8
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	344	435	340	426	448	448	2030	939	273	2011	953
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.09	0.04	0.03	0.19	0.21	0.59	0.04	0.31	0.38	0.12

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	10	29	13	11	80	88	1141	32	81	733	108
Future Volume (vph)	82	10	29	13	11	80	88	1141	32	81	733	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	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	1.00	1.00
Frt	1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1800	1705		1825	1762	1591	1789	3544	1593	1755	3510	1617
Flt Permitted	0.75	1.00		0.73	1.00	1.00	0.32	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	1422	1705		1404	1762	1591	595	3544	1593	303	3510	1617
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	85	10	30	14	11	83	92	1189	33	84	764	112
RTOR Reduction (vph)	0	23	0	0	0	63	0	0	14	0	0	27
Lane Group Flow (vph)	85	17	0	14	11	20	92	1189	19	84	764	86
Confl. Peds. (#/hr)	3					3			2	2		
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	344	413		340	426	385	437	2030	912	268	2011	926
v/s Ratio Prot		0.01			0.01		0.01	c0.34		c0.02	0.22	
v/s Ratio Perm	c0.06			0.01		0.01	0.12		0.01	0.18		0.05
v/c Ratio	0.25	0.04		0.04	0.03	0.05	0.21	0.59	0.02	0.31	0.38	0.09
Uniform Delay, d1	39.7	37.7		37.7	37.6	37.8	9.9	17.8	12.0	12.0	15.1	12.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.2		0.2	0.1	0.3	1.1	1.2	0.0	3.0	0.5	0.2
Delay (s)	41.4	37.9		37.9	37.7	38.1	11.0	19.1	12.0	15.1	15.7	12.7
Level of Service	D	D		D	D	D	B	B	B	B	B	B
Approach Delay (s)		40.3			38.0			18.3			15.3	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

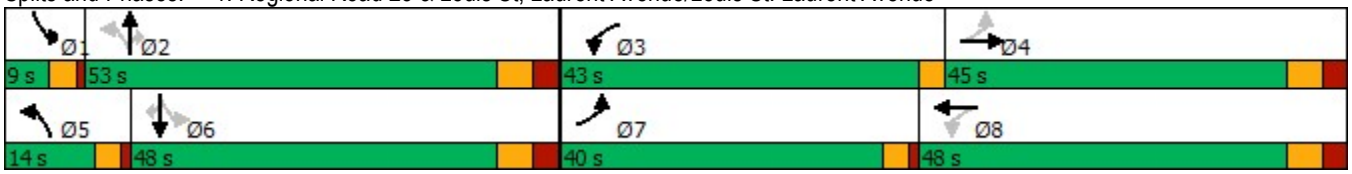
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	575	191	428	577	101	138	804	270	73	786	96
Future Volume (vph)	358	575	191	428	577	101	138	804	270	73	786	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00			1.00							0.98
Frt		0.963			0.978				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3426	0	1755	3462	0	1722	3476	1585	1789	3318	1555
Flt Permitted	0.288			0.124			0.139			0.208		
Satd. Flow (perm)	520	3426	0	229	3462	0	252	3476	1585	392	3318	1528
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			13				196			116
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8	3					3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Adj. Flow (vph)	358	575	191	428	577	101	138	804	270	73	786	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	766	0	428	678	0	138	804	270	73	786	96
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	40.0	45.0		43.0	48.0		14.0	53.0	53.0	9.0	48.0	48.0
Total Split (%)	26.7%	30.0%		28.7%	32.0%		9.3%	35.3%	35.3%	6.0%	32.0%	32.0%
Maximum Green (s)	36.0	38.0		40.0	41.0		10.0	45.8	45.8	5.0	40.8	40.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	67.1	38.1		79.5	45.5		58.0	47.7	47.7	49.1	40.9	40.9
Actuated g/C Ratio	0.46	0.26		0.55	0.31		0.40	0.33	0.33	0.34	0.28	0.28
v/c Ratio	0.78	0.83		0.88	0.62		0.69	0.70	0.41	0.40	0.84	0.19
Control Delay	33.9	57.6		54.9	45.2		48.2	47.5	13.6	36.8	58.5	4.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	57.6		54.9	45.2		48.2	47.5	13.6	36.8	58.5	4.8
LOS	C	E		D	D		D	D	B	D	E	A
Approach Delay		50.1			49.0			40.0			51.4	
Approach LOS		D			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 144.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 47.3		Intersection LOS: D	
Intersection Capacity Utilization 93.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue/Louis St. Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	358	766	428	678	138	804	270	73	786	96
v/c Ratio	0.78	0.83	0.88	0.62	0.69	0.70	0.41	0.40	0.84	0.19
Control Delay	33.9	57.6	54.9	45.2	48.2	47.5	13.6	36.8	58.5	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	57.6	54.9	45.2	48.2	47.5	13.6	36.8	58.5	4.8
Queue Length 50th (m)	57.3	108.5	95.6	85.8	26.3	110.7	15.6	13.4	114.7	0.0
Queue Length 95th (m)	81.2	#136.9	138.2	116.7	#43.8	138.5	41.4	25.0	#145.9	9.4
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	570	923	549	1097	203	1147	654	181	938	515
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	0.63	0.83	0.78	0.62	0.68	0.70	0.41	0.40	0.84	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)	358	575	191	428	577	101	138	804	270	73	786	96
Future Volume (vph)	358	575	191	428	577	101	138	804	270	73	786	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		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)	1720	3424		1755	3461		1722	3476	1585	1789	3318	1529
Flt Permitted	0.29	1.00		0.12	1.00		0.14	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	521	3424		230	3461		253	3476	1585	391	3318	1529
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	358	575	191	428	577	101	138	804	270	73	786	96
RTOR Reduction (vph)	0	21	0	0	9	0	0	0	132	0	0	68
Lane Group Flow (vph)	358	745	0	428	669	0	138	804	138	73	786	28
Confl. Peds. (#/hr)	8		1	1		8	3					3
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	64.1	38.1		75.5	45.5		55.6	47.7	47.7	45.6	41.7	41.7
Effective Green, g (s)	64.1	38.1		75.5	45.5		55.6	47.7	47.7	45.6	41.7	41.7
Actuated g/C Ratio	0.44	0.26		0.52	0.31		0.38	0.33	0.33	0.31	0.29	0.29
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	444	897		480	1083		196	1141	520	160	952	438
v/s Ratio Prot	0.14	0.22		c0.21	0.19		c0.05	0.23		0.01	c0.24	
v/s Ratio Perm	0.21			c0.25			0.22		0.09	0.13		0.02
v/c Ratio	0.81	0.83		0.89	0.62		0.70	0.70	0.27	0.46	0.83	0.06
Uniform Delay, d1	29.4	50.5		39.4	42.5		33.5	42.6	35.9	37.8	48.4	37.6
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	10.3	8.8		19.6	2.6		10.9	3.7	1.3	2.1	8.1	0.3
Delay (s)	39.7	59.3		59.0	45.1		44.4	46.3	37.2	39.9	56.5	37.9
Level of Service	D	E		E	D		D	D	D	D	E	D
Approach Delay (s)		53.1			50.5			44.1			53.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	145.3	Sum of lost time (s)	22.2
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	7	0	1223	1304	142
Future Volume (vph)	0	7	0	1223	1304	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.985	
Flt Protected						
Satd. Flow (prot)	0	1662	0	3476	3369	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	3476	3369	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	5%	7%	4%
Adj. Flow (vph)	0	7	0	1223	1304	142
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	0	1223	1446	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	7	0	1223	1304	142
Future Volume (Veh/h)	0	7	0	1223	1304	142
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	7	0	1223	1304	142
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.86	0.79	0.79			
vC, conflicting volume	1986	723	1304			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1048	100	840			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	195	740	631			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	7	612	612	869	577
Volume Left	0	0	0	0	0
Volume Right	7	0	0	0	142
cSH	740	1700	1700	1700	1700
Volume to Capacity	0.01	0.36	0.36	0.51	0.34
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0
Control Delay (s)	9.9	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.9	0.0		0.0	
Approach LOS	A				

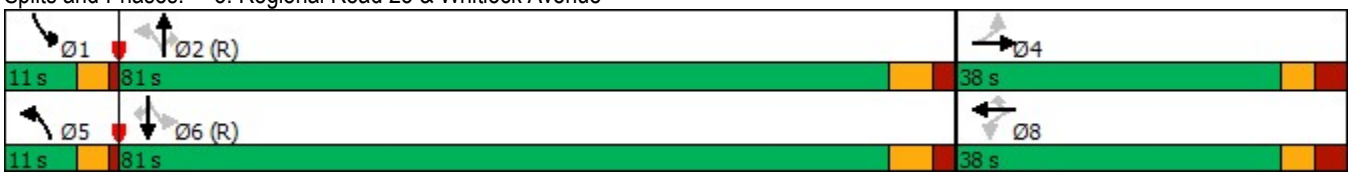
Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	50.6%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	51	99	49	41	167	108	893	16	70	1150	79
Future Volume (vph)	161	51	99	49	41	167	108	893	16	70	1150	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00		0.98	1.00		0.98
Frt		0.901				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1559	0	1755	1795	1570	1772	3476	1445	1789	3380	1585
Flt Permitted	0.730			0.610			0.175			0.263		
Satd. Flow (perm)	1352	1559	0	1123	1795	1540	326	3476	1413	495	3380	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71				167			63			63
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Adj. Flow (vph)	161	51	99	49	41	167	108	893	16	70	1150	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	150	0	49	41	167	108	893	16	70	1150	79
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.49	0.35		0.18	0.09	0.33	0.38	0.45	0.02	0.18	0.59	0.09
Control Delay	48.4	23.8		41.2	39.1	7.6	11.1	16.8	0.1	8.2	19.6	4.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	23.8		41.2	39.1	7.6	11.1	16.8	0.1	8.2	19.6	4.3
LOS	D	C		D	D	A	B	B	A	A	B	A
Approach Delay		36.6			19.0			16.0			18.0	
Approach LOS		D			B			B			B	

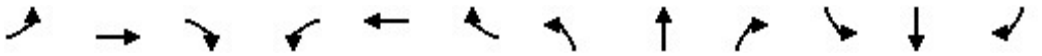
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 92.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



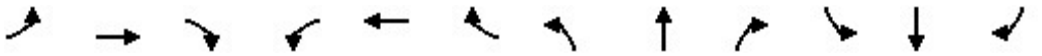
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	150	49	41	167	108	893	16	70	1150	79
v/c Ratio	0.49	0.35	0.18	0.09	0.33	0.38	0.45	0.02	0.18	0.59	0.09
Control Delay	48.4	23.8	41.2	39.1	7.6	11.1	16.8	0.1	8.2	19.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	23.8	41.2	39.1	7.6	11.1	16.8	0.1	8.2	19.6	4.3
Queue Length 50th (m)	35.7	16.3	10.0	8.2	0.0	8.8	66.1	0.0	5.6	95.8	1.7
Queue Length 95th (m)	58.1	35.4	21.2	17.7	17.4	15.1	81.3	0.0	10.5	116.2	8.5
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	327	431	272	434	499	288	1992	836	389	1937	913
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.35	0.18	0.09	0.33	0.38	0.45	0.02	0.18	0.59	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	51	99	49	41	167	108	893	16	70	1150	79
Future Volume (vph)	161	51	99	49	41	167	108	893	16	70	1150	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1759	1559		1750	1795	1540	1772	3476	1413	1789	3380	1547
Flt Permitted	0.73	1.00		0.61	1.00	1.00	0.18	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	1352	1559		1124	1795	1540	327	3476	1413	495	3380	1547
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	161	51	99	49	41	167	108	893	16	70	1150	79
RTOR Reduction (vph)	0	54	0	0	0	127	0	0	7	0	0	27
Lane Group Flow (vph)	161	96	0	49	41	40	108	893	9	70	1150	52
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	327	377		272	434	373	282	1992	809	380	1937	886
v/s Ratio Prot		0.06			0.02		c0.02	0.26		0.01	c0.34	
v/s Ratio Perm	c0.12			0.04		0.03	0.22		0.01	0.11		0.03
v/c Ratio	0.49	0.26		0.18	0.09	0.11	0.38	0.45	0.01	0.18	0.59	0.06
Uniform Delay, d1	42.4	39.8		39.0	38.2	38.3	12.0	15.9	11.9	10.2	18.0	12.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	1.6		1.4	0.4	0.6	3.9	0.7	0.0	1.1	1.3	0.1
Delay (s)	47.6	41.4		40.5	38.6	38.9	15.9	16.7	12.0	11.2	19.3	12.4
Level of Service	D	D		D	D	D	B	B	B	B	B	B
Approach Delay (s)		44.6			39.2			16.5			18.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



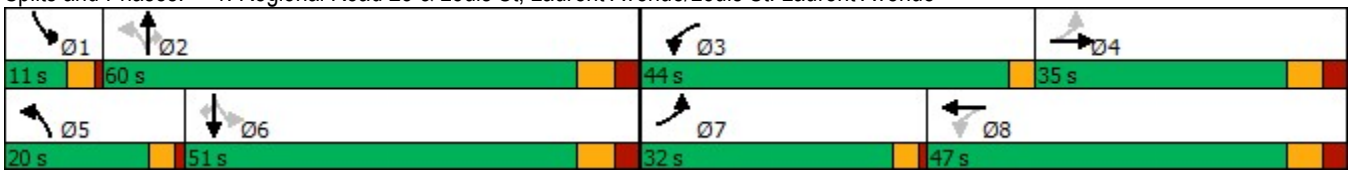
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	396	158	419	567	76	224	817	364	96	746	220
Future Volume (vph)	320	396	158	419	567	76	224	817	364	96	746	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00				0.98	1.00		
Frt		0.957			0.982				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3450	0	1807	3542	0	1789	3510	1633	1825	3544	1633
Flt Permitted	0.308			0.210			0.185			0.239		
Satd. Flow (perm)	588	3450	0	399	3542	0	348	3510	1605	459	3544	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			9				279			144
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Adj. Flow (vph)	320	396	158	419	567	76	224	817	364	96	746	220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	320	554	0	419	643	0	224	817	364	96	746	220
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	32.0	35.0		44.0	47.0		20.0	60.0	60.0	11.0	51.0	51.0
Total Split (%)	21.3%	23.3%		29.3%	31.3%		13.3%	40.0%	40.0%	7.3%	34.0%	34.0%
Maximum Green (s)	28.0	28.0		41.0	40.0		16.0	52.8	52.8	7.0	43.8	43.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	55.7	30.9		70.2	40.4		67.0	52.9	52.9	55.2	45.1	45.1
Actuated g/C Ratio	0.39	0.21		0.49	0.28		0.46	0.37	0.37	0.38	0.31	0.31
v/c Ratio	0.77	0.72		0.82	0.64		0.72	0.64	0.48	0.40	0.67	0.36
Control Delay	39.8	56.5		42.3	48.9		38.9	41.0	10.8	28.9	47.7	16.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	56.5		42.3	48.9		38.9	41.0	10.8	28.9	47.7	16.0
LOS	D	E		D	D		D	D	B	C	D	B
Approach Delay		50.4			46.3			32.8			39.4	
Approach LOS		D			D			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 144.2
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 93.9% ICU Level of Service F
Analysis Period (min) 15

