Memo

Date:	Wednesday, July 25, 2018
Project:	Lakeshore Connecting Communities
To:	Mark VanderSluis (City of Mississauga)
From:	Carl Wong (HDR) Liming Sun (HDR)
Subject:	Lakeshore VISSIM Simulation Memorandum

Introduction

In addition to the standard traffic analysis performed with Synchro, the multimodal microsimulation model VISSIM was also used to analyze key segments of the Lakeshore Study Corridor. This memorandum presents the analysis of future scenarios modelled, inputs, outputs and findings of the models, evaluations of the benefits of the median transit lanes and/or Transit Signal Priority (TSP) implementation, recommendations for the preferred solution, and the operational impacts that need to be identified at intersections.

Scope

The existing VISSIM model covers the entire Study Corridor between Winston Churchill Boulevard and the Etobicoke Creek; however, to understand the benefits of the proposed median transit lanes and/or TSP, the future VISSIM models were developed for focused sections between 70 Mississauga Road and the Etobicoke Creek. The modeled segments are shown in **Figure 1**. Vissim modelling was not necessary for sections of the corridor where no major improvements were proposed.

Figure 1: Scope of Existing Future Conditions VISSIM Models

For both existing and future models, a half hour warm-up period with 75% of the projected volumes and a one-hour peak (with 100% of the projected demand) for AM and PM peak have been modeled. A total of 10 simulation runs were conducted for the analysis and evaluation and the average values were used for documenting findings in this memo. Both AM and PM peak periods have been modeled with their associated balanced traffic volumes, transit headways and signal timing plans. Balanced traffic volumes were used in Vissim and represent a

refinement to the previous forecasts assessed in Synchro. The process to conduct traffic volume balancing are outlined below.

- Use sinks and sources as required to attract / generate traffic volumes, which in reality represent the driveways and unsignalized intersections that are not explicitly modelled in Vissim
- Increase / reduce through movement volumes only as required for balancing, however, the changes made to the movements did not exceed 200 vehicles per hour (which is less than 10% of the approach volumes)
- Increasing volumes was utilized as much as possible to balance volumes, which was preferred over decreasing volumes to ensure a conservative approach

A summary of the simulation analysis results will be discussed, including traffic operations performance (LOS, delay, queue), transit operations performance (delay and reliability), auto travel times, local transit travel times (route 23), and express route travel times.

Scenario Development

The existing conditions VISSIM model was previously built, calibrated, and validated with traffic volumes from 2016 or earlier, existing roadway configuration, existing signal timing plans, and existing transit route network.

The following three future scenarios have been modeled to evaluate the future general traffic and transit performance.

Future Condition No-Build

This scenario assessed the traffic operations and impacts of 2041 forecast traffic volumes, optimized future signal timing plans, implementation of the proposed 2020 MiWay Five Transit Network, and the performance of the proposed express route.

Future Condition with Median Transit Lanes

This scenario assessed future traffic operations along Lakeshore Road including the proposed median transit lanes for the express route only, shown in **Figure 1**. The median transit lanes are proposed between Dixie Rd and East Ave - a total travel distance of about 1.8 km. The transition part from/to general purpose traffic lanes to/from median transit lanes was designed to occur before/after the intersection, so no transit-only phases will be required.

Future Condition with Median Transit Lanes + TSP

This scenario builds on the “future condition with median transit lanes” scenario by applying TSP to all signalized intersections for the proposed express routes only. Local buses including north-south routes that may use some portion of Lakeshore were not set to trigger TSP. As there was no former TSP policy applied in the City of Mississauga, a standard 10 second early green/green extension conventional TSP policy was assumed to be implemented along the modelled segment for the express route only.

Assumptions and Inputs

Traffic Volume Inputs

- Origin-destination traffic volumes from EMME were used in the existing conditions model, which was calibrated to existing field traffic counts.
- In the future models, the balanced traffic volumes from the forecasted 2040 traffic volumes as developed and documented in the *May 2018, Turning Movement Volume Forecast Memorandum,* were used.

Physical Roadway Inputs

- The existing conditions model was built on the existing roadway configurations.
- Some future roadway works have been proposed to improve the traffic operations along the Study Corridor, including intersection realignment (i.e. Stavebank Road Re-alignment), left turn storage extension/removal, right turn storage removal and bus bay removal. The changes to left/right turn storage lanes and lengths are as listed in **Table 1**. Left turn storage lengths for future conditions were based on initial conceptual designs for the preferred solution. It should be noted that storage lengths in the VISSIM model reflect the storage lengths in the conceptual design. Synchro storage lengths differ from the VISSIM/conceptual design storage lengths as they do not impact the Synchro analysis or results.

Table 1: Roadway Configuration Changes

Intersection	Existing Condition Left Turn Storage (m)		Future Condition Left Turn Storage (m)		Future Condition Right Turn Storage	
	WBL	EBL	WBL	EBL	WBR	EBR
Dixie Rd	25	30	15	265	-	-
Haig Blvd	100	50	100	50	-	-
Hydro Rd	25	30	25	30	-	-
Ogden Ave	25	25	115	85	-	-
Lakefront Promenade	40	35	15	25	-	Removed
East Ave	25	20	45	20	Removed	Removed
Cawthra Rd	40	30	15	15	-	-
Lagoon St	NA	NA	15	15	-	-
Shaw Dr	45	35	25	25	-	Removed
Mohawk Ave	20	20	20	20	-	-
Cumberland Dr	15	NA	25	NA	-	-
Hurontario	40	80	15	20	Removed	-
John St	40	40	20	20	-	-
Mississauga Rd	70	35	45	15	Removed	-

Signal Timing Plans

The detailed signal timing plans for future conditions are available in the corresponding "Future Synchro Report", as shown in **Appendix A**. All the left turns conflicting with the median transit lanes were assigned a protected control phase only. TSP was applied to all signalized intersection with some constraints, including green time extension TSP only at the Mississauga Road intersection and no green time truncation for eastbound left turn phase at both Dixie Road and Cawthra Road intersections, due to the high traffic volumes.

Transit Operation

According to the 2020 MiWay Five Transit Network, the following routes will service the Study Corridor: Routes 5, 8, 14, 19, and 23 traveling along/intersecting with the Study Corridor. The existing headways of Route 5, 8, 14, 19, and 23 have been used for the future scenarios, as shown below. Based on the initial proposed design, all existing bus bays are removed for in-lane bus stops. The proposed Lakeshore Express route has been coded in the model between 70 Mississauga Road and Long Branch GO Station with a headway of 5 minutes.

Table 2: Bus Headway

Transit Line	Headway (min)
Route 5	10
Route 8	15
Route 14	40
Route 19	13
Route 23	15
Lakeshore Express Route	5

All the bus stops for local bus routes were maintained as in the existing condition, if possible. As far-side stations will be more efficient with TSP implementation, far-side stations have been applied at most locations except where ROW is constrained/limited, as shown below.

Table 3: Station Locations for Express Route

Location	EB	WB
Dixie Rd	FS	FS
Haig Blvd	FS	FS
Lakefront Prom/Alexandra Ave	FS	FS
Cawthra Rd	FS	FS
Shaw Dr	FS	FS
Cumberland Dr	NS	FS
Hurontario St/ St Lawrence Dr	FS	FS
Stavebank Rd	NS	FS
Mississauga Rd	NS	NS
70 Mississauga Rd	Turnaround TBD	Turnaround TBD

**FS – Far side stop; NS – Near side stop*

There were two dwell time distributions used to assign buses with estimated dwell time at stops, reflecting the different boarding and alighting passenger demands. A mean dwell time value of 20s, with a minimum value of 0s and maximum up to 30s was used to generate dwell times in the model at all stops except for higher demand stops. A second dwell time distribution formula with mean value of 20s, minimum value of 0s and maximum value of 45s was used in the model for bus stops with these higher demands, such as the Port Credit GO Station.

Outputs and Findings

Travel Times Comparison

The proposed express route will travel between Long Branch GO Station and 70 Mississauga Road, with the turnaround location to be decided (most likely using the road network within the proposed development). Unlike the local transit routes, the express route will not connect directly to the Port Credit GO Station.

Table 2 and **Table 3** depict the total travel times for general purpose traffic (auto), local transit routes and the proposed express route.