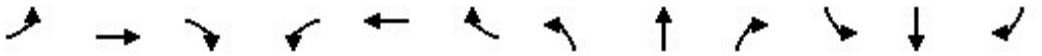
Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue/Louis St. Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	320	554	419	643	224	817	364	96	746	220
v/c Ratio	0.77	0.72	0.82	0.64	0.72	0.64	0.48	0.40	0.67	0.36
Control Delay	39.8	56.5	42.3	48.9	38.9	41.0	10.8	28.9	47.7	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	56.5	42.3	48.9	38.9	41.0	10.8	28.9	47.7	16.0
Queue Length 50th (m)	56.5	73.7	80.3	84.0	38.2	100.4	16.1	15.1	98.5	15.8
Queue Length 95th (m)	82.6	101.3	119.8	110.7	#61.9	130.4	45.8	28.2	128.1	39.9
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	490	766	595	998	321	1286	765	242	1107	609
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	0.65	0.72	0.70	0.64	0.70	0.64	0.48	0.40	0.67	0.36

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)	320	396	158	419	567	76	224	817	364	96	746	220
Future Volume (vph)	320	396	158	419	567	76	224	817	364	96	746	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	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	1.00
Frt	1.00	0.96		1.00	0.98		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)	1823	3451		1807	3543		1789	3510	1605	1825	3544	1633
Flt Permitted	0.31	1.00		0.21	1.00		0.18	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	591	3451		399	3543		348	3510	1605	460	3544	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	320	396	158	419	567	76	224	817	364	96	746	220
RTOR Reduction (vph)	0	28	0	0	6	0	0	0	177	0	0	99
Lane Group Flow (vph)	320	526	0	419	637	0	224	817	187	96	746	121
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	52.7	30.9		66.2	40.4		63.9	52.9	52.9	52.1	45.1	45.1
Effective Green, g (s)	52.7	30.9		66.2	40.4		63.9	52.9	52.9	52.1	45.1	45.1
Actuated g/C Ratio	0.37	0.21		0.46	0.28		0.44	0.37	0.37	0.36	0.31	0.31
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	401	738		498	991		301	1286	588	232	1107	510
v/s Ratio Prot	0.12	0.15		c0.19	0.18		c0.08	0.23		0.02	0.21	
v/s Ratio Perm	0.17			c0.20			c0.25		0.12	0.13		0.07
v/c Ratio	0.80	0.71		0.84	0.64		0.74	0.64	0.32	0.41	0.67	0.24
Uniform Delay, d1	35.6	52.6		30.9	45.6		28.7	37.7	32.8	31.9	43.2	36.8
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	10.6	5.8		13.4	3.2		9.6	2.4	1.4	1.2	3.3	1.1
Delay (s)	46.2	58.4		44.2	48.8		38.2	40.1	34.2	33.1	46.5	37.9
Level of Service	D	E		D	D		D	D	C	C	D	D
Approach Delay (s)		53.9			47.0			38.3			43.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	144.3	Sum of lost time (s)	22.2
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

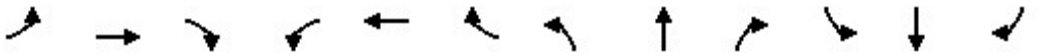
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	1468	1175	115
Future Volume (vph)	0	4	0	1468	1175	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.987	
Flt Protected						
Satd. Flow (prot)	0	1662	0	3544	3507	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	3544	3507	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Confl. Bikes (#/hr)						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	0	4	0	1468	1175	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	1468	1290	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	0	1468	1175	115
Future Volume (Veh/h)	0	4	0	1468	1175	115
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	4	0	1468	1175	115
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.85	0.82	0.82			
vC, conflicting volume	1966	645	1175			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	847	131	777			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	260	739	697			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	734	734	783	507
Volume Left	0	0	0	0	0
Volume Right	4	0	0	0	115
cSH	739	1700	1700	1700	1700
Volume to Capacity	0.01	0.43	0.43	0.46	0.30
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0
Control Delay (s)	9.9	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.9	0.0		0.0	
Approach LOS	A				

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	46.1%	ICU Level of Service		A
Analysis Period (min)	15			

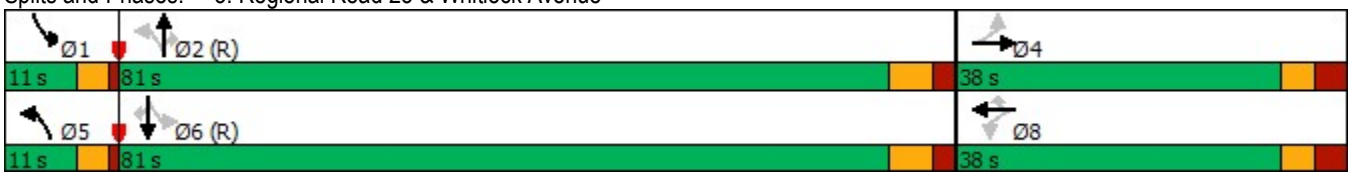


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	30	42	13	42	125	134	1238	33	152	989	150
Future Volume (vph)	110	30	42	13	42	125	134	1238	33	152	989	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		
Frt		0.912				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1752	0	1825	1762	1617	1789	3544	1633	1755	3510	1617
Flt Permitted	0.730			0.710			0.227			0.150		
Satd. Flow (perm)	1384	1752	0	1364	1762	1591	428	3544	1593	277	3510	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42				125			63			63
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	3					3			2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Adj. Flow (vph)	110	30	42	13	42	125	134	1238	33	152	989	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	72	0	13	42	125	134	1238	33	152	989	150
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.33	0.16		0.04	0.10	0.26	0.38	0.61	0.04	0.59	0.49	0.16
Control Delay	43.9	19.8		38.3	39.1	7.9	10.7	19.8	0.7	17.3	17.5	7.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	19.8		38.3	39.1	7.9	10.7	19.8	0.7	17.3	17.5	7.8
LOS	D	B		D	D	A	B	B	A	B	B	A
Approach Delay		34.3			17.4			18.5			16.4	
Approach LOS		C			B			B			B	

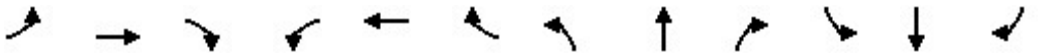
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	110	72	13	42	125	134	1238	33	152	989	150
v/c Ratio	0.33	0.16	0.04	0.10	0.26	0.38	0.61	0.04	0.59	0.49	0.16
Control Delay	43.9	19.8	38.3	39.1	7.9	10.7	19.8	0.7	17.3	17.5	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	19.8	38.3	39.1	7.9	10.7	19.8	0.7	17.3	17.5	7.8
Queue Length 50th (m)	23.4	6.0	2.6	8.4	0.0	11.0	104.6	0.0	12.6	75.7	9.6
Queue Length 95th (m)	40.7	18.3	8.1	18.1	15.4	18.2	125.6	1.3	20.5	92.3	19.5
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	335	456	330	426	480	349	2030	939	258	2011	953
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.16	0.04	0.10	0.26	0.38	0.61	0.04	0.59	0.49	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	30	42	13	42	125	134	1238	33	152	989	150
Future Volume (vph)	110	30	42	13	42	125	134	1238	33	152	989	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	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	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1801	1753		1825	1762	1591	1789	3544	1593	1755	3510	1617
Flt Permitted	0.73	1.00		0.71	1.00	1.00	0.23	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	1383	1753		1364	1762	1591	428	3544	1593	277	3510	1617
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	110	30	42	13	42	125	134	1238	33	152	989	150
RTOR Reduction (vph)	0	32	0	0	0	95	0	0	14	0	0	27
Lane Group Flow (vph)	110	40	0	13	42	30	134	1238	19	152	989	123
Confl. Peds. (#/hr)	3					3			2	2		
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	335	424		330	426	385	341	2030	912	253	2011	926
v/s Ratio Prot		0.02			0.02		0.02	c0.35		c0.03	0.28	
v/s Ratio Perm	c0.08			0.01		0.02	0.22		0.01	0.34		0.08
v/c Ratio	0.33	0.09		0.04	0.10	0.08	0.39	0.61	0.02	0.60	0.49	0.13
Uniform Delay, d1	40.5	38.2		37.7	38.2	38.0	11.1	18.2	12.0	13.7	16.5	12.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.4		0.2	0.5	0.4	3.4	1.4	0.0	10.1	0.9	0.3
Delay (s)	43.1	38.6		37.9	38.7	38.4	14.5	19.6	12.0	23.8	17.4	13.1
Level of Service	D	D		D	D	D	B	B	B	C	B	B
Approach Delay (s)		41.4			38.5			18.9			17.6	
Approach LOS		D			D			B			B	

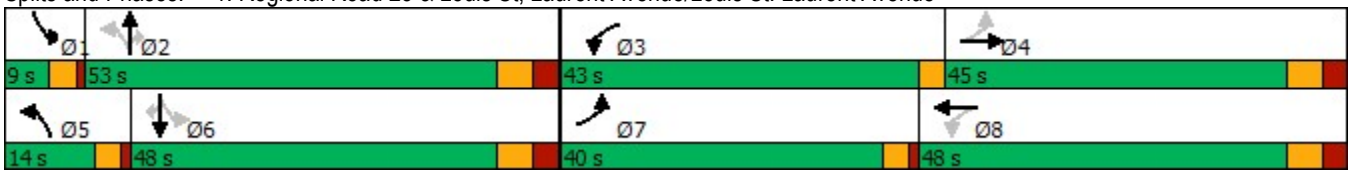
Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	575	209	446	577	101	138	804	270	73	796	96
Future Volume (vph)	358	575	209	446	577	101	138	804	270	73	796	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00			1.00							0.98
Frt		0.960			0.978				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3414	0	1755	3462	0	1722	3476	1585	1789	3318	1555
Flt Permitted	0.303			0.111			0.127			0.188		
Satd. Flow (perm)	547	3414	0	205	3462	0	230	3476	1585	354	3318	1528
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			13				196			116
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8	3					3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Adj. Flow (vph)	358	575	209	446	577	101	138	804	270	73	796	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	784	0	446	678	0	138	804	270	73	796	96
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	40.0	45.0		43.0	48.0		14.0	53.0	53.0	9.0	48.0	48.0
Total Split (%)	26.7%	30.0%		28.7%	32.0%		9.3%	35.3%	35.3%	6.0%	32.0%	32.0%
Maximum Green (s)	36.0	38.0		40.0	41.0		10.0	45.8	45.8	5.0	40.8	40.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	67.4	38.1		81.3	46.9		58.1	45.9	45.9	49.2	41.0	41.0
Actuated g/C Ratio	0.46	0.26		0.56	0.32		0.40	0.31	0.31	0.34	0.28	0.28
v/c Ratio	0.77	0.86		0.90	0.61		0.72	0.74	0.43	0.43	0.86	0.19
Control Delay	32.7	60.5		59.9	44.9		52.4	50.3	13.9	38.9	60.7	4.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	60.5		59.9	44.9		52.4	50.3	13.9	38.9	60.7	4.8
LOS	C	E		E	D		D	D	B	D	E	A
Approach Delay		51.8			50.9			42.5			53.5	
Approach LOS		D			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 146.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 49.4		Intersection LOS: D	
Intersection Capacity Utilization 95.5%		ICU Level of Service F	
Analysis Period (min) 15			

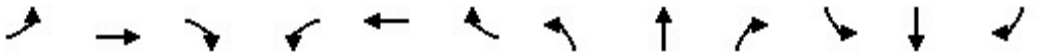
Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue/Louis St. Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	358	784	446	678	138	804	270	73	796	96
v/c Ratio	0.77	0.86	0.90	0.61	0.72	0.74	0.43	0.43	0.86	0.19
Control Delay	32.7	60.5	59.9	44.9	52.4	50.3	13.9	38.9	60.7	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	60.5	59.9	44.9	52.4	50.3	13.9	38.9	60.7	4.8
Queue Length 50th (m)	57.3	114.5	105.2	86.5	27.3	114.1	16.1	13.8	120.0	0.0
Queue Length 95th (m)	79.3	#146.6	#159.1	116.7	#48.1	138.5	41.4	25.0	#152.4	9.4
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	572	911	538	1118	193	1089	631	168	929	511
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	0.63	0.86	0.83	0.61	0.72	0.74	0.43	0.43	0.86	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)	358	575	209	446	577	101	138	804	270	73	796	96
Future Volume (vph)	358	575	209	446	577	101	138	804	270	73	796	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		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)	1720	3414		1755	3461		1722	3476	1585	1789	3318	1528
Flt Permitted	0.30	1.00		0.11	1.00		0.13	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	548	3414		206	3461		231	3476	1585	354	3318	1528
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	358	575	209	446	577	101	138	804	270	73	796	96
RTOR Reduction (vph)	0	24	0	0	9	0	0	0	135	0	0	69
Lane Group Flow (vph)	358	760	0	446	669	0	138	804	135	73	796	27
Confl. Peds. (#/hr)	8		1	1		8	3					3
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	64.5	38.1		77.3	46.9		54.9	45.9	45.9	46.1	41.1	41.1
Effective Green, g (s)	64.5	38.1		77.3	46.9		54.9	45.9	45.9	46.1	41.1	41.1
Actuated g/C Ratio	0.44	0.26		0.53	0.32		0.37	0.31	0.31	0.31	0.28	0.28
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	452	888		491	1108		186	1089	496	160	931	428
v/s Ratio Prot	0.14	0.22		c0.22	0.19		c0.05	0.23		0.02	c0.24	
v/s Ratio Perm	0.21			c0.26			0.23		0.09	0.13		0.02
v/c Ratio	0.79	0.86		0.91	0.60		0.74	0.74	0.27	0.46	0.85	0.06
Uniform Delay, d1	29.5	51.5		41.4	41.9		34.7	44.9	37.7	37.2	49.8	38.6
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	9.2	10.3		21.5	2.4		14.7	4.5	1.4	2.1	9.9	0.3
Delay (s)	38.7	61.9		62.9	44.4		49.4	49.4	39.1	39.3	59.7	38.8
Level of Service	D	E		E	D		D	D	D	D	E	D
Approach Delay (s)		54.6			51.7			47.1			56.1	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	146.4	Sum of lost time (s)	22.2
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	7	0	1223	1329	146
Future Volume (vph)	0	7	0	1223	1329	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.985	
Flt Protected						
Satd. Flow (prot)	0	1662	0	3476	3370	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	3476	3370	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	5%	7%	4%
Adj. Flow (vph)	0	7	0	1223	1329	146
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	0	1223	1475	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	7	0	1223	1329	146
Future Volume (Veh/h)	0	7	0	1223	1329	146
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	7	0	1223	1329	146
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.86	0.78	0.78			
vC, conflicting volume	2014	738	1329			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1074	109	865			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	187	728	616			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	7	612	612	886	589
Volume Left	0	0	0	0	0
Volume Right	7	0	0	0	146
cSH	728	1700	1700	1700	1700
Volume to Capacity	0.01	0.36	0.36	0.52	0.35
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0
Control Delay (s)	10.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	10.0	0.0		0.0	
Approach LOS	A				

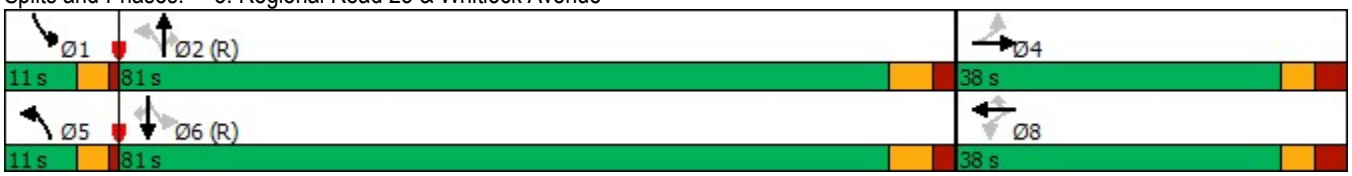
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	51	99	49	41	167	108	893	16	77	1162	85
Future Volume (vph)	161	51	99	49	41	167	108	893	16	77	1162	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00		0.98	1.00		0.98
Frt		0.901				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1559	0	1755	1795	1570	1772	3476	1445	1789	3380	1585
Flt Permitted	0.730			0.610			0.172			0.263		
Satd. Flow (perm)	1352	1559	0	1123	1795	1540	321	3476	1413	495	3380	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71				167			63			63
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Adj. Flow (vph)	161	51	99	49	41	167	108	893	16	77	1162	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	150	0	49	41	167	108	893	16	77	1162	85
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.49	0.35		0.18	0.09	0.33	0.38	0.45	0.02	0.20	0.60	0.09
Control Delay	48.4	23.8		41.2	39.1	7.6	11.2	16.8	0.1	8.4	19.7	4.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	23.8		41.2	39.1	7.6	11.2	16.8	0.1	8.4	19.7	4.7
LOS	D	C		D	D	A	B	B	A	A	B	A
Approach Delay		36.6			19.0			16.0			18.1	
Approach LOS		D			B			B			B	

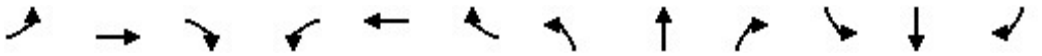
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	150	49	41	167	108	893	16	77	1162	85
v/c Ratio	0.49	0.35	0.18	0.09	0.33	0.38	0.45	0.02	0.20	0.60	0.09
Control Delay	48.4	23.8	41.2	39.1	7.6	11.2	16.8	0.1	8.4	19.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	23.8	41.2	39.1	7.6	11.2	16.8	0.1	8.4	19.7	4.7
Queue Length 50th (m)	35.7	16.3	10.0	8.2	0.0	8.8	66.1	0.0	6.1	97.4	2.3
Queue Length 95th (m)	58.1	35.4	21.2	17.7	17.4	15.1	81.3	0.0	11.4	117.7	9.5
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	327	431	272	434	499	285	1992	836	389	1937	913
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.35	0.18	0.09	0.33	0.38	0.45	0.02	0.20	0.60	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	51	99	49	41	167	108	893	16	77	1162	85
Future Volume (vph)	161	51	99	49	41	167	108	893	16	77	1162	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1759	1559		1750	1795	1540	1772	3476	1413	1789	3380	1547
Flt Permitted	0.73	1.00		0.61	1.00	1.00	0.17	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	1352	1559		1124	1795	1540	320	3476	1413	495	3380	1547
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	161	51	99	49	41	167	108	893	16	77	1162	85
RTOR Reduction (vph)	0	54	0	0	0	127	0	0	7	0	0	27
Lane Group Flow (vph)	161	96	0	49	41	40	108	893	9	77	1162	58
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	327	377		272	434	373	278	1992	809	380	1937	886
v/s Ratio Prot		0.06			0.02		c0.02	0.26		0.01	c0.34	
v/s Ratio Perm	c0.12			0.04		0.03	0.22		0.01	0.12		0.04
v/c Ratio	0.49	0.26		0.18	0.09	0.11	0.39	0.45	0.01	0.20	0.60	0.07
Uniform Delay, d1	42.4	39.8		39.0	38.2	38.3	12.1	15.9	11.9	10.2	18.1	12.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	1.6		1.4	0.4	0.6	4.1	0.7	0.0	1.2	1.4	0.1
Delay (s)	47.6	41.4		40.5	38.6	38.9	16.1	16.7	12.0	11.4	19.4	12.5
Level of Service	D	D		D	D	D	B	B	B	B	B	B
Approach Delay (s)		44.6			39.2			16.5			18.5	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	29	0	1223	1448	46
Future Volume (vph)	0	29	0	1223	1448	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.995	
Flt Protected						
Satd. Flow (prot)	0	1662	0	3650	3627	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	3650	3627	0
Link Speed (k/h)	48			70	70	
Link Distance (m)	65.6			201.2	132.9	
Travel Time (s)	4.9			10.3	6.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	0	29	0	1223	1448	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	29	0	1223	1494	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	29	0	1223	1448	46
Future Volume (Veh/h)	0	29	0	1223	1448	46
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	29	0	1223	1448	46
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				385	133	
pX, platoon unblocked	0.85	0.78	0.78			
vC, conflicting volume	2082	747	1494			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1148	96	1059			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	166	736	516			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	29	612	612	965	529
Volume Left	0	0	0	0	0
Volume Right	29	0	0	0	46
cSH	736	1700	1700	1700	1700
Volume to Capacity	0.04	0.36	0.36	0.57	0.31
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0
Control Delay (s)	10.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.1	0.0		0.0	
Approach LOS	B				

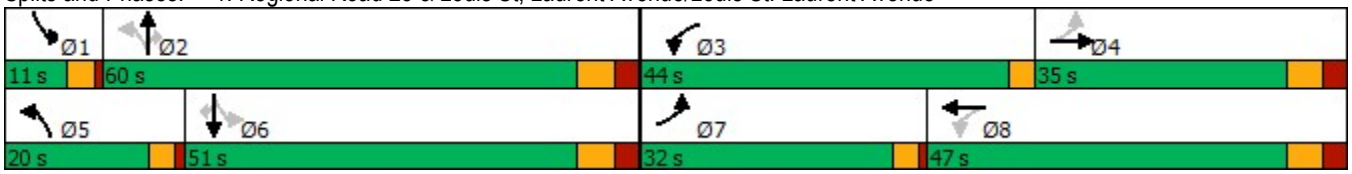
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	396	180	446	567	76	224	817	364	96	762	220
Future Volume (vph)	320	396	180	446	567	76	224	817	364	96	762	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00				0.98	1.00		
Frt		0.953			0.982				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3431	0	1807	3542	0	1789	3510	1633	1825	3544	1633
Flt Permitted	0.341			0.169			0.175			0.238		
Satd. Flow (perm)	651	3431	0	321	3542	0	330	3510	1605	457	3544	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			9				279			141
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Adj. Flow (vph)	320	396	180	446	567	76	224	817	364	96	762	220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	320	576	0	446	643	0	224	817	364	96	762	220
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	32.0	35.0		44.0	47.0		20.0	60.0	60.0	11.0	51.0	51.0
Total Split (%)	21.3%	23.3%		29.3%	31.3%		13.3%	40.0%	40.0%	7.3%	34.0%	34.0%
Maximum Green (s)	28.0	28.0		41.0	40.0		16.0	52.8	52.8	7.0	43.8	43.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	53.5	28.9		70.8	41.2		67.0	52.9	52.9	55.2	45.0	45.0
Actuated g/C Ratio	0.37	0.20		0.49	0.28		0.46	0.37	0.37	0.38	0.31	0.31
v/c Ratio	0.77	0.80		0.87	0.63		0.74	0.64	0.48	0.40	0.69	0.36
Control Delay	38.8	61.1		51.3	48.5		40.7	41.4	11.0	29.4	48.7	16.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	61.1		51.3	48.5		40.7	41.4	11.0	29.4	48.7	16.7
LOS	D	E		D	D		D	D	B	C	D	B
Approach Delay		53.2			49.6			33.4			40.4	
Approach LOS		D			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 144.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 43.0		Intersection LOS: D	
Intersection Capacity Utilization 95.8%		ICU Level of Service F	
Analysis Period (min) 15			

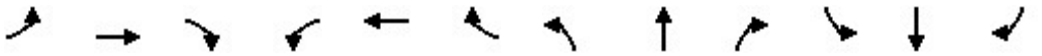
Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue/Louis St. Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	320	576	446	643	224	817	364	96	762	220
v/c Ratio	0.77	0.80	0.87	0.63	0.74	0.64	0.48	0.40	0.69	0.36
Control Delay	38.8	61.1	51.3	48.5	40.7	41.4	11.0	29.4	48.7	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	61.1	51.3	48.5	40.7	41.4	11.0	29.4	48.7	16.7
Queue Length 50th (m)	56.5	79.4	97.3	83.7	39.5	103.1	16.5	15.6	103.7	16.9
Queue Length 95th (m)	79.0	#109.2	139.6	110.7	#62.9	130.4	45.8	28.2	131.4	40.8
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	496	719	578	1013	314	1281	762	240	1101	604
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	0.65	0.80	0.77	0.63	0.71	0.64	0.48	0.40	0.69	0.36

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)	320	396	180	446	567	76	224	817	364	96	762	220
Future Volume (vph)	320	396	180	446	567	76	224	817	364	96	762	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	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	1.00
Frt	1.00	0.95		1.00	0.98		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)	1822	3432		1807	3543		1789	3510	1605	1825	3544	1633
Flt Permitted	0.34	1.00		0.17	1.00		0.17	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	654	3432		322	3543		330	3510	1605	457	3544	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	320	396	180	446	567	76	224	817	364	96	762	220
RTOR Reduction (vph)	0	34	0	0	6	0	0	0	177	0	0	97
Lane Group Flow (vph)	320	542	0	446	637	0	224	817	187	96	762	123
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	50.5	28.9		66.8	41.2		63.9	52.9	52.9	52.1	45.1	45.1
Effective Green, g (s)	50.5	28.9		66.8	41.2		63.9	52.9	52.9	52.1	45.1	45.1
Actuated g/C Ratio	0.35	0.20		0.46	0.28		0.44	0.37	0.37	0.36	0.31	0.31
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	402	684		506	1007		294	1281	585	230	1103	508
v/s Ratio Prot	0.12	0.16		c0.21	0.18		c0.08	0.23		0.02	0.22	
v/s Ratio Perm	0.16			c0.19			c0.26		0.12	0.13		0.08
v/c Ratio	0.80	0.79		0.88	0.63		0.76	0.64	0.32	0.42	0.69	0.24
Uniform Delay, d1	37.4	55.1		36.9	45.2		29.2	38.1	33.1	32.1	43.8	37.2
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	10.4	9.1		17.5	3.0		11.1	2.4	1.4	1.2	3.6	1.1
Delay (s)	47.9	64.3		54.4	48.3		40.3	40.5	34.5	33.4	47.3	38.3
Level of Service	D	E		D	D		D	D	C	C	D	D
Approach Delay (s)		58.4			50.8			38.9			44.2	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	144.9	Sum of lost time (s)	22.2
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

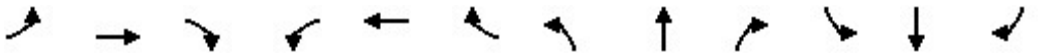
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	1468	1240	125
Future Volume (vph)	0	4	0	1468	1240	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.986	
Flt Protected						
Satd. Flow (prot)	0	1662	0	3544	3504	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	3544	3504	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Confl. Bikes (#/hr)						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	0	4	0	1468	1240	125
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	1468	1365	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	0	1468	1240	125
Future Volume (Veh/h)	0	4	0	1468	1240	125
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	4	0	1468	1240	125
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.85	0.82	0.82			
vC, conflicting volume	2036	682	1240			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	926	174	854			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	232	693	651			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	734	734	827	538
Volume Left	0	0	0	0	0
Volume Right	4	0	0	0	125
cSH	693	1700	1700	1700	1700
Volume to Capacity	0.01	0.43	0.43	0.49	0.32
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0
Control Delay (s)	10.2	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.2	0.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	48.3%	ICU Level of Service		A
Analysis Period (min)	15			

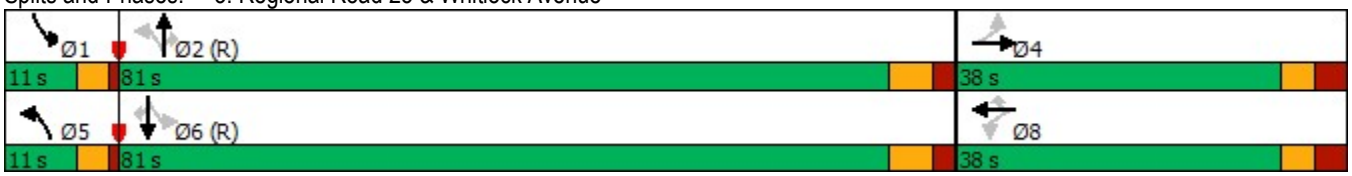


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	30	42	13	42	125	134	1238	33	170	1017	169
Future Volume (vph)	110	30	42	13	42	125	134	1238	33	170	1017	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		
Frt		0.912				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1752	0	1825	1762	1617	1789	3544	1633	1755	3510	1617
Flt Permitted	0.730			0.710			0.218			0.150		
Satd. Flow (perm)	1384	1752	0	1364	1762	1591	411	3544	1593	277	3510	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42				125			63			63
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	3					3			2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Adj. Flow (vph)	110	30	42	13	42	125	134	1238	33	170	1017	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	72	0	13	42	125	134	1238	33	170	1017	169
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.33	0.16		0.04	0.10	0.26	0.40	0.61	0.04	0.66	0.51	0.18
Control Delay	43.9	19.8		38.3	39.1	7.9	11.0	19.8	0.7	20.7	17.8	8.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	19.8		38.3	39.1	7.9	11.0	19.8	0.7	20.7	17.8	8.6
LOS	D	B		D	D	A	B	B	A	C	B	A
Approach Delay		34.3			17.4			18.5			17.0	
Approach LOS		C			B			B			B	

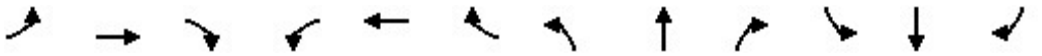
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	110	72	13	42	125	134	1238	33	170	1017	169
v/c Ratio	0.33	0.16	0.04	0.10	0.26	0.40	0.61	0.04	0.66	0.51	0.18
Control Delay	43.9	19.8	38.3	39.1	7.9	11.0	19.8	0.7	20.7	17.8	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	19.8	38.3	39.1	7.9	11.0	19.8	0.7	20.7	17.8	8.6
Queue Length 50th (m)	23.4	6.0	2.6	8.4	0.0	11.0	104.6	0.0	14.3	78.8	11.9
Queue Length 95th (m)	40.7	18.3	8.1	18.1	15.4	18.2	125.6	1.3	22.7	95.7	22.7
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	335	456	330	426	480	339	2030	939	258	2011	953
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.16	0.04	0.10	0.26	0.40	0.61	0.04	0.66	0.51	0.18

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	30	42	13	42	125	134	1238	33	170	1017	169
Future Volume (vph)	110	30	42	13	42	125	134	1238	33	170	1017	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	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	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1801	1753		1825	1762	1591	1789	3544	1593	1755	3510	1617
Flt Permitted	0.73	1.00		0.71	1.00	1.00	0.22	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	1383	1753		1364	1762	1591	410	3544	1593	277	3510	1617
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	110	30	42	13	42	125	134	1238	33	170	1017	169
RTOR Reduction (vph)	0	32	0	0	0	95	0	0	14	0	0	27
Lane Group Flow (vph)	110	40	0	13	42	30	134	1238	19	170	1017	142
Confl. Peds. (#/hr)	3					3			2	2		
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	335	424		330	426	385	331	2030	912	253	2011	926
v/s Ratio Prot		0.02			0.02		0.02	0.35		c0.04	0.29	
v/s Ratio Perm	c0.08			0.01		0.02	0.23		0.01	c0.38		0.09
v/c Ratio	0.33	0.09		0.04	0.10	0.08	0.40	0.61	0.02	0.67	0.51	0.15
Uniform Delay, d1	40.5	38.2		37.7	38.2	38.0	11.3	18.2	12.0	14.1	16.7	13.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.4		0.2	0.5	0.4	3.6	1.4	0.0	13.4	0.9	0.4
Delay (s)	43.1	38.6		37.9	38.7	38.4	14.9	19.6	12.0	27.4	17.6	13.3
Level of Service	D	D		D	D	D	B	B	B	C	B	B
Approach Delay (s)		41.4			38.5			19.0			18.3	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