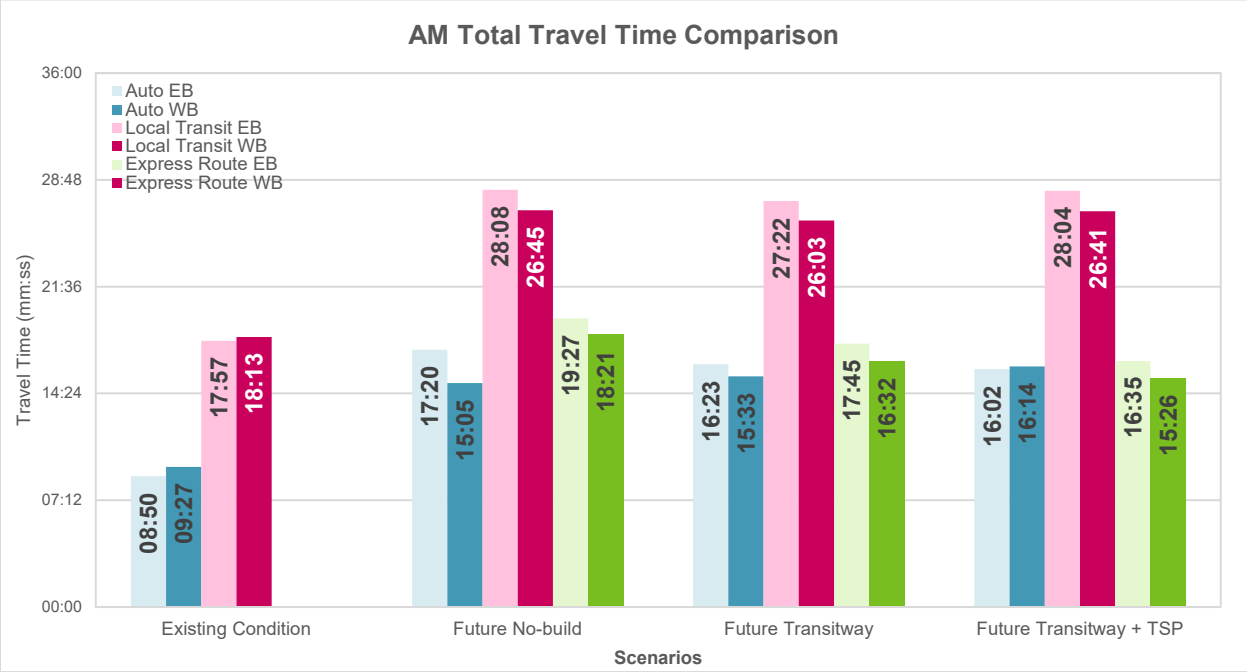
Total Travel Time Comparison

The following tables summarize the total travel time between 70 Mississauga Road and Dixie Road. As shown in **Table 2** and **Figure 2**, the travel time in the Future No Build scenario will double due to the higher vehicle demands compared to the existing condition. For all future scenarios, the changes to travel times for general traffic and the local transit routes are negligible with the implementation of TSP and median transit lanes. However, both median transit lanes and TSP implementation will generate travel time savings for the express route.

Table 2: AM Total Travel Times Comparison

Scenario	Auto Total Travel Time (min)		Regular Transit Total Travel Time (min)		Express Route Total Travel Time (min)	
	EB	WB	EB	WB	EB	WB
Existing Condition	08:50	09:27	17:57	18:13	-	-
Future No-build	17:20	15:05	28:08	26:45	19:27	18:21
Future median transit lanes	16:23	15:33	27:22	26:03	17:45	16:32
Future median transit lanes + TSP	16:02	16:14	28:04	26:41	16:35	15:26

Figure 2: AM Total Travel Times Comparison

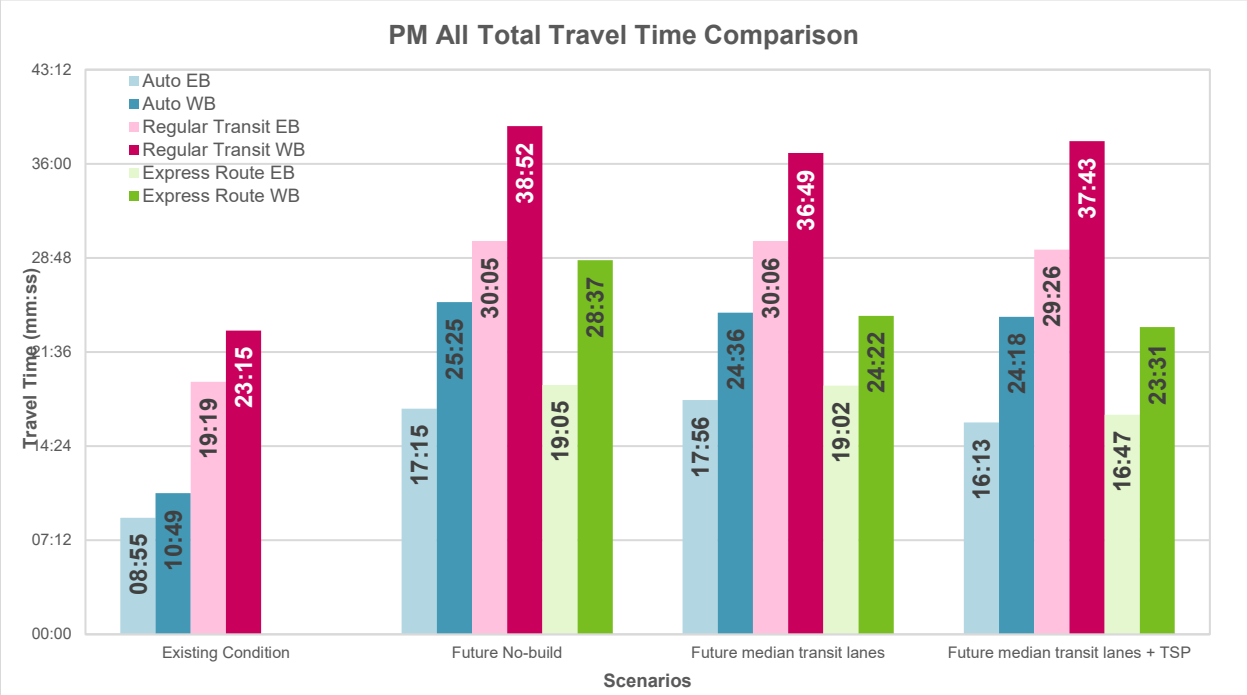


Similar to AM peak period, the future travel times of general traffic will approximately double compared to existing condition, from higher traffic demands and increased congestion. However, for all the future scenarios, the travel times of general traffic and local transit will remain generally the same or be improved slightly with TSP implementation during the PM peak period. The travel time of the express route will significantly improve by saving approximately 2 minutes in the EB direction and 7 minutes in the WB direction with the implementation of the median transit lanes and TSP.

Table 3: PM Total Travel Time Comparison

Scenario	Auto Total Travel Time (min)		Regular Transit Total Travel Time (min)		Express Route Total Travel Time (min)	
	EB	WB	EB	WB	EB	WB
Existing Condition	08:55	10:49	19:19	23:15	-	-
Future No-build	17:15	25:25	30:05	38:52	19:05	28:37
Future median transit lanes	17:56	24:36	30:06	36:49	19:02	24:22
Future median transit lanes + TSP	16:13	24:18	29:26	37:43	16:47	23:31

Figure 3: PM Total Travel Time Comparison



The discussion below summarizes the travel time profile for each scenario from VISSIM. These profiles indicate where travel speeds are higher, and where intersection delays were encountered.

Auto Travel Times

The following figures depict the auto travel times between two successive signalized intersections. Overall, the travel times of future scenarios are twice those in the existing condition, which are attributed to increased future traffic volumes (from both background growth and major planned developments) and increased transit service with in-lane stops which impede traffic operations when the transit vehicle is present.

Travel times in the Future median transit lanes + TSP scenario start to increase at the Cawthra Road intersection due to mixed traffic/transit operations. TSP is successful when it can either truncate the previous signal phase or extend the green time of the current phase; however, with this type of TSP, the EBL has a high possibility to be truncated to provide early green for the approaching express route. Due to the short eastbound left turn storage and high eastbound left turn and through volumes, unsuccessful left turning vehicles would occupy one of the through lanes to wait for the left turn green phase and would lead to long delays. The same situation would also occur for the EBL at Dixie Road. **It is recommended that the EBL be set to not truncate when the TSP is activated at Cawthra Road and Dixie Road.**

As shown in the following figures, the major location of delays for auto travel time is at Cawthra Road due to the high eastbound left turn traffic in both the AM and PM peak periods.