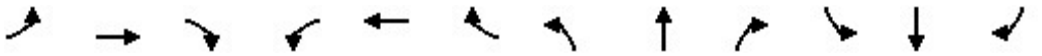
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	75	0	1468	1330	65
Future Volume (vph)	0	75	0	1468	1330	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.993	
Flt Protected						
Satd. Flow (prot)	0	1662	0	3650	3625	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	3650	3625	0
Link Speed (k/h)	48			70	70	
Link Distance (m)	65.6			201.2	132.9	
Travel Time (s)	4.9			10.3	6.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	75	0	1468	1330	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	75	0	1468	1395	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	75	0	1468	1330	65
Future Volume (Veh/h)	0	75	0	1468	1330	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	75	0	1468	1330	65
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				385	133	
pX, platoon unblocked	0.85	0.81	0.81			
vC, conflicting volume	2096	698	1395			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	950	163	1023			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	89	100			
cM capacity (veh/h)	224	697	557			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	75	734	734	887	508
Volume Left	0	0	0	0	0
Volume Right	75	0	0	0	65
cSH	697	1700	1700	1700	1700
Volume to Capacity	0.11	0.43	0.43	0.52	0.30
Queue Length 95th (m)	2.7	0.0	0.0	0.0	0.0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.8	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

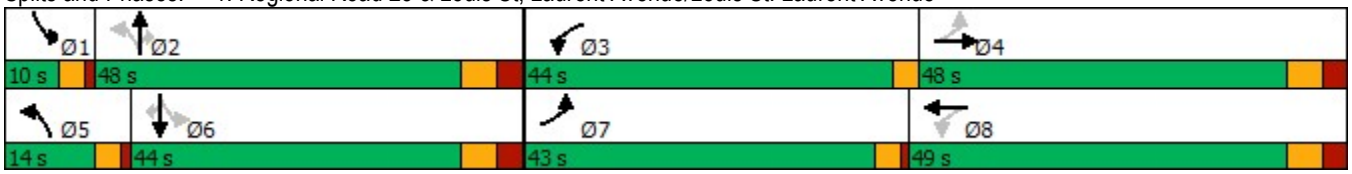


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	391	633	207	461	636	112	149	989	294	80	963	106
Future Volume (vph)	391	633	207	461	636	112	149	989	294	80	963	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00			1.00		1.00					0.98
Frt		0.963			0.978				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3426	0	1755	3462	0	1722	4995	1585	1789	4768	1555
Flt Permitted	0.235			0.105			0.121			0.162		
Satd. Flow (perm)	425	3426	0	194	3462	0	219	4995	1585	305	4768	1528
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			13				238			87
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8	3					3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Adj. Flow (vph)	391	633	207	461	636	112	149	989	294	80	963	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	391	840	0	461	748	0	149	989	294	80	963	106
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	43.0	48.0		44.0	49.0		14.0	48.0	48.0	10.0	44.0	44.0
Total Split (%)	28.7%	32.0%		29.3%	32.7%		9.3%	32.0%	32.0%	6.7%	29.3%	29.3%
Maximum Green (s)	39.0	41.0		41.0	42.0		10.0	40.8	40.8	6.0	36.8	36.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	74.2	41.0		84.8	47.1		54.1	40.8	40.8	46.1	36.8	36.8
Actuated g/C Ratio	0.51	0.28		0.58	0.32		0.37	0.28	0.28	0.32	0.25	0.25
v/c Ratio	0.81	0.86		0.91	0.67		0.81	0.71	0.48	0.51	0.80	0.24
Control Delay	37.9	58.3		61.1	46.7		66.1	51.2	12.5	44.9	57.8	13.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	58.3		61.1	46.7		66.1	51.2	12.5	44.9	57.8	13.8
LOS	D	E		E	D		E	D	B	D	E	B
Approach Delay		51.8			52.2			44.8			52.9	
Approach LOS		D			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 146.3			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 50.1		Intersection LOS: D	
Intersection Capacity Utilization 97.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue/Louis St. Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	391	840	461	748	149	989	294	80	963	106
v/c Ratio	0.81	0.86	0.91	0.67	0.81	0.71	0.48	0.51	0.80	0.24
Control Delay	37.9	58.3	61.1	46.7	66.1	51.2	12.5	44.9	57.8	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	58.3	61.1	46.7	66.1	51.2	12.5	44.9	57.8	13.8
Queue Length 50th (m)	67.9	122.7	109.3	98.6	31.0	98.3	12.7	15.9	100.0	4.4
Queue Length 95th (m)	98.6	#151.5	#167.3	129.8	#61.7	114.9	39.6	28.2	117.4	19.9
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	582	982	550	1122	184	1394	614	156	1200	449
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	0.67	0.86	0.84	0.67	0.81	0.71	0.48	0.51	0.80	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)	391	633	207	461	636	112	149	989	294	80	963	106
Future Volume (vph)	391	633	207	461	636	112	149	989	294	80	963	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		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)	1721	3426		1755	3460		1722	4995	1585	1789	4768	1528
Flt Permitted	0.24	1.00		0.11	1.00		0.12	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	426	3426		194	3460		220	4995	1585	305	4768	1528
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	391	633	207	461	636	112	149	989	294	80	963	106
RTOR Reduction (vph)	0	21	0	0	9	0	0	0	172	0	0	65
Lane Group Flow (vph)	391	819	0	461	739	0	149	989	122	80	963	41
Confl. Peds. (#/hr)	8		1	1		8	3					3
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	71.3	41.1		81.3	47.1		50.9	40.9	40.9	42.9	36.9	36.9
Effective Green, g (s)	71.3	41.1		81.3	47.1		50.9	40.9	40.9	42.9	36.9	36.9
Actuated g/C Ratio	0.49	0.28		0.56	0.32		0.35	0.28	0.28	0.29	0.25	0.25
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	474	961		504	1113		179	1395	442	150	1201	385
v/s Ratio Prot	0.17	0.24		c0.23	0.21		c0.06	0.20		0.02	0.20	
v/s Ratio Perm	0.23			c0.27			c0.23		0.08	0.13		0.03
v/c Ratio	0.82	0.85		0.91	0.66		0.83	0.71	0.28	0.53	0.80	0.11
Uniform Delay, d1	26.7	49.8		41.6	42.8		36.7	47.4	41.2	39.3	51.3	42.1
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	11.2	9.5		22.1	3.1		26.8	3.1	1.6	3.6	5.7	0.6
Delay (s)	37.9	59.2		63.7	46.0		63.6	50.5	42.8	42.9	57.0	42.6
Level of Service	D	E		E	D		E	D	D	D	E	D
Approach Delay (s)		52.5			52.7			50.3			54.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	146.4	Sum of lost time (s)	22.2
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	7	0	1493	1599	142
Future Volume (vph)	0	7	0	1493	1599	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.865			0.988	
Flt Protected						
Satd. Flow (prot)	0	1662	0	4995	4854	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	4995	4854	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	5%	7%	4%
Adj. Flow (vph)	0	7	0	1493	1599	142
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	0	1493	1741	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	7	0	1493	1599	142
Future Volume (Veh/h)	0	7	0	1493	1599	142
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	7	0	1493	1599	142
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.88	0.82	0.82			
vC, conflicting volume	2168	604	1599			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	961	0	978			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	227	899	588			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	7	498	498	498	640	640	462
Volume Left	0	0	0	0	0	0	0
Volume Right	7	0	0	0	0	0	142
cSH	899	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.29	0.29	0.29	0.38	0.38	0.27
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	9.0	0.0			0.0		
Approach LOS	A						

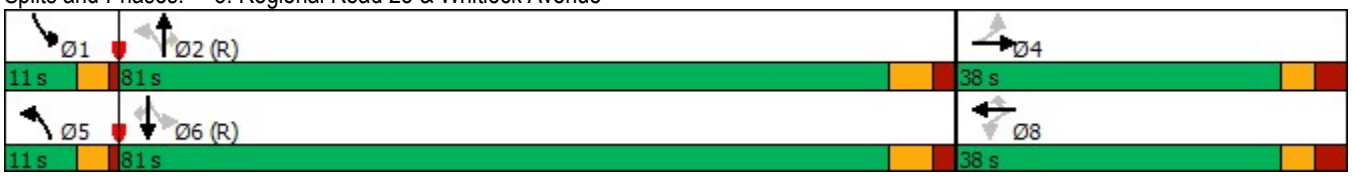
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	54	108	55	44	178	112	1107	18	75	1406	86
Future Volume (vph)	174	54	108	55	44	178	112	1107	18	75	1406	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00		0.98	1.00		0.98
Frt		0.900				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1560	0	1755	1795	1570	1772	4995	1445	1789	4856	1585
Flt Permitted	0.728			0.587			0.141			0.214		
Satd. Flow (perm)	1348	1560	0	1081	1795	1540	263	4995	1413	403	4856	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73				170			63			63
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Adj. Flow (vph)	174	54	108	55	44	178	112	1107	18	75	1406	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	162	0	55	44	178	112	1107	18	75	1406	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.53	0.37		0.21	0.10	0.36	0.45	0.39	0.02	0.22	0.51	0.09
Control Delay	49.9	24.9		42.0	39.2	8.7	13.1	15.7	0.1	8.8	17.5	4.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	24.9		42.0	39.2	8.7	13.1	15.7	0.1	8.8	17.5	4.8
LOS	D	C		D	D	A	B	B	A	A	B	A
Approach Delay		37.8			20.1			15.3			16.4	
Approach LOS		D			C			B			B	

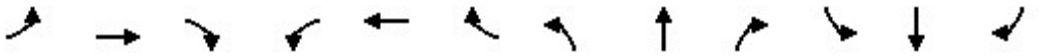
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 88.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	162	55	44	178	112	1107	18	75	1406	86
v/c Ratio	0.53	0.37	0.21	0.10	0.36	0.45	0.39	0.02	0.22	0.51	0.09
Control Delay	49.9	24.9	42.0	39.2	8.7	13.1	15.7	0.1	8.8	17.5	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	24.9	42.0	39.2	8.7	13.1	15.7	0.1	8.8	17.5	4.8
Queue Length 50th (m)	39.0	18.4	11.3	8.8	1.6	9.1	54.5	0.0	6.0	75.8	2.5
Queue Length 95th (m)	62.6	38.8	23.2	18.7	19.6	15.6	64.2	0.0	11.1	87.8	9.5
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	326	433	261	434	501	251	2862	836	335	2782	913
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.37	0.21	0.10	0.36	0.45	0.39	0.02	0.22	0.51	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	54	108	55	44	178	112	1107	18	75	1406	86
Future Volume (vph)	174	54	108	55	44	178	112	1107	18	75	1406	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1759	1560		1750	1795	1540	1772	4995	1413	1789	4856	1547
Flt Permitted	0.73	1.00		0.59	1.00	1.00	0.14	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1349	1560		1081	1795	1540	264	4995	1413	402	4856	1547
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	174	54	108	55	44	178	112	1107	18	75	1406	86
RTOR Reduction (vph)	0	55	0	0	0	129	0	0	8	0	0	27
Lane Group Flow (vph)	174	107	0	55	44	49	112	1107	10	75	1406	59
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	326	378		261	434	373	246	2862	809	326	2782	886
v/s Ratio Prot		0.07			0.02		c0.02	0.22		0.01	c0.29	
v/s Ratio Perm	c0.13			0.05		0.03	0.26		0.01	0.13		0.04
v/c Ratio	0.53	0.28		0.21	0.10	0.13	0.46	0.39	0.01	0.23	0.51	0.07
Uniform Delay, d1	42.9	40.1		39.3	38.3	38.5	11.1	15.2	11.9	9.9	16.7	12.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	1.9		1.8	0.5	0.7	6.0	0.4	0.0	1.6	0.7	0.1
Delay (s)	49.0	41.9		41.2	38.7	39.3	17.1	15.6	12.0	11.5	17.3	12.5
Level of Service	D	D		D	D	D	B	B	B	B	B	B
Approach Delay (s)		45.6			39.6			15.7			16.8	
Approach LOS		D			D			B			B	

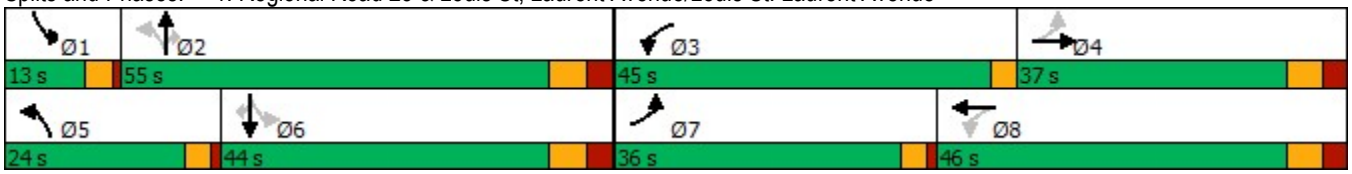
Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	433	166	453	625	85	244	1003	400	106	910	243
Future Volume (vph)	342	433	166	453	625	85	244	1003	400	106	910	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00				0.98	1.00		
Frt		0.958			0.982				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3455	0	1807	3542	0	1789	5043	1633	1825	5092	1633
Flt Permitted	0.254			0.173			0.159			0.214		
Satd. Flow (perm)	486	3455	0	329	3542	0	299	5043	1605	411	5092	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			10				341			176
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Adj. Flow (vph)	342	433	166	453	625	85	244	1003	400	106	910	243
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	599	0	453	710	0	244	1003	400	106	910	243
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	36.0	37.0		45.0	46.0		24.0	55.0	55.0	13.0	44.0	44.0
Total Split (%)	24.0%	24.7%		30.0%	30.7%		16.0%	36.7%	36.7%	8.7%	29.3%	29.3%
Maximum Green (s)	32.0	30.0		42.0	39.0		20.0	47.8	47.8	9.0	36.8	36.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	57.7	30.5		72.3	40.1		63.7	47.9	47.9	51.0	39.2	39.2
Actuated g/C Ratio	0.40	0.21		0.51	0.28		0.45	0.33	0.33	0.36	0.27	0.27
v/c Ratio	0.81	0.79		0.86	0.71		0.78	0.59	0.52	0.46	0.65	0.42
Control Delay	43.3	59.3		48.8	51.0		45.2	42.0	9.6	32.3	49.8	16.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	59.3		48.8	51.0		45.2	42.0	9.6	32.3	49.8	16.0
LOS	D	E		D	D		D	D	A	C	D	B
Approach Delay		53.5			50.1			34.6			41.8	
Approach LOS		D			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 143			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 43.5		Intersection LOS: D	
Intersection Capacity Utilization 93.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue/Louis St. Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	342	599	453	710	244	1003	400	106	910	243
v/c Ratio	0.81	0.79	0.86	0.71	0.78	0.59	0.52	0.46	0.65	0.42
Control Delay	43.3	59.3	48.8	51.0	45.2	42.0	9.6	32.3	49.8	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	59.3	48.8	51.0	45.2	42.0	9.6	32.3	49.8	16.0
Queue Length 50th (m)	59.5	82.3	95.9	94.8	44.5	87.8	11.7	17.7	86.1	14.9
Queue Length 95th (m)	92.3	108.8	138.8	125.5	#77.1	108.6	42.4	31.7	108.0	41.5
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	519	763	601	1001	342	1689	764	237	1395	575
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	0.66	0.79	0.75	0.71	0.71	0.59	0.52	0.45	0.65	0.42

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)	342	433	166	453	625	85	244	1003	400	106	910	243
Future Volume (vph)	342	433	166	453	625	85	244	1003	400	106	910	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	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	1.00
Frt	1.00	0.96		1.00	0.98		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)	1823	3456		1807	3542		1789	5043	1605	1825	5092	1633
Flt Permitted	0.25	1.00		0.17	1.00		0.16	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	487	3456		329	3542		300	5043	1605	412	5092	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	342	433	166	453	625	85	244	1003	400	106	910	243
RTOR Reduction (vph)	0	26	0	0	7	0	0	0	227	0	0	128
Lane Group Flow (vph)	342	573	0	453	703	0	244	1003	173	106	910	115
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	54.6	30.5		68.3	40.2		60.5	47.9	47.9	47.8	39.2	39.2
Effective Green, g (s)	54.6	30.5		68.3	40.2		60.5	47.9	47.9	47.8	39.2	39.2
Actuated g/C Ratio	0.38	0.21		0.48	0.28		0.42	0.33	0.33	0.33	0.27	0.27
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	411	737		516	995		307	1689	537	222	1395	447
v/s Ratio Prot	0.14	0.17		c0.21	0.20		c0.10	0.20		0.03	0.18	
v/s Ratio Perm	0.18			c0.21			c0.24		0.11	0.13		0.07
v/c Ratio	0.83	0.78		0.88	0.71		0.79	0.59	0.32	0.48	0.65	0.26
Uniform Delay, d1	34.3	53.1		35.3	46.1		30.1	39.5	35.5	34.0	45.9	40.5
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	13.4	7.9		16.6	4.2		13.2	1.5	1.6	1.6	2.4	1.4
Delay (s)	47.7	61.0		51.9	50.3		43.3	41.0	37.0	35.6	48.3	41.9
Level of Service	D	E		D	D		D	D	D	D	D	D
Approach Delay (s)		56.2			51.0			40.4			46.0	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	143.0	Sum of lost time (s)	22.2
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

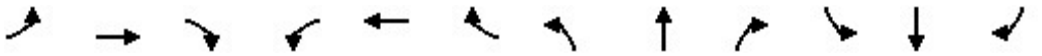
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	1803	1411	115
Future Volume (vph)	0	4	0	1803	1411	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.989	
Flt Protected						
Satd. Flow (prot)	0	1662	0	5092	5047	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	5092	5047	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Confl. Bikes (#/hr)						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	0	4	0	1803	1411	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	1803	1526	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	0	1803	1411	115
Future Volume (Veh/h)	0	4	0	1803	1411	115
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	4	0	1803	1411	115
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.89	0.85	0.85			
vC, conflicting volume	2070	528	1411			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	657	0	882			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	358	931	662			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	4	601	601	601	564	564	397
Volume Left	0	0	0	0	0	0	0
Volume Right	4	0	0	0	0	0	115
cSH	931	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.35	0.35	0.35	0.33	0.33	0.23
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	8.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	8.9	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

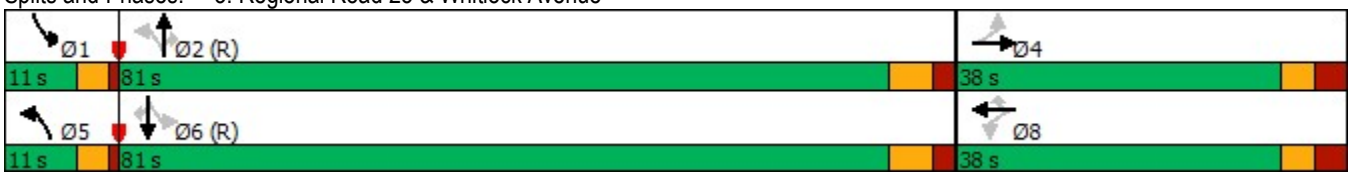


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	31	45	14	43	133	144	1532	36	161	1178	162
Future Volume (vph)	119	31	45	14	43	133	144	1532	36	161	1178	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		
Frt		0.911				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1750	0	1825	1762	1617	1789	5092	1633	1755	5043	1617
Flt Permitted	0.729			0.708			0.194			0.117		
Satd. Flow (perm)	1382	1750	0	1360	1762	1591	365	5092	1593	216	5043	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45				120			63			72
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	3					3			2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Adj. Flow (vph)	119	31	45	14	43	133	144	1532	36	161	1178	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	76	0	14	43	133	144	1532	36	161	1178	162
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.36	0.17		0.04	0.10	0.28	0.46	0.53	0.04	0.73	0.41	0.17
Control Delay	44.5	19.5		38.4	39.2	10.2	12.4	17.8	0.9	29.5	16.0	7.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	19.5		38.4	39.2	10.2	12.4	17.8	0.9	29.5	16.0	7.6
LOS	D	B		D	D	B	B	B	A	C	B	A
Approach Delay		34.8			18.9			17.0			16.5	
Approach LOS		C			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 17.8		Intersection LOS: B	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

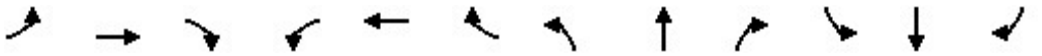
Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	119	76	14	43	133	144	1532	36	161	1178	162
v/c Ratio	0.36	0.17	0.04	0.10	0.28	0.46	0.53	0.04	0.73	0.41	0.17
Control Delay	44.5	19.5	38.4	39.2	10.2	12.4	17.8	0.9	29.5	16.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	19.5	38.4	39.2	10.2	12.4	17.8	0.9	29.5	16.0	7.6
Queue Length 50th (m)	25.4	6.2	2.8	8.6	2.6	11.9	83.9	0.0	13.5	58.9	10.0
Queue Length 95th (m)	43.5	18.7	8.3	18.5	18.6	19.4	96.4	1.7	#27.5	69.0	20.3
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	334	458	329	426	476	312	2918	939	222	2890	957
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.17	0.04	0.10	0.28	0.46	0.53	0.04	0.73	0.41	0.17

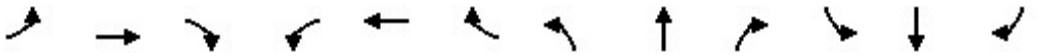
Intersection Summary

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)	119	31	45	14	43	133	144	1532	36	161	1178	162
Future Volume (vph)	119	31	45	14	43	133	144	1532	36	161	1178	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	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	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1801	1750		1825	1762	1591	1789	5092	1593	1755	5043	1617
Flt Permitted	0.73	1.00		0.71	1.00	1.00	0.19	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	1382	1750		1359	1762	1591	366	5092	1593	217	5043	1617
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	119	31	45	14	43	133	144	1532	36	161	1178	162
RTOR Reduction (vph)	0	34	0	0	0	91	0	0	15	0	0	31
Lane Group Flow (vph)	119	42	0	14	43	42	144	1532	21	161	1178	131
Confl. Peds. (#/hr)	3					3			2	2		
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	334	424		329	426	385	306	2918	912	218	2890	926
v/s Ratio Prot		0.02			0.02		0.03	0.30		c0.04	0.23	
v/s Ratio Perm	c0.09			0.01		0.03	0.27		0.01	c0.42		0.08
v/c Ratio	0.36	0.10		0.04	0.10	0.11	0.47	0.53	0.02	0.74	0.41	0.14
Uniform Delay, d1	40.8	38.2		37.7	38.3	38.3	10.5	16.9	12.0	13.0	15.5	12.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.5		0.2	0.5	0.6	5.1	0.7	0.0	19.9	0.4	0.3
Delay (s)	43.8	38.7		37.9	38.7	38.9	15.7	17.6	12.0	32.9	15.9	13.2
Level of Service	D	D		D	D	D	B	B	B	C	B	B
Approach Delay (s)		41.8			38.8			17.3			17.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



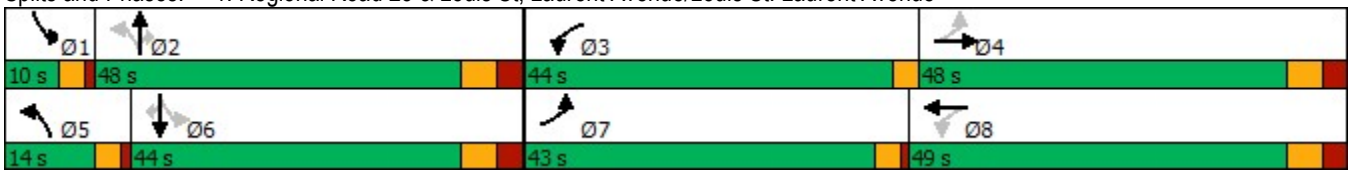
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	391	633	225	479	636	112	149	989	294	80	973	106
Future Volume (vph)	391	633	225	479	636	112	149	989	294	80	973	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00			1.00		1.00					0.98
Frt		0.961			0.978				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3418	0	1755	3462	0	1722	4995	1585	1789	4768	1555
Flt Permitted	0.245			0.093			0.115			0.159		
Satd. Flow (perm)	443	3418	0	172	3462	0	208	4995	1585	299	4768	1528
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			13				238			87
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8	3					3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Adj. Flow (vph)	391	633	225	479	636	112	149	989	294	80	973	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	391	858	0	479	748	0	149	989	294	80	973	106
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	43.0	48.0		44.0	49.0		14.0	48.0	48.0	10.0	44.0	44.0
Total Split (%)	28.7%	32.0%		29.3%	32.7%		9.3%	32.0%	32.0%	6.7%	29.3%	29.3%
Maximum Green (s)	39.0	41.0		41.0	42.0		10.0	40.8	40.8	6.0	36.8	36.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	74.5	41.0		86.3	48.1		54.0	40.8	40.8	46.0	36.8	36.8
Actuated g/C Ratio	0.50	0.28		0.58	0.33		0.37	0.28	0.28	0.31	0.25	0.25
v/c Ratio	0.80	0.88		0.93	0.66		0.84	0.72	0.48	0.52	0.82	0.24
Control Delay	36.5	60.9		67.1	46.4		70.7	52.0	12.6	45.9	59.3	13.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	60.9		67.1	46.4		70.7	52.0	12.6	45.9	59.3	13.8
LOS	D	E		E	D		E	D	B	D	E	B
Approach Delay		53.2			54.5			45.9			54.2	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 147.7
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 51.7 Intersection LOS: D
Intersection Capacity Utilization 98.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue/Louis St. Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	391	858	479	748	149	989	294	80	973	106
v/c Ratio	0.80	0.88	0.93	0.66	0.84	0.72	0.48	0.52	0.82	0.24
Control Delay	36.5	60.9	67.1	46.4	70.7	52.0	12.6	45.9	59.3	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	60.9	67.1	46.4	70.7	52.0	12.6	45.9	59.3	13.8
Queue Length 50th (m)	66.0	125.7	119.3	98.6	31.0	98.3	12.7	15.9	101.3	4.4
Queue Length 95th (m)	96.2	#160.3	#183.4	129.8	#63.8	114.9	39.6	28.2	118.8	19.9
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	583	973	540	1137	178	1380	610	153	1188	446
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	0.67	0.88	0.89	0.66	0.84	0.72	0.48	0.52	0.82	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)	391	633	225	479	636	112	149	989	294	80	973	106
Future Volume (vph)	391	633	225	479	636	112	149	989	294	80	973	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		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)	1720	3416		1755	3460		1722	4995	1585	1789	4768	1528
Flt Permitted	0.24	1.00		0.09	1.00		0.11	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	443	3416		171	3460		208	4995	1585	299	4768	1528
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	391	633	225	479	636	112	149	989	294	80	973	106
RTOR Reduction (vph)	0	24	0	0	9	0	0	0	172	0	0	65
Lane Group Flow (vph)	391	834	0	479	739	0	149	989	122	80	973	41
Confl. Peds. (#/hr)	8		1	1		8	3					3
Heavy Vehicles (%)	6%	2%	3%	4%	3%	1%	6%	5%	3%	2%	10%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	71.6	41.1		82.7	48.2		50.8	40.8	40.8	42.8	36.8	36.8
Effective Green, g (s)	71.6	41.1		82.7	48.2		50.8	40.8	40.8	42.8	36.8	36.8
Actuated g/C Ratio	0.48	0.28		0.56	0.33		0.34	0.28	0.28	0.29	0.25	0.25
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	478	950		509	1129		174	1379	437	147	1187	380
v/s Ratio Prot	0.17	0.24		c0.25	0.21		c0.06	0.20		0.02	0.20	
v/s Ratio Perm	0.23			c0.28			c0.24		0.08	0.14		0.03
v/c Ratio	0.82	0.88		0.94	0.65		0.86	0.72	0.28	0.54	0.82	0.11
Uniform Delay, d1	26.9	50.9		43.8	42.6		37.6	48.2	41.9	40.0	52.3	42.8
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	10.4	11.3		26.5	3.0		31.5	3.2	1.6	4.1	6.4	0.6
Delay (s)	37.4	62.2		70.3	45.6		69.1	51.5	43.5	44.1	58.7	43.3
Level of Service	D	E		E	D		E	D	D	D	E	D
Approach Delay (s)		54.4			55.2			51.7			56.3	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	54.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	147.7	Sum of lost time (s)	22.2
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	7	0	1493	1624	146
Future Volume (vph)	0	7	0	1493	1624	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.865			0.988	
Flt Protected						
Satd. Flow (prot)	0	1662	0	4995	4854	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	4995	4854	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	5%	7%	4%
Adj. Flow (vph)	0	7	0	1493	1624	146
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	0	1493	1770	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	7	0	1493	1624	146
Future Volume (Veh/h)	0	7	0	1493	1624	146
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	7	0	1493	1624	146
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.88	0.82	0.82			
vC, conflicting volume	2195	614	1624			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	0	1006			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	218	898	573			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	7	498	498	498	650	650	471
Volume Left	0	0	0	0	0	0	0
Volume Right	7	0	0	0	0	0	146
cSH	898	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.29	0.29	0.29	0.38	0.38	0.28
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	9.0	0.0			0.0		
Approach LOS	A						

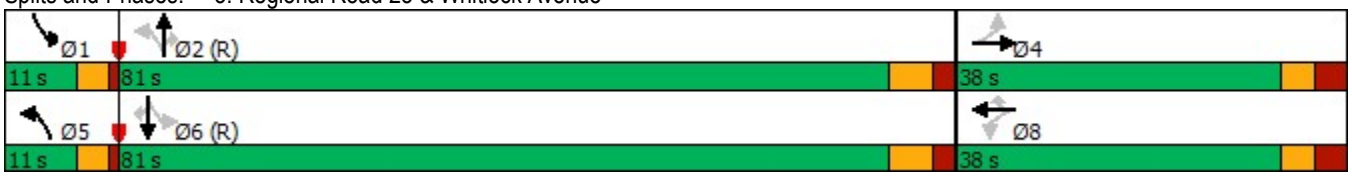
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	54	108	55	44	178	112	1107	18	82	1418	92
Future Volume (vph)	174	54	108	55	44	178	112	1107	18	82	1418	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00		0.98	1.00		0.98
Frt		0.900				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1560	0	1755	1795	1570	1772	4995	1445	1789	4856	1585
Flt Permitted	0.728			0.587			0.139			0.214		
Satd. Flow (perm)	1348	1560	0	1081	1795	1540	259	4995	1413	403	4856	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73				170			63			63
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Adj. Flow (vph)	174	54	108	55	44	178	112	1107	18	82	1418	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	162	0	55	44	178	112	1107	18	82	1418	92
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.53	0.37		0.21	0.10	0.36	0.45	0.39	0.02	0.24	0.51	0.10
Control Delay	49.9	24.9		42.0	39.2	8.7	13.3	15.7	0.1	9.0	17.5	5.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	24.9		42.0	39.2	8.7	13.3	15.7	0.1	9.0	17.5	5.1
LOS	D	C		D	D	A	B	B	A	A	B	A
Approach Delay		37.8			20.1			15.3			16.4	
Approach LOS		D			C			B			B	