Figure 4: Eastbound AM Auto Travel Time Profile

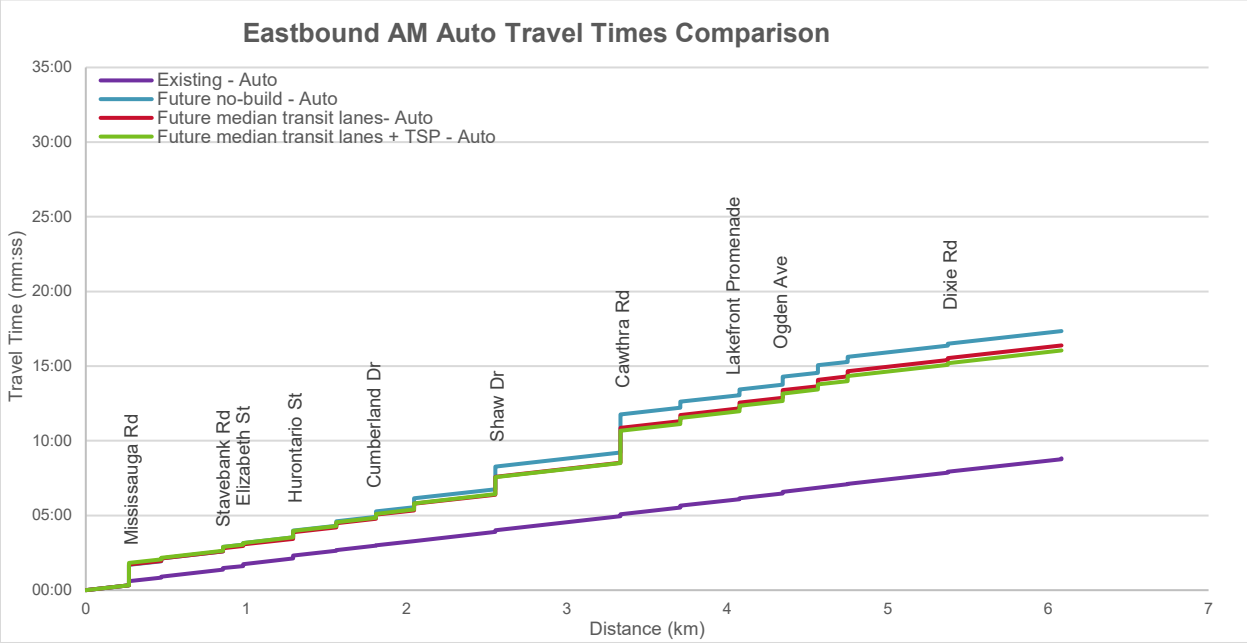


Figure 5: Westbound AM Auto Travel Time Profile

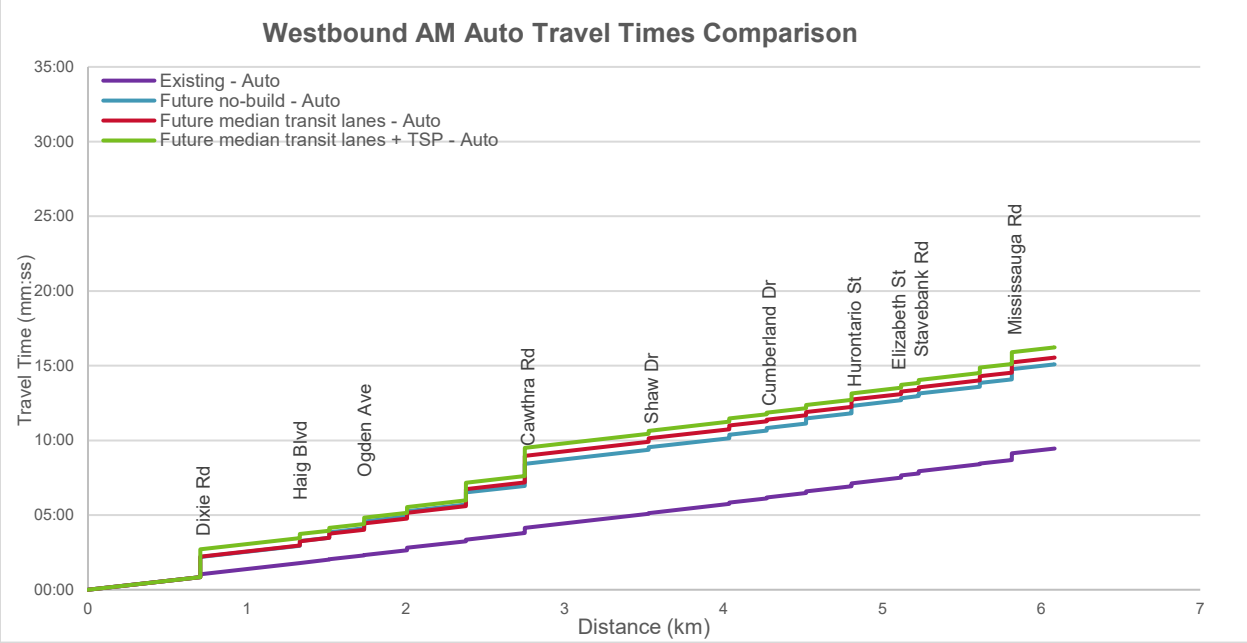


Figure 6: Eastbound PM Auto Travel Time Profile

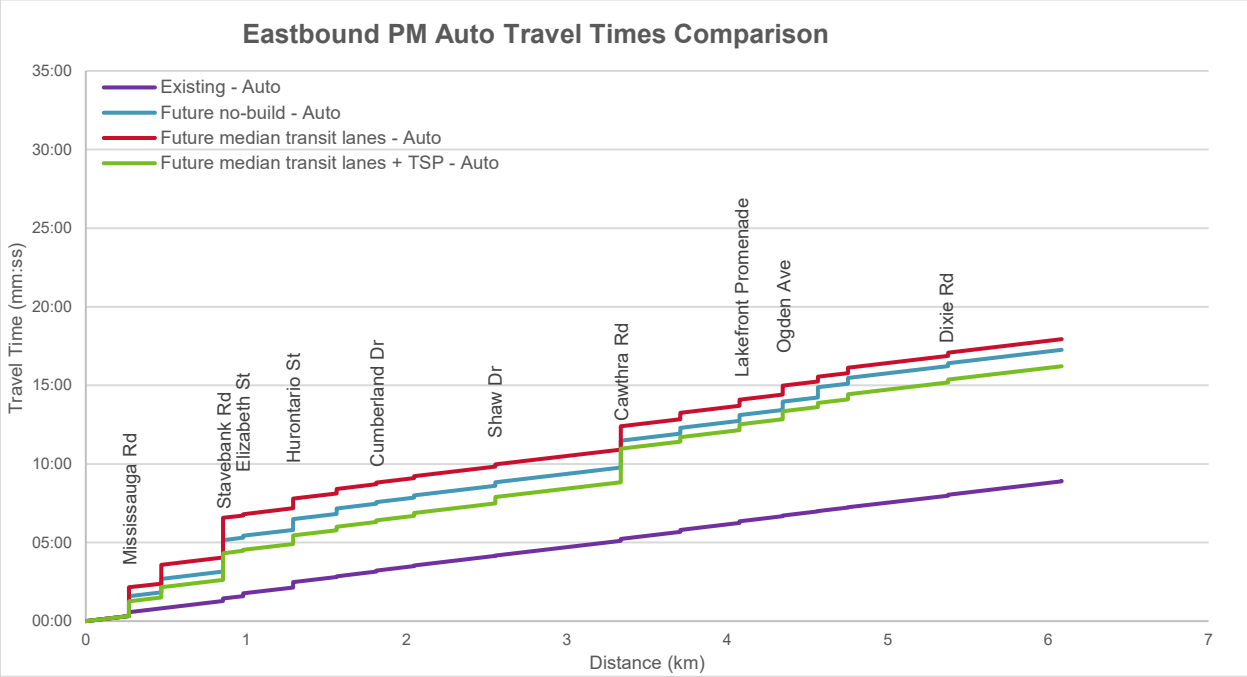
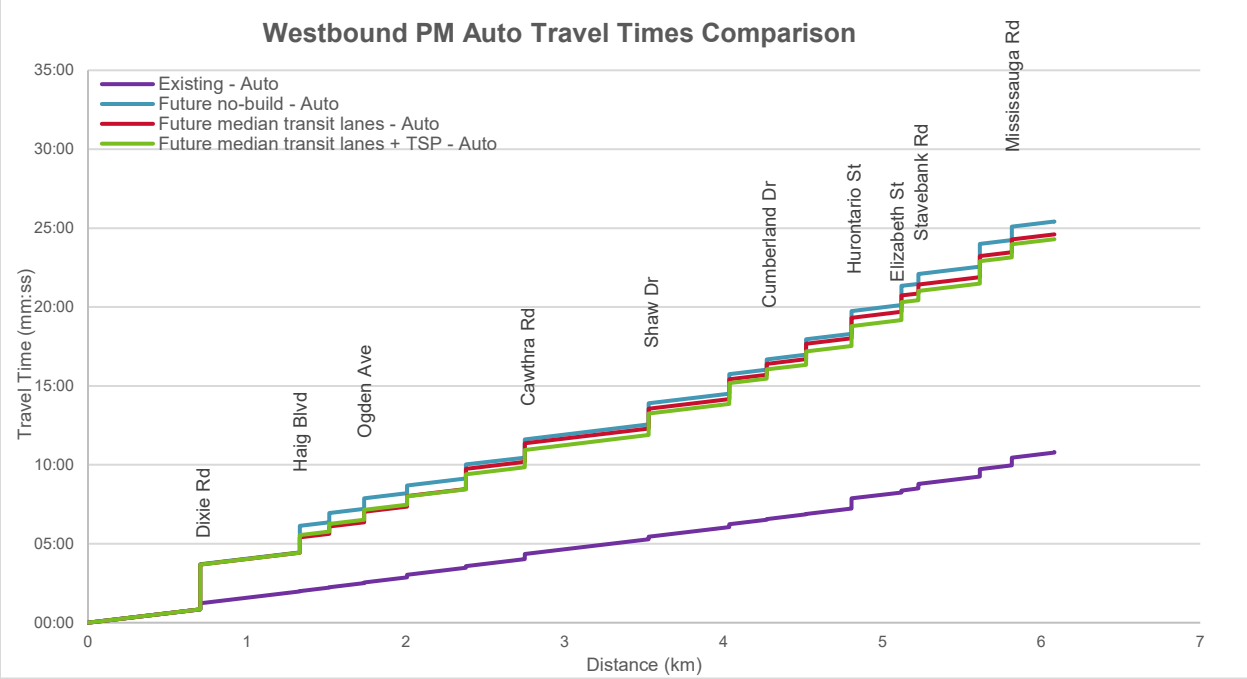