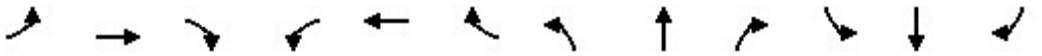
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 88.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	162	55	44	178	112	1107	18	82	1418	92
v/c Ratio	0.53	0.37	0.21	0.10	0.36	0.45	0.39	0.02	0.24	0.51	0.10
Control Delay	49.9	24.9	42.0	39.2	8.7	13.3	15.7	0.1	9.0	17.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	24.9	42.0	39.2	8.7	13.3	15.7	0.1	9.0	17.5	5.1
Queue Length 50th (m)	39.0	18.4	11.3	8.8	1.6	9.1	54.5	0.0	6.5	76.7	3.1
Queue Length 95th (m)	62.6	38.8	23.2	18.7	19.6	15.6	64.2	0.0	11.9	88.9	10.6
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	326	433	261	434	501	248	2862	836	335	2782	913
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.37	0.21	0.10	0.36	0.45	0.39	0.02	0.24	0.51	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	54	108	55	44	178	112	1107	18	82	1418	92
Future Volume (vph)	174	54	108	55	44	178	112	1107	18	82	1418	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1759	1560		1750	1795	1540	1772	4995	1413	1789	4856	1547
Flt Permitted	0.73	1.00		0.59	1.00	1.00	0.14	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1349	1560		1081	1795	1540	259	4995	1413	402	4856	1547
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	174	54	108	55	44	178	112	1107	18	82	1418	92
RTOR Reduction (vph)	0	55	0	0	0	129	0	0	8	0	0	27
Lane Group Flow (vph)	174	107	0	55	44	49	112	1107	10	82	1418	65
Confl. Peds. (#/hr)	6		3	3		6	2		1	1		2
Heavy Vehicles (%)	3%	29%	0%	4%	7%	4%	3%	5%	13%	2%	8%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	326	378		261	434	373	243	2862	809	326	2782	886
v/s Ratio Prot		0.07			0.02		c0.02	0.22		0.01	c0.29	
v/s Ratio Perm	c0.13			0.05		0.03	0.26		0.01	0.14		0.04
v/c Ratio	0.53	0.28		0.21	0.10	0.13	0.46	0.39	0.01	0.25	0.51	0.07
Uniform Delay, d1	42.9	40.1		39.3	38.3	38.5	11.2	15.2	11.9	9.9	16.7	12.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	1.9		1.8	0.5	0.7	6.2	0.4	0.0	1.8	0.7	0.2
Delay (s)	49.0	41.9		41.2	38.7	39.3	17.3	15.6	12.0	11.8	17.4	12.5
Level of Service	D	D		D	D	D	B	B	B	B	B	B
Approach Delay (s)		45.6			39.6			15.7			16.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	29	0	1493	1750	46
Future Volume (vph)	0	29	0	1493	1750	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.865			0.996	
Flt Protected						
Satd. Flow (prot)	0	1662	0	5245	5218	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	5245	5218	0
Link Speed (k/h)	48			70	70	
Link Distance (m)	65.6			201.2	132.9	
Travel Time (s)	4.9			10.3	6.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	0	29	0	1493	1750	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	29	0	1493	1796	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	29	0	1493	1750	46
Future Volume (Veh/h)	0	29	0	1493	1750	46
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	29	0	1493	1750	46
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				385	133	
pX, platoon unblocked	0.87	0.81	0.81			
vC, conflicting volume	2271	606	1796			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1078	0	1174			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	188	887	490			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	29	498	498	498	700	700	396
Volume Left	0	0	0	0	0	0	0
Volume Right	29	0	0	0	0	0	46
cSH	887	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.29	0.29	0.29	0.41	0.41	0.23
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.2	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	9.2	0.0			0.0		
Approach LOS	A						

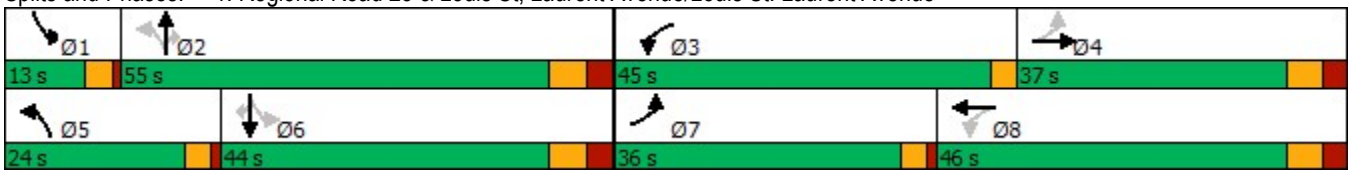
Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	44.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	433	188	480	625	85	244	1003	400	106	926	243
Future Volume (vph)	342	433	188	480	625	85	244	1003	400	106	926	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0	35.0		0.0	60.0		60.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00				0.98	1.00		
Frt		0.955			0.982				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3440	0	1807	3542	0	1789	5043	1633	1825	5092	1633
Flt Permitted	0.279			0.145			0.147			0.212		
Satd. Flow (perm)	534	3440	0	276	3542	0	277	5043	1605	407	5092	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			10				341			173
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		495.4			318.7			132.9			108.6	
Travel Time (s)		29.7			19.1			6.8			5.6	
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Adj. Flow (vph)	342	433	188	480	625	85	244	1003	400	106	926	243
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	621	0	480	710	0	244	1003	400	106	926	243
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	30.0		14.0	30.0		9.0	32.2	32.2	9.0	32.2	32.2
Total Split (s)	36.0	37.0		45.0	46.0		24.0	55.0	55.0	13.0	44.0	44.0
Total Split (%)	24.0%	24.7%		30.0%	30.7%		16.0%	36.7%	36.7%	8.7%	29.3%	29.3%
Maximum Green (s)	32.0	30.0		42.0	39.0		20.0	47.8	47.8	9.0	36.8	36.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	1.0	3.0		0.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Recall Mode	None	Max		None	Max		None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	57.6	30.1		74.7	42.1		63.7	47.9	47.9	50.6	38.8	38.8
Actuated g/C Ratio	0.40	0.21		0.51	0.29		0.44	0.33	0.33	0.35	0.27	0.27
v/c Ratio	0.80	0.84		0.89	0.69		0.80	0.60	0.53	0.47	0.68	0.43
Control Delay	40.7	63.1		56.0	50.1		49.2	43.3	9.7	33.6	51.9	16.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	63.1		56.0	50.1		49.2	43.3	9.7	33.6	51.9	16.8
LOS	D	E		E	D		D	D	A	C	D	B
Approach Delay		55.1			52.5			36.0			43.7	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 145.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 45.4		Intersection LOS: D	
Intersection Capacity Utilization 95.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Regional Road 25 & Louis St, Laurent Avenue/Louis St. Laurent Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	342	621	480	710	244	1003	400	106	926	243
v/c Ratio	0.80	0.84	0.89	0.69	0.80	0.60	0.53	0.47	0.68	0.43
Control Delay	40.7	63.1	56.0	50.1	49.2	43.3	9.7	33.6	51.9	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	63.1	56.0	50.1	49.2	43.3	9.7	33.6	51.9	16.8
Queue Length 50th (m)	59.1	89.3	111.3	96.1	47.7	93.1	12.5	19.0	93.7	16.5
Queue Length 95th (m)	88.2	#117.8	#166.0	125.5	#81.1	108.6	42.4	31.7	110.2	42.5
Internal Link Dist (m)		471.4		294.7		108.9			84.6	
Turn Bay Length (m)	75.0		35.0		60.0		60.0	50.0		50.0
Base Capacity (vph)	522	743	585	1032	329	1661	757	230	1358	562
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	0.66	0.84	0.82	0.69	0.74	0.60	0.53	0.46	0.68	0.43

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)	342	433	188	480	625	85	244	1003	400	106	926	243
Future Volume (vph)	342	433	188	480	625	85	244	1003	400	106	926	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	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	1.00
Frt	1.00	0.95		1.00	0.98		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)	1823	3439		1807	3542		1789	5043	1605	1825	5092	1633
Flt Permitted	0.28	1.00		0.14	1.00		0.15	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	536	3439		276	3542		277	5043	1605	407	5092	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	342	433	188	480	625	85	244	1003	400	106	926	243
RTOR Reduction (vph)	0	33	0	0	7	0	0	0	229	0	0	127
Lane Group Flow (vph)	342	588	0	480	703	0	244	1003	171	106	926	116
Confl. Peds. (#/hr)	8		1	1		8			3	3		
Heavy Vehicles (%)	0%	0%	3%	1%	1%	0%	2%	4%	0%	0%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	54.7	30.1		70.7	42.1		60.5	47.9	47.9	47.4	38.8	38.8
Effective Green, g (s)	54.7	30.1		70.7	42.1		60.5	47.9	47.9	47.4	38.8	38.8
Actuated g/C Ratio	0.38	0.21		0.49	0.29		0.42	0.33	0.33	0.33	0.27	0.27
Clearance Time (s)	4.0	7.0		3.0	7.0		4.0	7.2	7.2	4.0	7.2	7.2
Vehicle Extension (s)	3.0	3.0		5.0	3.0		3.0	3.2	3.2	3.0	3.2	3.2
Lane Grp Cap (vph)	419	711		530	1025		299	1661	528	216	1358	435
v/s Ratio Prot	0.14	0.17		c0.23	0.20		c0.10	0.20		0.03	0.18	
v/s Ratio Perm	0.17			c0.21			c0.24		0.11	0.13		0.07
v/c Ratio	0.82	0.83		0.91	0.69		0.82	0.60	0.32	0.49	0.68	0.27
Uniform Delay, d1	35.2	55.2		39.2	45.8		31.5	40.8	36.6	35.4	47.8	42.1
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	11.6	10.7		20.0	3.7		15.6	1.6	1.6	1.8	2.8	1.5
Delay (s)	46.9	65.9		59.2	49.5		47.2	42.4	38.2	37.1	50.6	43.6
Level of Service	D	E		E	D		D	D	D	D	D	D
Approach Delay (s)		59.1			53.4			42.1			48.1	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	145.4	Sum of lost time (s)	22.2
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	1803	1476	125
Future Volume (vph)	0	4	0	1803	1476	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.988	
Flt Protected						
Satd. Flow (prot)	0	1662	0	5092	5042	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	5092	5042	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.0			183.4	201.2	
Travel Time (s)	7.2			9.4	10.3	
Confl. Bikes (#/hr)						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	0	4	0	1803	1476	125
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	1803	1601	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	0	1803	1476	125
Future Volume (Veh/h)	0	4	0	1803	1476	125
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	4	0	1803	1476	125
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				183	334	
pX, platoon unblocked	0.89	0.85	0.85			
vC, conflicting volume	2140	554	1476			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	728	0	952			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	323	930	622			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	4	601	601	601	590	590	420
Volume Left	0	0	0	0	0	0	0
Volume Right	4	0	0	0	0	0	125
cSH	930	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.35	0.35	0.35	0.35	0.35	0.25
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	8.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	8.9	0.0			0.0		
Approach LOS	A						

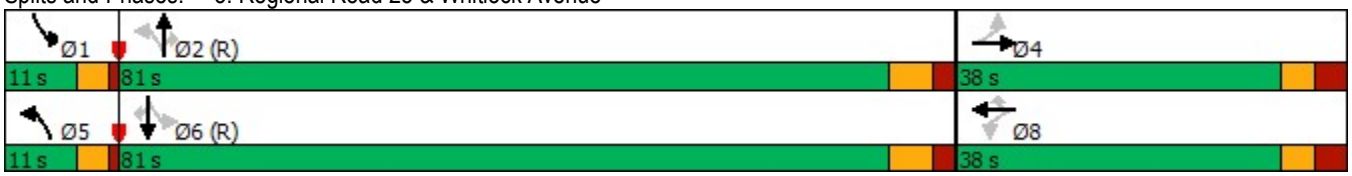
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	31	45	14	43	133	144	1532	36	179	1206	181
Future Volume (vph)	119	31	45	14	43	133	144	1532	36	179	1206	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	50.0		60.0	110.0		20.0	105.0		15.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		
Frt		0.911				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1750	0	1825	1762	1617	1789	5092	1633	1755	5043	1617
Flt Permitted	0.729			0.708			0.187			0.117		
Satd. Flow (perm)	1382	1750	0	1360	1762	1591	352	5092	1593	216	5043	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45				120			63			79
Link Speed (k/h)		48			48			70			70	
Link Distance (m)		227.6			168.0			113.9			183.4	
Travel Time (s)		17.1			12.6			5.9			9.4	
Confl. Peds. (#/hr)	3					3			2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Adj. Flow (vph)	119	31	45	14	43	133	144	1532	36	179	1206	181
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	76	0	14	43	133	144	1532	36	179	1206	181
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			3.7			3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	37.5	37.5		37.5	37.5	37.5	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	38.0	38.0		38.0	38.0	38.0	11.0	81.0	81.0	11.0	81.0	81.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	8.5%	62.3%	62.3%	8.5%	62.3%	62.3%
Maximum Green (s)	31.5	31.5		31.5	31.5	31.5	7.0	74.5	74.5	7.0	74.5	74.5
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.0	4.2	4.2	3.0	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.0	2.3	2.3	1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0		24.0	24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5	84.0	74.5	74.5	84.0	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.65	0.57	0.57	0.65	0.57	0.57
v/c Ratio	0.36	0.17		0.04	0.10	0.28	0.47	0.53	0.04	0.81	0.42	0.19
Control Delay	44.5	19.5		38.4	39.2	10.2	12.8	17.8	0.9	38.7	16.1	7.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	19.5		38.4	39.2	10.2	12.8	17.8	0.9	38.7	16.1	7.8
LOS	D	B		D	D	B	B	B	A	D	B	A
Approach Delay		34.8			18.9			17.0			17.7	
Approach LOS		C			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

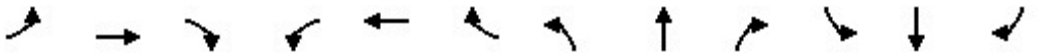
Splits and Phases: 3: Regional Road 25 & Whitlock Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	119	76	14	43	133	144	1532	36	179	1206	181
v/c Ratio	0.36	0.17	0.04	0.10	0.28	0.47	0.53	0.04	0.81	0.42	0.19
Control Delay	44.5	19.5	38.4	39.2	10.2	12.8	17.8	0.9	38.7	16.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	19.5	38.4	39.2	10.2	12.8	17.8	0.9	38.7	16.1	7.8
Queue Length 50th (m)	25.4	6.2	2.8	8.6	2.6	11.9	83.9	0.0	15.1	60.6	11.4
Queue Length 95th (m)	43.5	18.7	8.3	18.5	18.6	19.4	96.4	1.7	#36.0	71.0	22.4
Internal Link Dist (m)		203.6		144.0			89.9			159.4	
Turn Bay Length (m)	30.0		50.0		60.0	110.0		20.0	105.0		15.0
Base Capacity (vph)	334	458	329	426	476	304	2918	939	222	2890	960
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.17	0.04	0.10	0.28	0.47	0.53	0.04	0.81	0.42	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)	119	31	45	14	43	133	144	1532	36	179	1206	181
Future Volume (vph)	119	31	45	14	43	133	144	1532	36	179	1206	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	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	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1801	1750		1825	1762	1591	1789	5092	1593	1755	5043	1617
Flt Permitted	0.73	1.00		0.71	1.00	1.00	0.19	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	1382	1750		1359	1762	1591	352	5092	1593	217	5043	1617
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	119	31	45	14	43	133	144	1532	36	179	1206	181
RTOR Reduction (vph)	0	34	0	0	0	91	0	0	15	0	0	34
Lane Group Flow (vph)	119	42	0	14	43	42	144	1532	21	179	1206	147
Confl. Peds. (#/hr)	3					3			2	2		
Heavy Vehicles (%)	1%	0%	0%	0%	9%	1%	2%	3%	0%	4%	4%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Effective Green, g (s)	31.5	31.5		31.5	31.5	31.5	81.5	74.5	74.5	81.5	74.5	74.5
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.57	0.57	0.63	0.57	0.57
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lane Grp Cap (vph)	334	424		329	426	385	298	2918	912	218	2890	926
v/s Ratio Prot		0.02			0.02		0.03	0.30		c0.04	0.24	
v/s Ratio Perm	c0.09			0.01		0.03	0.28		0.01	c0.47		0.09
v/c Ratio	0.36	0.10		0.04	0.10	0.11	0.48	0.53	0.02	0.82	0.42	0.16
Uniform Delay, d1	40.8	38.2		37.7	38.3	38.3	10.6	16.9	12.0	13.6	15.6	13.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.5		0.2	0.5	0.6	5.5	0.7	0.0	28.1	0.4	0.4
Delay (s)	43.8	38.7		37.9	38.7	38.9	16.1	17.6	12.0	41.7	16.0	13.4
Level of Service	D	D		D	D	D	B	B	B	D	B	B
Approach Delay (s)		41.8			38.8			17.4			18.6	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	75	0	1803	1595	65
Future Volume (vph)	0	75	0	1803	1595	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.865			0.994	
Flt Protected						
Satd. Flow (prot)	0	1662	0	5245	5213	0
Flt Permitted						
Satd. Flow (perm)	0	1662	0	5245	5213	0
Link Speed (k/h)	48			70	70	
Link Distance (m)	65.6			201.2	132.9	
Travel Time (s)	4.9			10.3	6.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	75	0	1803	1595	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	75	0	1803	1660	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	75	0	1803	1595	65
Future Volume (Veh/h)	0	75	0	1803	1595	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	75	0	1803	1595	65
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				385	133	
pX, platoon unblocked	0.90	0.84	0.84			
vC, conflicting volume	2228	564	1660			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	765	0	1119			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	100			
cM capacity (veh/h)	309	916	531			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	75	601	601	601	638	638	384
Volume Left	0	0	0	0	0	0	0
Volume Right	75	0	0	0	0	0	65
cSH	916	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.35	0.35	0.35	0.38	0.38	0.23
Queue Length 95th (m)	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.3	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	9.3	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E

Swept Path Assessment

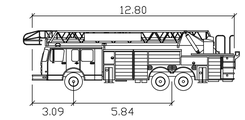
GHD

www.ghd.com

GHD Ltd.
111 Brunel Road, Suite 200
Mississauga, Ontario L4Z 1X3 Canada
T 1 905 712 0510 **F** 1 905 712 0515

LICENSED PROFESSIONAL ENGINEER
Nov. 28, 2023
W.C. MARIA
PROVINCE OF ONTARIO

Bar is 25mm on original size sheet
0 25mm



Aerial Fire

	meters
Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/28/23

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client
EXCELLIGENT CARE

Project
6360 REGIONAL ROAD 25
LONG-TERM CARE

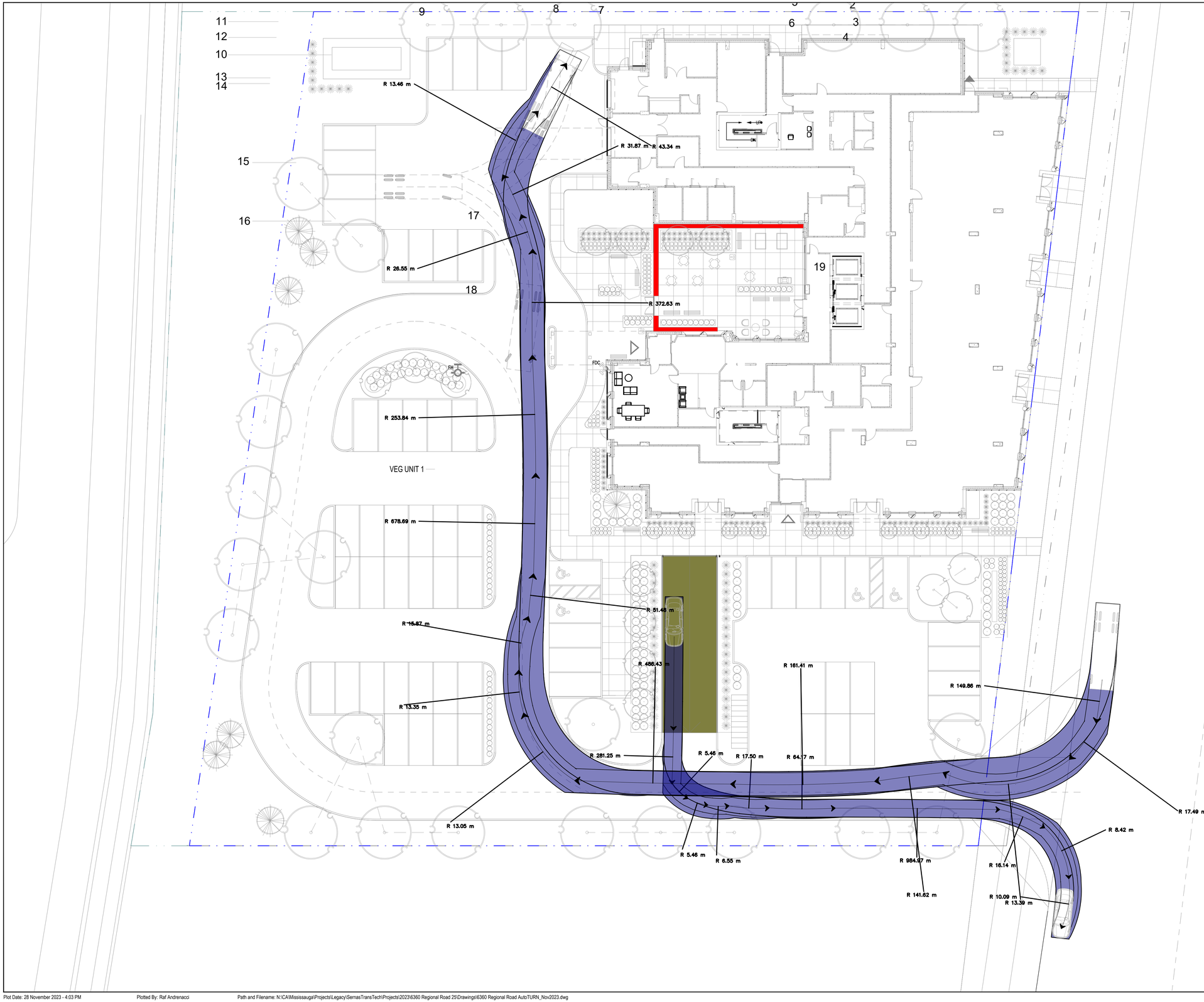
Date: November 28, 2023
Scale: NTS

Project No.: -

Title
VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (INBOUND)

Size
ANSI D

Sheet No.
AT-101

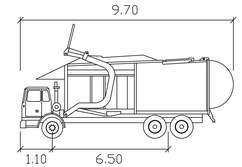


GHD Ltd.
111 Brunel Road, Suite 200
Mississauga, Ontario L4Z 1X3 Canada
T 1 905 712 0510 **F** 1 905 712 0515

www.ghd.com

LICENSED PROFESSIONAL ENGINEER
Nov. 28, 2023
W.C. MARIA
PROVINCE OF ONTARIO

Bar is 25mm on original size sheet
0 25mm



Halton-Front-End
meters

Width	: 2.70
Track	: 2.70
Lock to Lock Time	6.0
Steering Angle	: 30.0

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/28/23

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client
EXCELLIGENT CARE

Project
6360 REGIONAL ROAD 25
LONG-TERM CARE

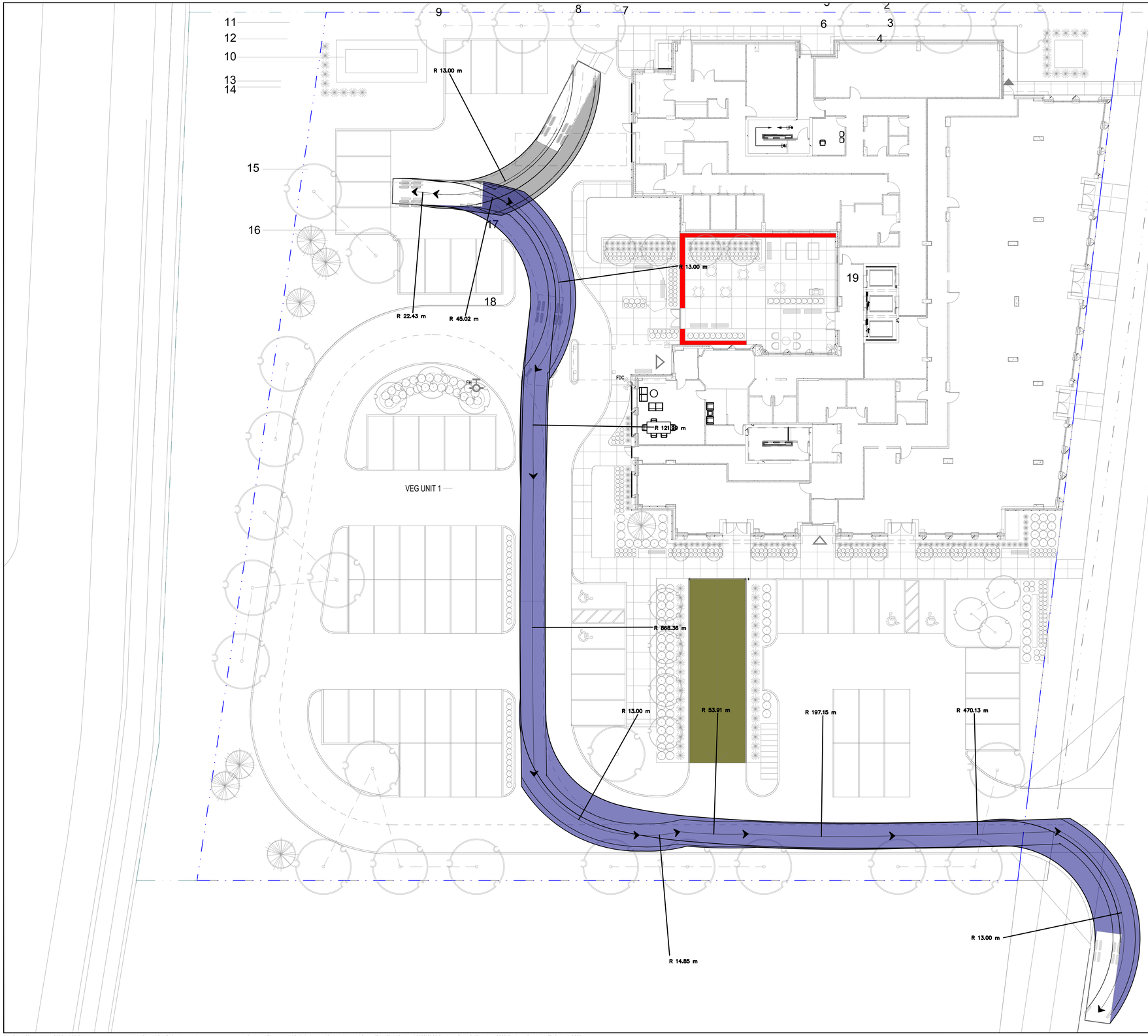
Date November 28, 2023
Scale NTS

Project No.
-

Title
VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION (INBOUND) with OUTBOUND PTAC

Size ANSI D

Sheet No.
AT-102



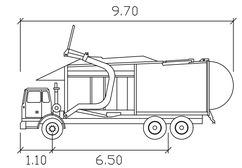
GHD

www.ghd.com

GHD Ltd.
111 Brunel Road, Suite 200
Mississauga, Ontario L4Z 1X3 Canada
T 1 905 712 0510 **F** 1 905 712 0515

LICENSED PROFESSIONAL ENGINEER
Nov. 28, 2023
W.C. MARIA
PROVINCE OF ONTARIO

Bar is 25mm on original size sheet
0 25mm



Halton-Front-End
meters

Width	: 2.70
Track	: 2.70
Lock to Lock Time	6.0
Steering Angle	: 30.0

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/28/23

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

EXCELLIGENT CARE

Project

6360 REGIONAL ROAD 25
LONG-TERM CARE

Date: November 28, 2023	Scale: NTS

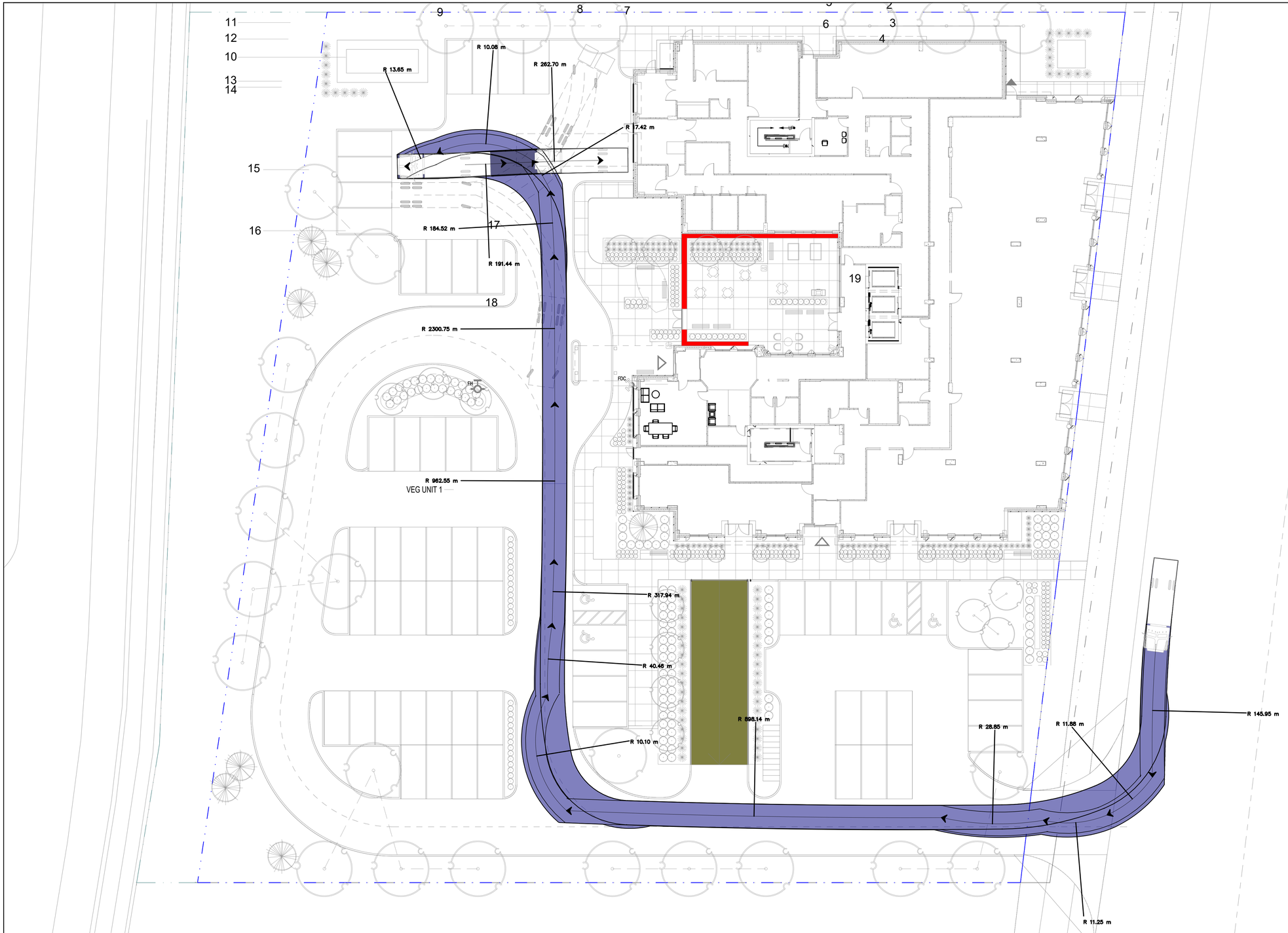
Project No.: -

Title

VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION (OUTBOUND)