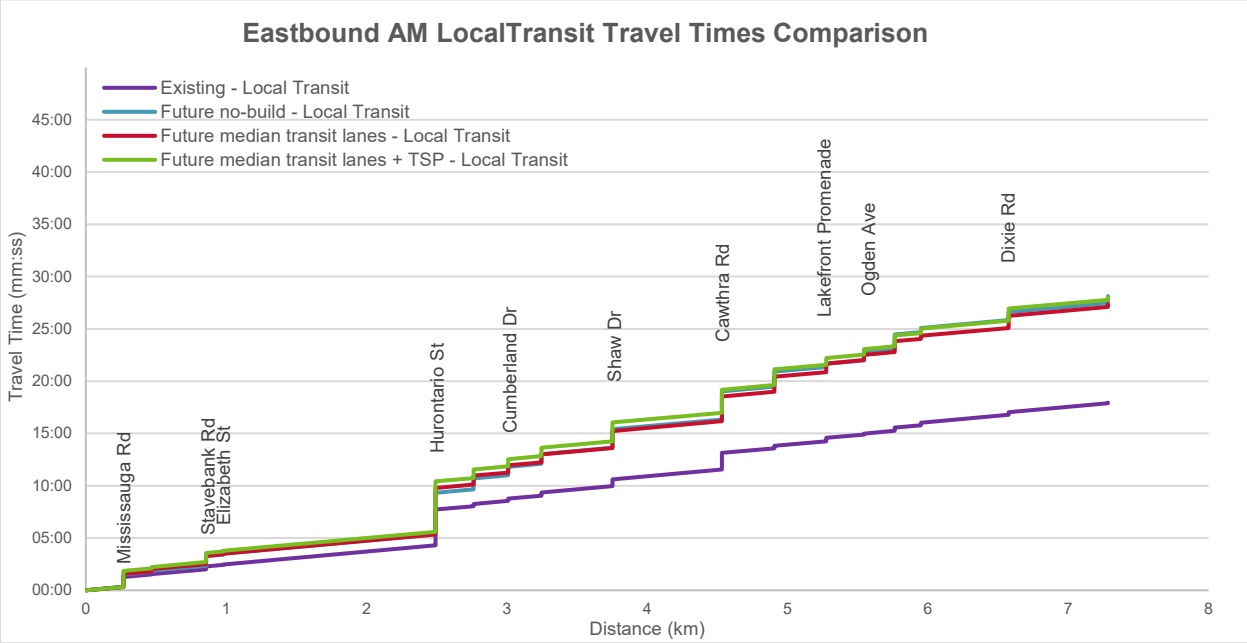
Figure 7: Westbound PM Auto Travel Time Profile



Local Transit Travel Times

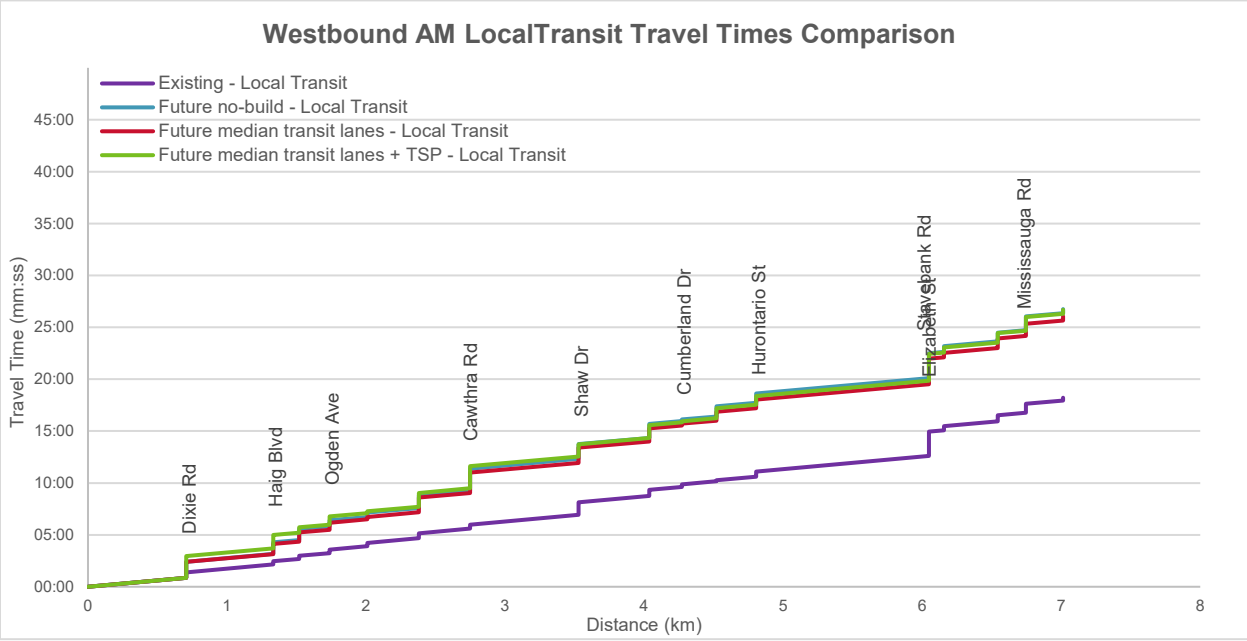
Similar to auto travel times, the travel times of the local transit will stay the same or slightly be improved due to the median transit lanes and TSP implementation.

Figure 8: Eastbound AM Local Transit Travel Time Profile



** Travel time evaluation for local transit (e.g., Route 23) between Elizabeth St and Hurontario St included the operation of the detour going into Port Credit GO Station. The delay included the combined total bus dwell time at all bus stops and intersection delays within the detour.*

Figure 9: Westbound AM Local Transit Travel Time Profile



** Travel time evaluation for local transit (e.g., Route 23) between Elizabeth St and Hurontario St included the operation of the detour going into Port Credit GO Station. The delay included the combined total bus dwell time at all bus stops and intersection delays within the detour.*

Figure 10: Eastbound PM Local Transit Travel Time Profile

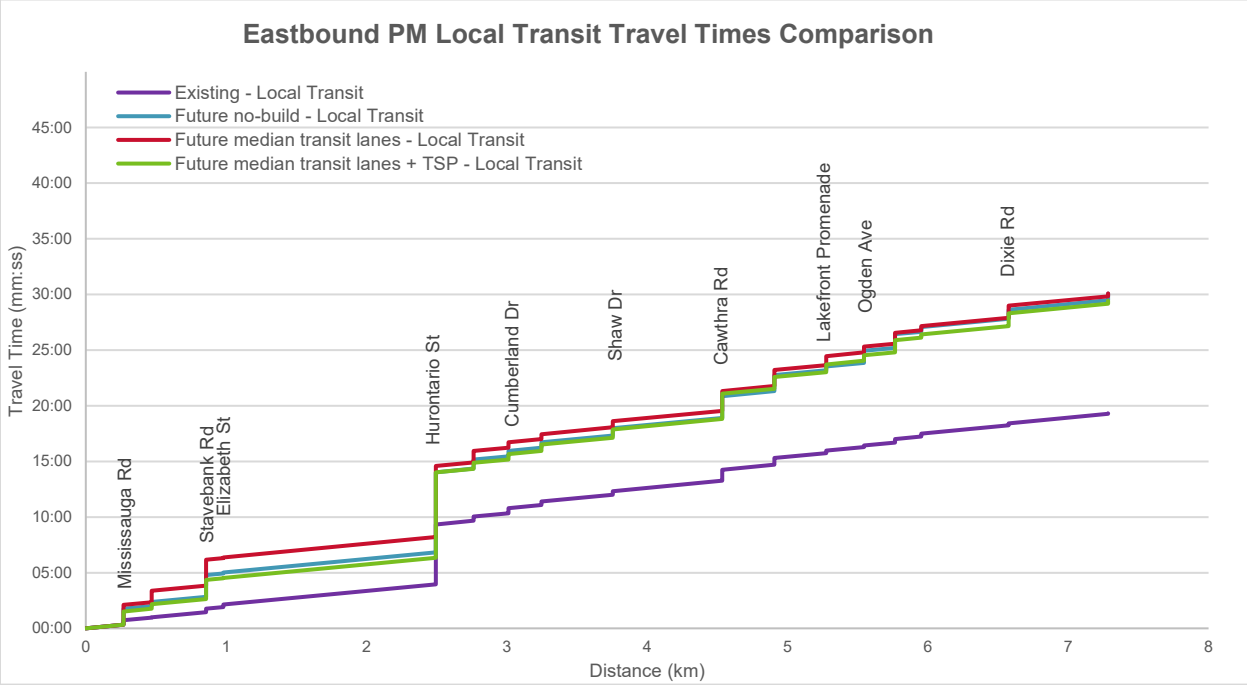
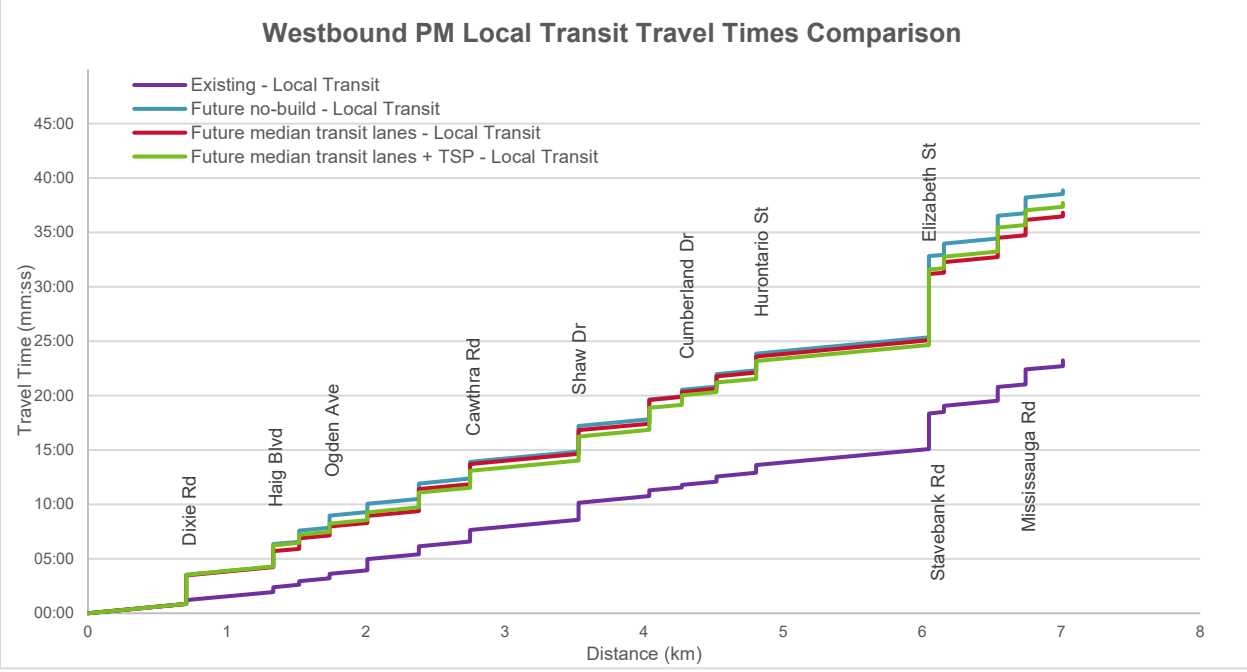


Figure 11: Westbound PM Local Transit Travel Time Profile



Express Route Travel Times

The express route travel time profiles below indicate that both median transit lanes and TSP implementation will improve the transit performance.

Figure 12: Eastbound AM Express Route Travel Time Profile

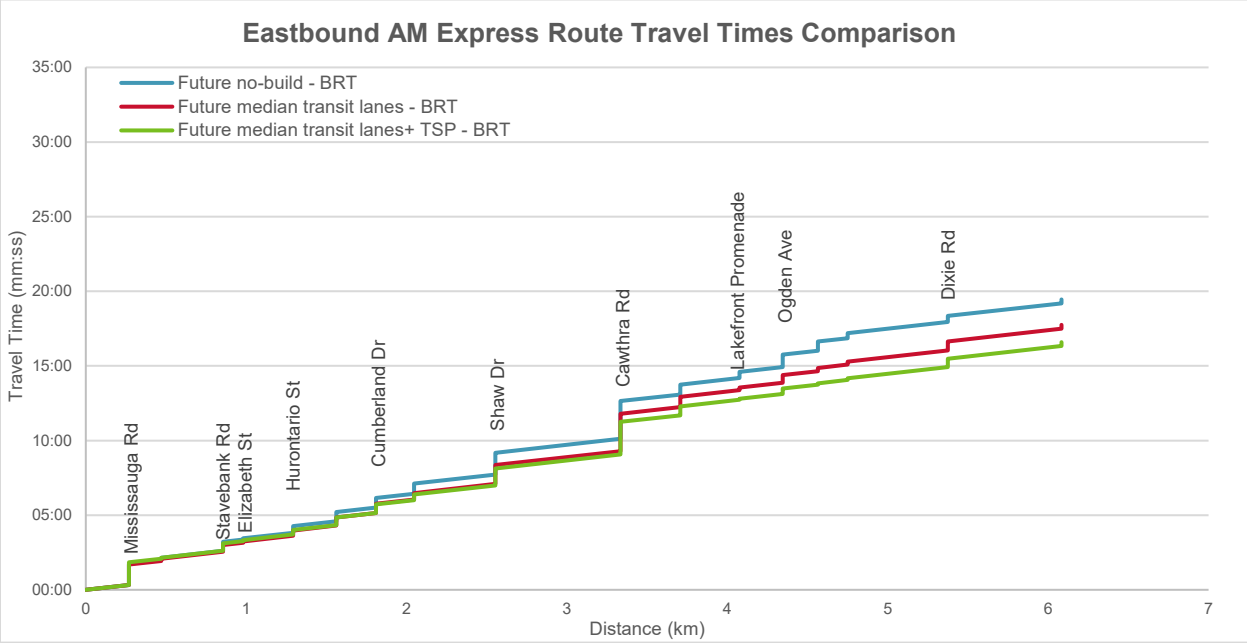


Figure 13: Westbound AM Express Route Travel Time Profile

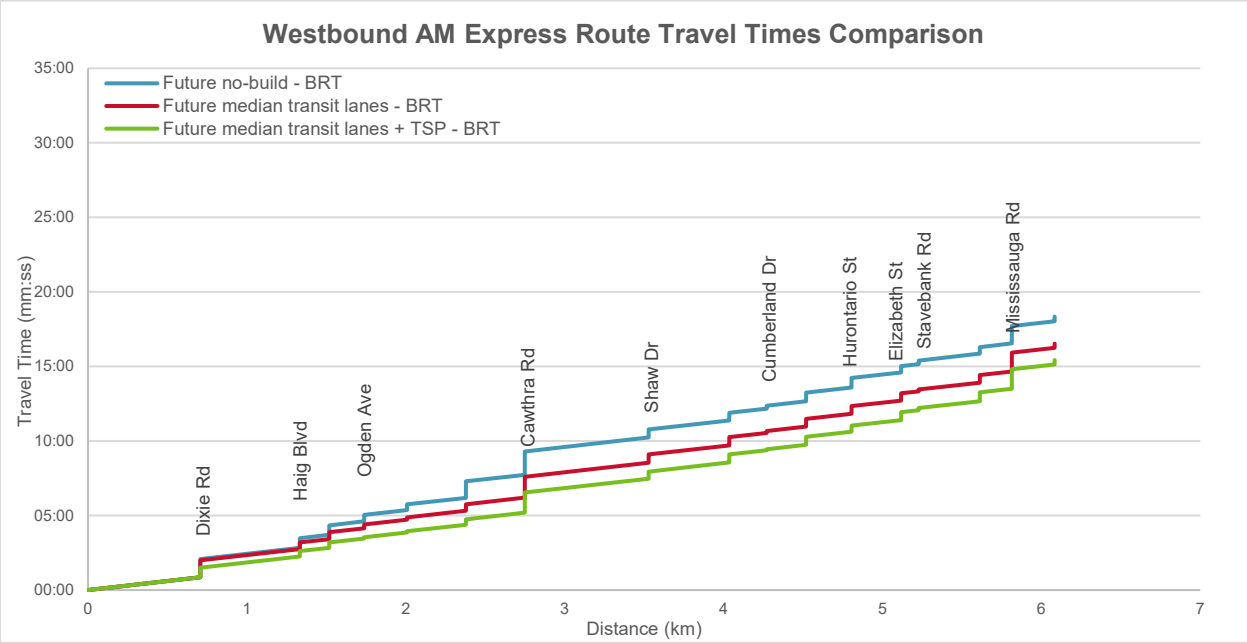


Figure 14: Eastbound PM Express Route Travel Time Profile

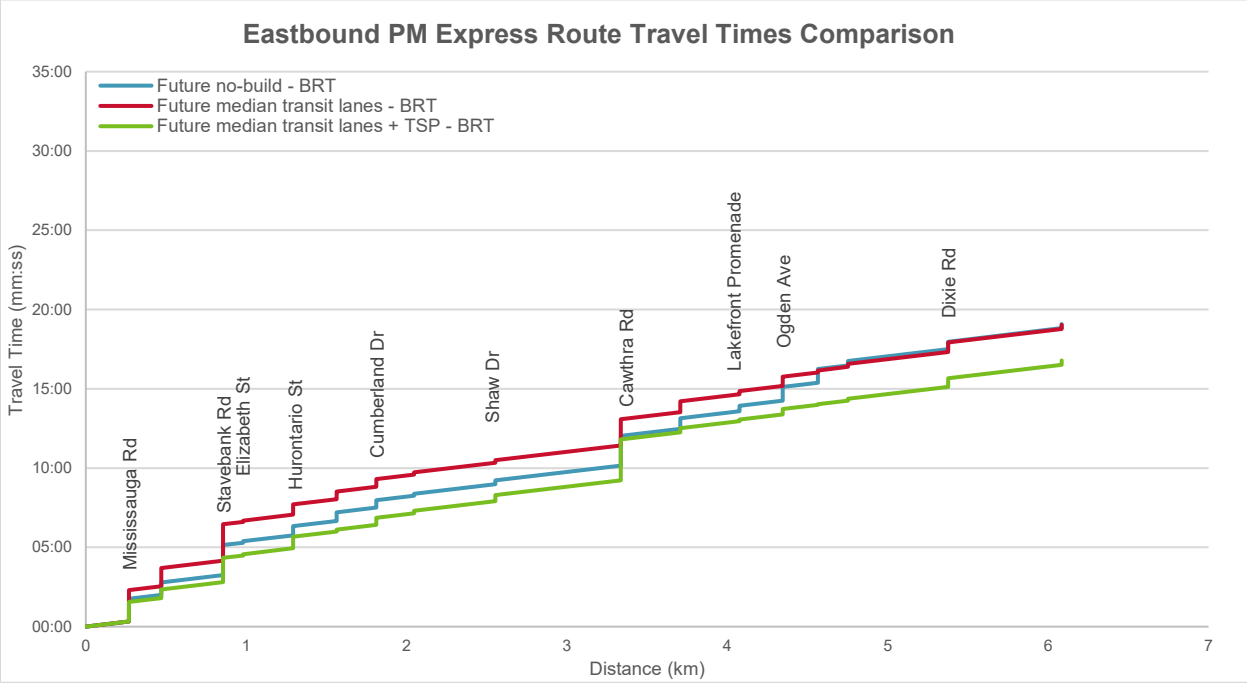
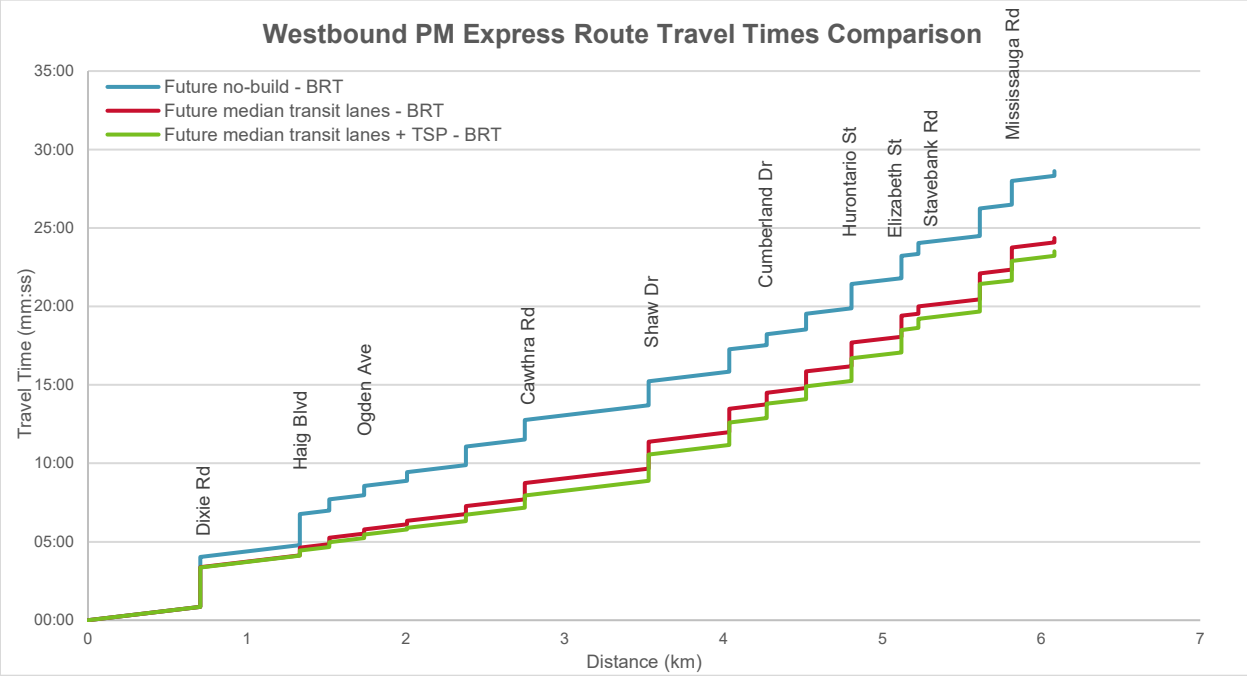


Figure 15: Westbound PM Express Route Travel Time Profile



Findings

Traffic Operations

Compared to existing conditions, the overall level of service will be worsen due to the higher demand under all future scenarios; see detail in **Appendix B of VISSIM Outputs**. The traffic impacts from the proposed median transit lanes and TSP implementation are minimal when comparing future scenarios (including the future no build scenario). According to the model outputs, there were on average 200 vehicles not served from the southbound approach of Mississauga Road and Lakeshore Road intersection for AM peak period, and 200 vehicles from the westbound approach of Dixie Road and Lakeshore Road intersection for PM peak period. This indicates the corridor will be operating over capacity with projected 2041 traffic volumes, and some mitigation solutions should be considered. Other than that, few other intersections may experience a small amount of vehicle not able to enter the models, which, however, is negligible.

In addition to specific recommendations at Dixie and Cawthra, the future Vissim model has also indicated that there would be TSP implementation constraints at Mississauga Road. The southbound left turn traffic volume at Mississauga Road is already high today and the dual left turn lanes are operating at capacity. By 2040, the southbound dual left turn lanes will continue to be busy with long queues and delays; therefore, **it is recommended that any future TSP not truncate the SBL phase during the AM and PM peak periods.**

Transit Operations

The travel times between two successive bus stops are summarized as below. The median transit lanes and TSP implementation will slightly improve the express route operation in terms of travel times for most links as well as travel time reliability, as shown below.