Size: ANSI D

Sheet No.: AT-103



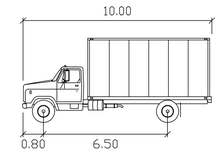
GHD

www.ghd.com

GHD Ltd.
111 Brunel Road, Suite 200
Mississauga, Ontario L4Z 1X3 Canada
T 1 905 712 0510 **F** 1 905 712 0515

LICENSED PROFESSIONAL ENGINEER
Nov. 28, 2023
W.C. MARIA
PROVINCE OF ONTARIO

Bar is 25mm on original size sheet
0 25mm



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	6.0
Steering Angle	: 40.2

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/28/23

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

EXCELLIGENT CARE

Project

6360 REGIONAL ROAD 25
LONG-TERM CARE

Date	Scale
November 28, 2023	NTS

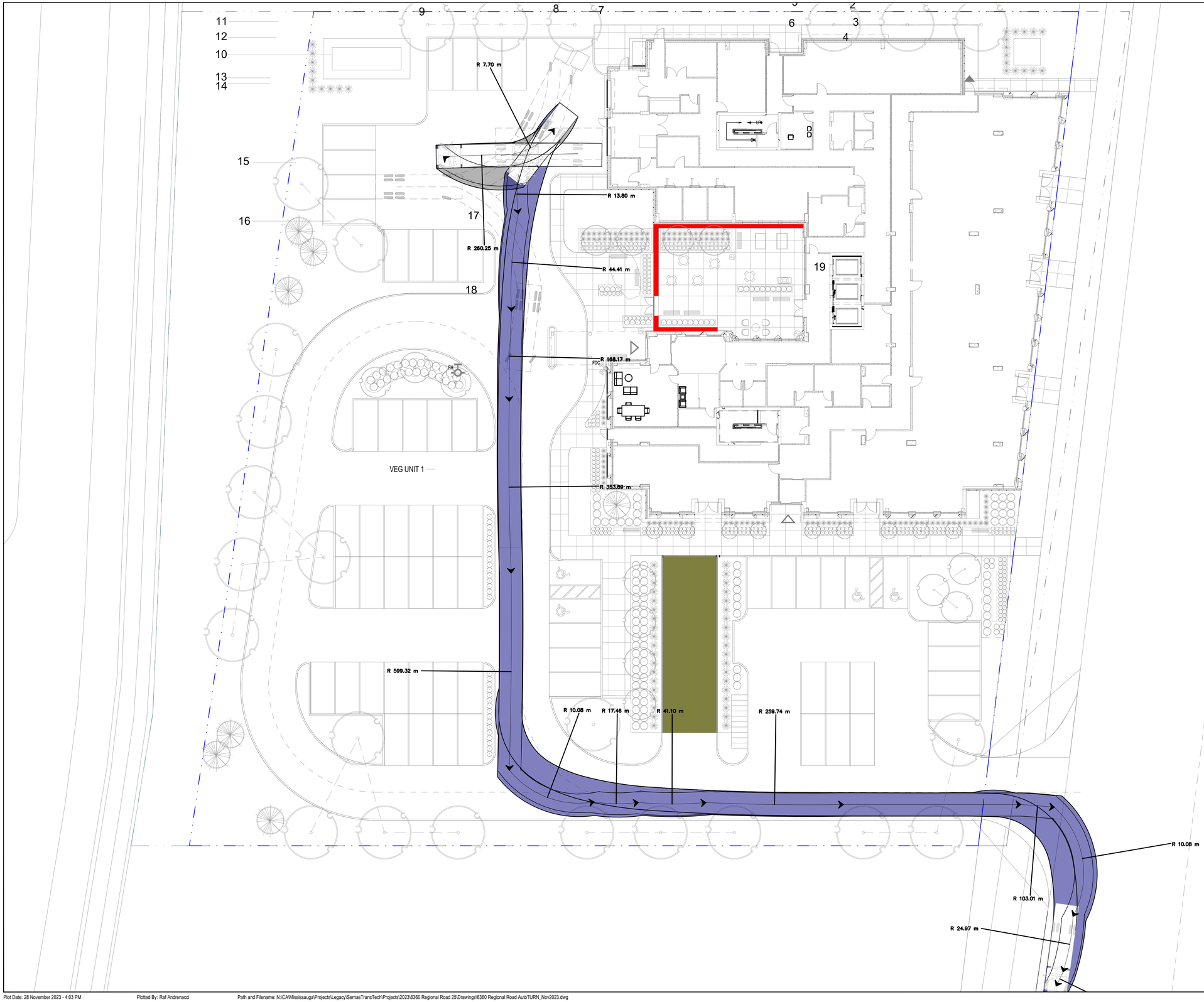
Project No.
-

Title

VEHICLE MANEUVERING DIAGRAM - MSU TRUCK (INBOUND)

Size
ANSI D

Sheet No.
AT-104

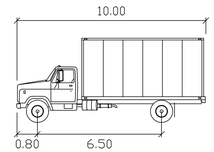


GHD Ltd.
111 Brunel Road, Suite 200
Mississauga, Ontario L4Z 1X3 Canada
T 1 905 712 0510 **F** 1 905 712 0515

www.ghd.com

LICENSED PROFESSIONAL ENGINEER
Nov. 28, 2023
W.C. MARIA
PROVINCE OF ONTARIO

Bar is 25mm on original size sheet
0 25mm



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	6.0
Steering Angle	: 40.2

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/28/23

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client
EXCELLIGENT CARE

Project
6360 REGIONAL ROAD 25
LONG-TERM CARE

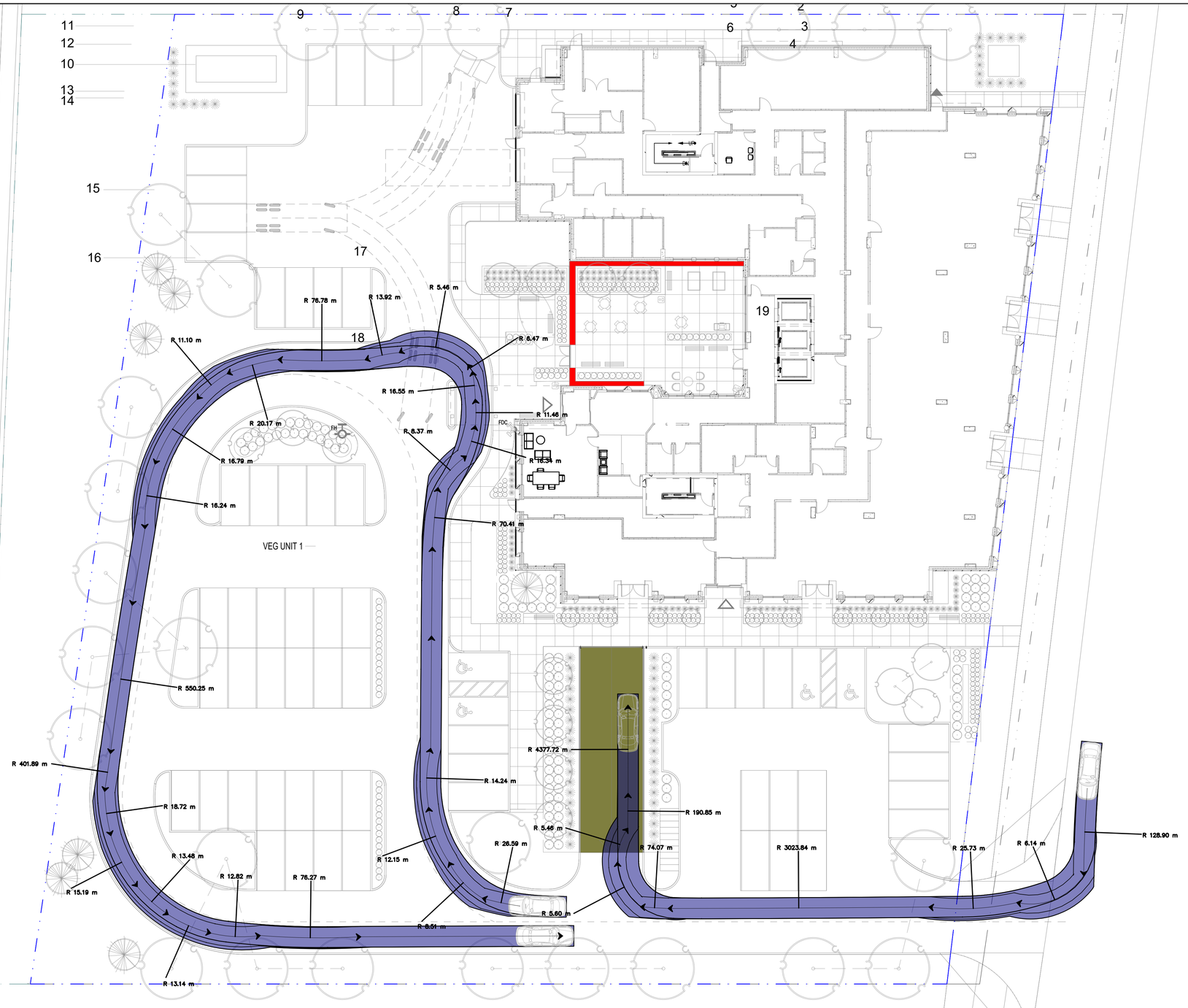
Date	Scale
November 28, 2023	NTS

Project No.
-

Title
VEHICLE MANEUVERING DIAGRAM - MSU TRUCK (OUTBOUND)

Size
ANSI D

Sheet No.
AT-105

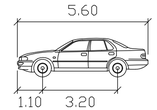


GHD Ltd.
111 Brunel Road, Suite 200
Mississauga, Ontario L4Z 1X3 Canada
T 1 905 712 0510 **F** 1 905 712 0515

www.ghd.com

LICENSED PROFESSIONAL ENGINEER
Nov. 28, 2023
W.C. MARIA
PROVINCE OF ONTARIO

Bar is 25mm on original size sheet
0 25mm



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	6.0
Steering Angle	: 35.9

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/28/23

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

EXCELLIGENT CARE

Project

6360 REGIONAL ROAD 25
LONG-TERM CARE

Date	Scale
November 28, 2023	NTS

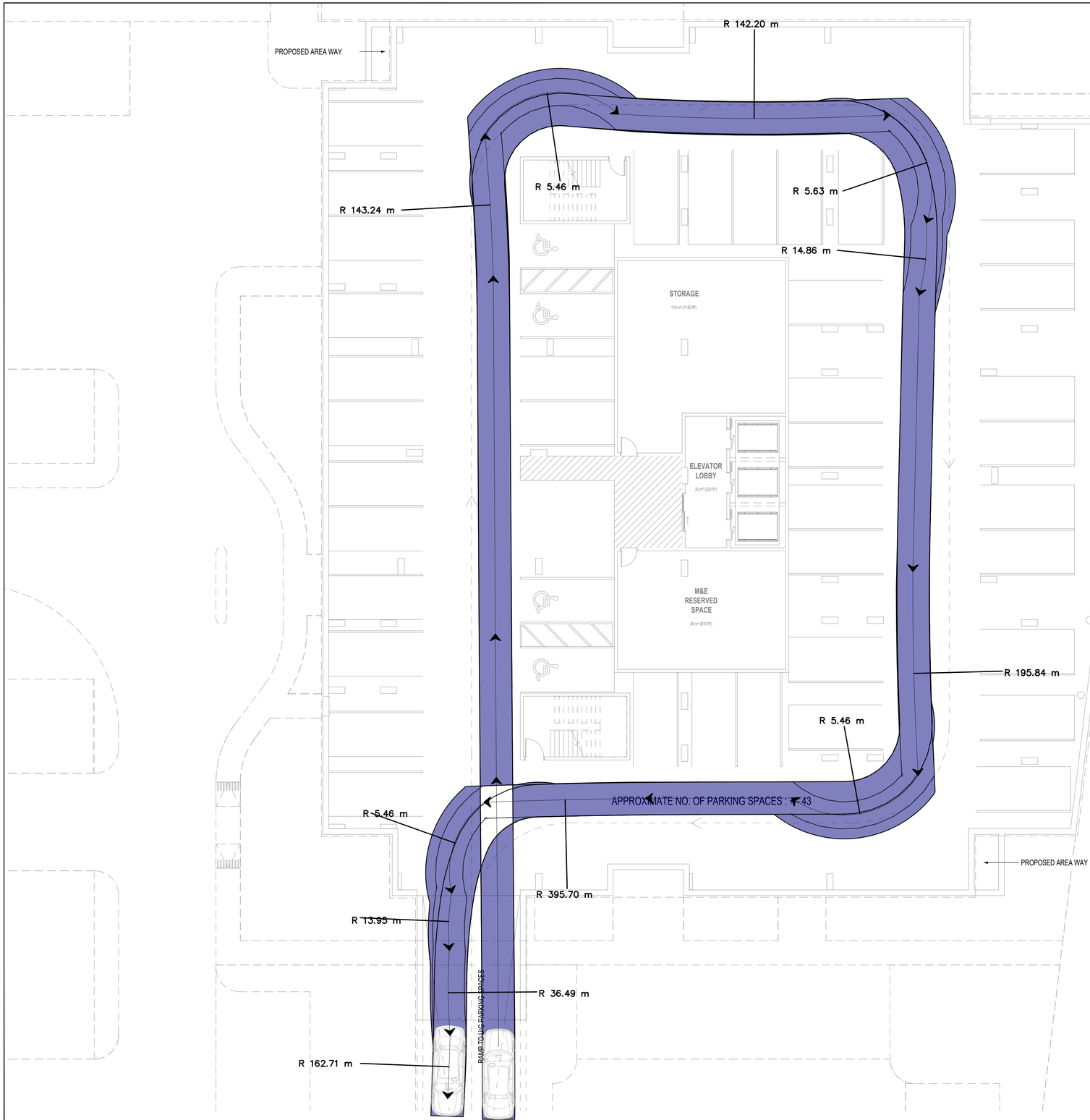
Project No.
-

Title

VEHICLE MANEUVERING DIAGRAM - PASSENGER CAR (GROUND FLOOR)

Size
ANSI D

Sheet No.
AT-106

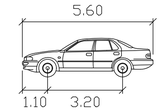


GHD Ltd.
111 Brunel Road, Suite 200
Mississauga, Ontario L4Z 1X3 Canada
T 1 905 712 0510 **F** 1 905 712 0515

www.ghd.com

LICENSED PROFESSIONAL ENGINEER
Nov. 28, 2023
W.C. MARIA
PROVINCE OF ONTARIO

Bar is 25mm on original size sheet
0 25mm



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/28/23

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client
EXCELLIGENT CARE

Project
6360 REGIONAL ROAD 25
LONG-TERM CARE

Date	Scale
November 28, 2023	NTS

Project No.
-

Title
VEHICLE MANEUVERING DIAGRAM - PASSENGER CAR (UNDERGROUND)

Size
ANSI D

Sheet No.
AT-107

ghd.com

→ The Power of Commitment