Figure 16: Eastbound AM Express Route Link Travel Time Comparison

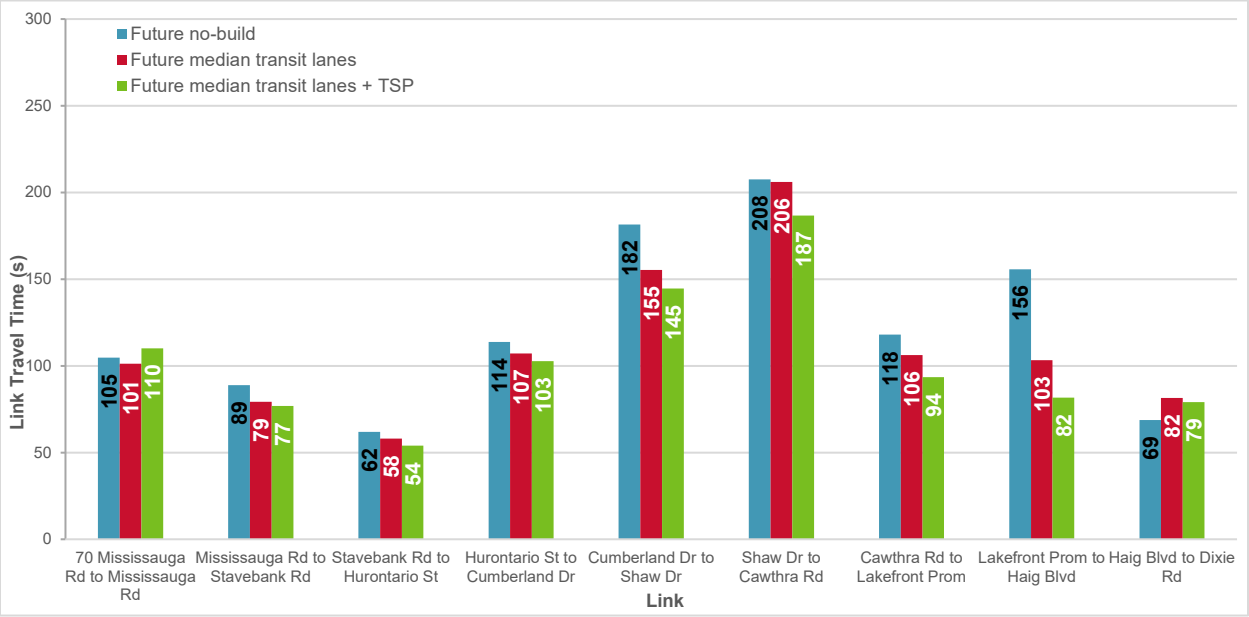


Figure 17: Westbound AM Express Route Link Travel Time Comparison

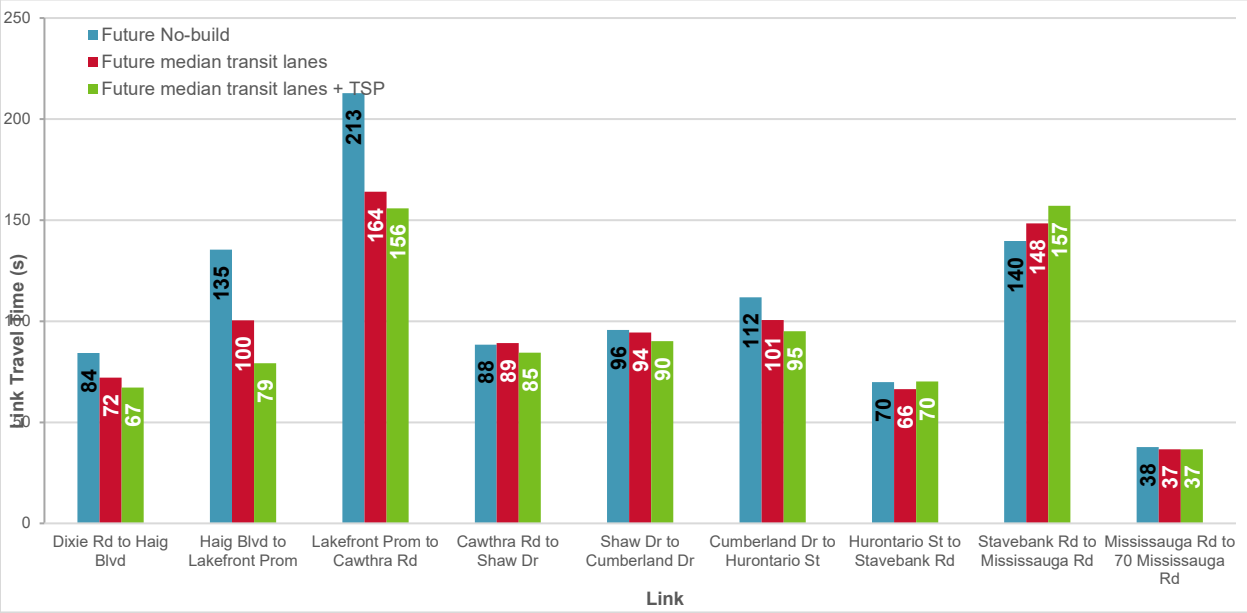
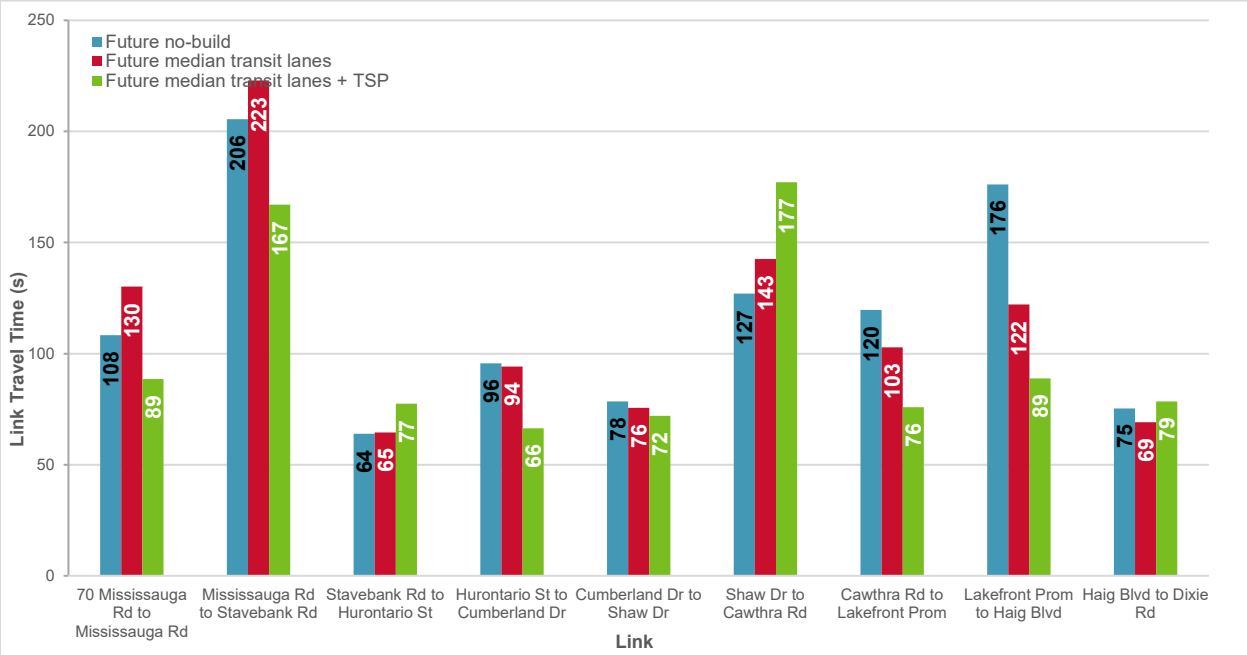


Figure 18: Eastbound PM Express Route Link Travel Time Comparison



**High eastbound left volumes at Cawthra Road cause the serious congestion and delays for all modes.*

Figure 19: Westbound PM Express Route Link Travel Time Comparison

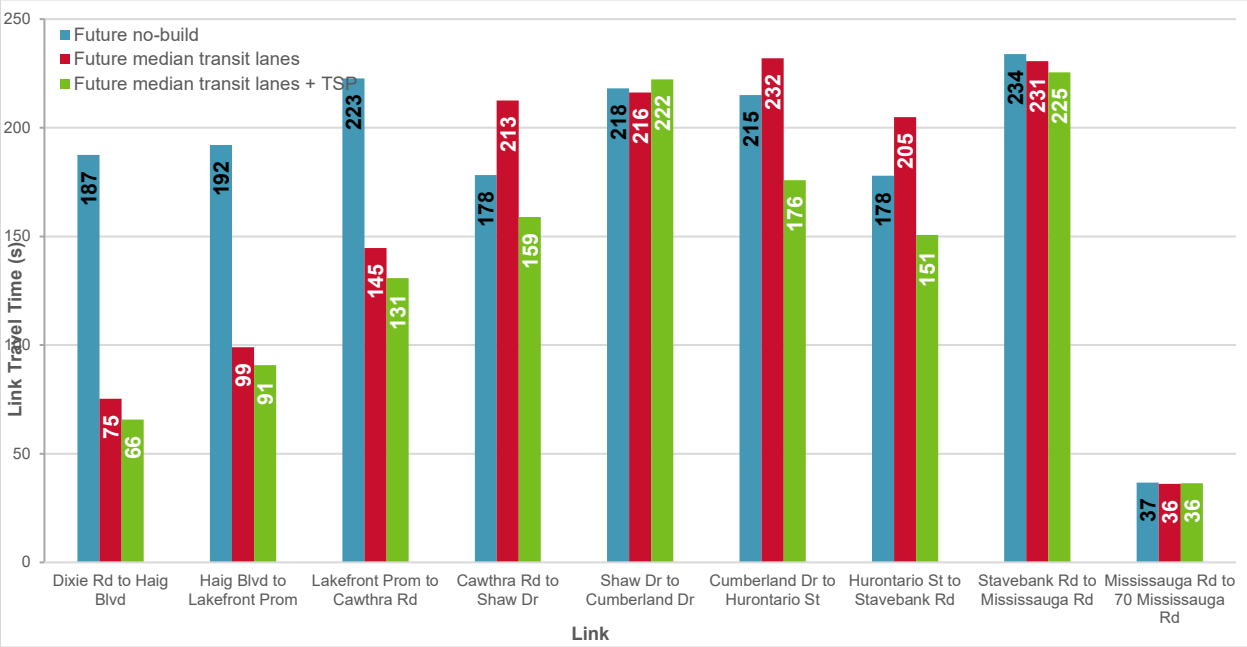


Table 4: Express Route Reliability Comparison

Scenario	AM Peak Period (mm:ss)		PM Peak Period (mm:ss)	
	Eastbound	Westbound	Eastbound	Westbound
Future No-build	±03:14	±04:58	±04:02	±05:58
Future Median transit lanes	±02:33	±04:28	±03:34	±03:48
Future Median transit lanes + TSP	±02:44	±02:41	±02:57	±03:42

The reliability above refers to the travel time adherence, which was collected through the VISSIM model as the standard deviation of average travel times. It depicts the range of the total travel time and provides a reference for future scheduling.

Overall, both the median transit lanes and TSP implementation improve the express route operations.

Summary of Recommendations

A summary of the key recommendations and conclusions for traffic and transit operations along the Study Corridor are as follows:

- It is recommended to implement both median transit lanes and TSP for the proposed express route;
- It is recommended that only green extension TSP is applied at Mississauga Road;
- It is recommended that the EBL will not be truncated at Cawthra Road and Dixie Road;
- Upcoming design stages will address required refinements to signal timing plans, such as adjusting pedestrian clearance times where intersections are widened for median

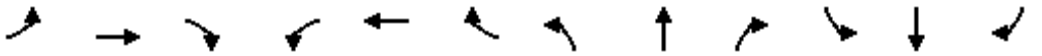
transit lanes or changing the base signal timing plan to maximize the 10 s extend/early green TSP.

- Generally, impact to traffic is minimal. There are a few locations, including the intersections of Lakeshore Road and Ogden Avenue and Lakeshore Road and Lagoon Street where the priority measure may have some undesirable impacts to the cross streets. These can be refined and assessed in future stages of design.

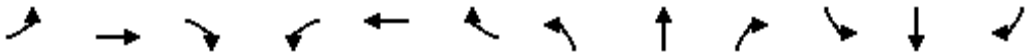
Appendix A

Future Condition Synchro Reports AM and PM:

Lanes, Volumes, Timings



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	619	1050	1	1	1125	276	0	3	2	250	5	377
Future Volume (vph)	619	1050	1	1	1125	276	0	3	2	250	5	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	98.0		0.0	45.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99							0.97
Frt					0.970			0.946				0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1728	3530	0	1745	3384	0	0	1517	0	0	1831	1597
Flt Permitted	0.950			0.950							0.727	
Satd. Flow (perm)	1721	3530	0	1744	3384	0	0	1517	0	0	1397	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					24			2				377
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		201.1			241.3			76.2			320.6	
Travel Time (s)		14.5			17.4			5.5			23.1	
Confl. Peds. (#/hr)	9		1	1		9	2					2
Confl. Bikes (#/hr)	14		19	19		14	14					14
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%	0%	0%	0%	33%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	10	0	0	0	0	0	0
Adj. Flow (vph)	619	1050	1	1	1125	276	0	3	2	250	5	377
Shared Lane Traffic (%)												
Lane Group Flow (vph)	619	1051	0	1	1401	0	0	5	0	0	255	377
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)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	2
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	13.4
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Prot	NA		Prot	NA			NA		Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		8
Detector Phase	5	2		1	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	32.0		13.0	32.0		30.0	30.0		30.0	30.0	30.0
Total Split (s)	51.0	96.0		13.0	58.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	36.4%	68.6%		9.3%	41.4%		22.1%	22.1%		22.1%	22.1%	22.1%
Maximum Green (s)	46.0	89.0		8.0	51.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	5.0	7.0		5.0	7.0			7.0			7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		10.0			10.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		15.0			15.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		1			9		0	0		2	2	2
Act Effct Green (s)	46.0	99.4		8.0	51.0			24.0			24.0	24.0
Actuated g/C Ratio	0.33	0.71		0.06	0.36			0.17			0.17	0.17
v/c Ratio	1.09	0.42		0.01	1.12			0.02			1.07	0.65
Control Delay	109.0	9.5		63.0	106.6			40.6			131.0	10.7
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	109.0	9.5		63.0	106.6			40.6			131.0	10.7
LOS	F	A		E	F			D			F	B
Approach Delay		46.4			106.5			40.6			59.2	
Approach LOS		D			F			D			E	
Queue Length 50th (m)	~192.5	53.3		0.3	~233.2			0.7			~77.7	0.0
Queue Length 95th (m)	#264.3	89.7		2.2	#276.4			4.7			#131.7	29.7
Internal Link Dist (m)		177.1			217.3			52.2			296.6	
Turn Bay Length (m)	98.0			45.0								
Base Capacity (vph)	567	2506		99	1248			261			239	576
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	1.09	0.42		0.01	1.12			0.02			1.07	0.65

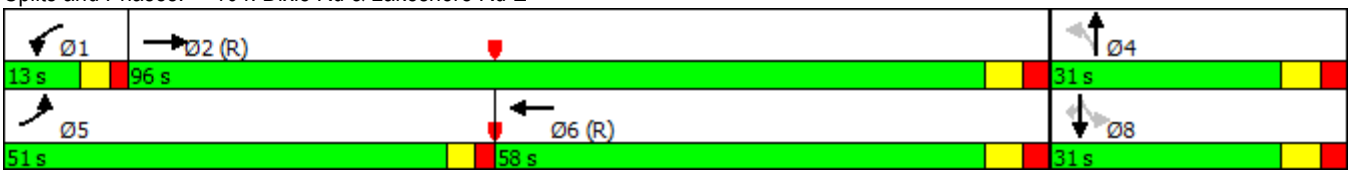
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 150	

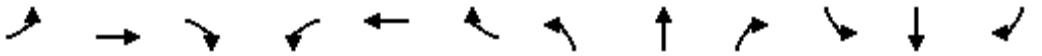
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 71.3	Intersection LOS: E
Intersection Capacity Utilization 111.0%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

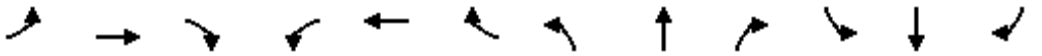
Splits and Phases: 104: Dixie Rd & Lakeshore Rd E



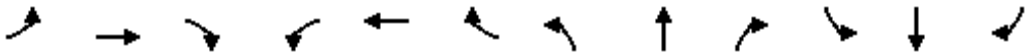


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1665	23	0	1418	2	0	0	5	0	0	55
Future Volume (vph)	0	1665	23	0	1418	2	0	0	5	0	0	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	210.0		0.0	98.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998							0.865			0.865
Flt Protected												
Satd. Flow (prot)	1783	3420	0	1717	3299	0	0	0	1377	0	0	1426
Flt Permitted												
Satd. Flow (perm)	1783	3420	0	1717	3299	0	0	0	1377	0	0	1426
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		420.6			201.1			140.8			210.5	
Travel Time (s)		30.3			14.5			10.1			15.2	
Confl. Peds. (#/hr)							20		6	6		20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	7%	7%	7%	18%	18%	18%	14%	14%	14%
Adj. Flow (vph)	0	1665	23	0	1418	2	0	0	5	0	0	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1688	0	0	1420	0	0	0	5	0	0	55
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	1387	220	201	1201	8	206	82	165	38	69	13
Future Volume (vph)	43	1387	220	201	1201	8	206	82	165	38	69	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.5	3.5	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.7
Storage Length (m)	90.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		0.98				0.99	
Frt		0.979			0.999			0.900			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3294	0	1750	3175	0	1750	1658	0	1475	1736	0
Flt Permitted	0.950			0.950			0.704			0.425		
Satd. Flow (perm)	1647	3294	0	1749	3175	0	1266	1658	0	660	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			1			105			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		166.1			420.6			210.7			223.0	
Travel Time (s)		12.0			30.3			15.2			16.1	
Confl. Peds. (#/hr)	17		1	1		17	16					16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	5%	2%	2%	11%	11%	2%	2%	2%	21%	2%	21%
Adj. Flow (vph)	43	1387	220	201	1201	8	206	82	165	38	69	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	1607	0	201	1209	0	206	247	0	38	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.01	1.01	1.03	1.04	1.01	1.01	1.01	1.01	1.01	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		1	2		1	2		2	2	
Detector Template				Left			Left	Thru			Thru	
Leading Detector (m)	15.2	15.2		2.0	15.2		2.0	10.0		15.2	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		2.0	1.8		2.0	0.6		1.8	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4			13.4			9.4		13.4	9.4	
Detector 2 Size(m)	1.8	1.8			1.8			0.6		1.8	0.6	
Detector 2 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	24.0		13.0	24.0		27.0	27.0		22.0	22.0	
Total Split (s)	13.0	50.0		13.0	50.0		27.0	27.0		27.0	27.0	
Total Split (%)	14.4%	55.6%		14.4%	55.6%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	8.0	44.0		8.0	44.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max		None	None		None	None	
Walk Time (s)		8.0			8.0		9.0	9.0		5.0	5.0	
Flash Dont Walk (s)		8.0			8.0		12.0	12.0		11.0	11.0	
Pedestrian Calls (#/hr)		6			6		5	5		0	0	
Act Effct Green (s)	8.0	44.0		10.8	52.0		18.2	18.2		18.2	18.2	
Actuated g/C Ratio	0.09	0.49		0.12	0.58		0.20	0.20		0.20	0.20	
v/c Ratio	0.29	0.99		0.96	0.66		0.80	0.59		0.29	0.23	
Control Delay	32.7	45.8		98.1	17.4		57.4	23.8		35.0	26.8	
Queue Delay	0.0	38.7		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.7	84.5		98.1	17.4		57.4	23.8		35.0	26.8	
LOS	C	F		F	B		E	C		D	C	
Approach Delay		83.2			28.9			39.1			29.4	
Approach LOS		F			C			D			C	
Queue Length 50th (m)	6.1	158.7		~41.6	84.7		33.2	21.0		5.4	10.2	
Queue Length 95th (m)	m6.5	m#161.6		#85.8	113.3		#62.6	43.6		14.2	21.5	
Internal Link Dist (m)		142.1			396.6			186.7			199.0	
Turn Bay Length (m)	90.0			20.0								
Base Capacity (vph)	147	1624		209	1833		295	467		154	412	
Starvation Cap Reductn	0	168		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	1.10		0.96	0.66		0.70	0.53		0.25	0.20	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	

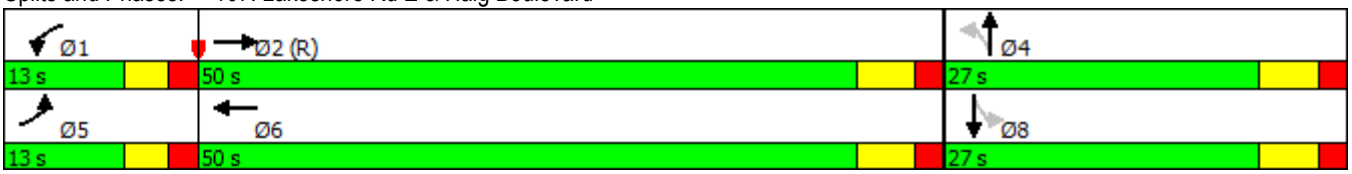
Intersection Signal Delay: 54.8	Intersection LOS: D
Intersection Capacity Utilization 96.8%	ICU Level of Service F
Analysis Period (min) 15	

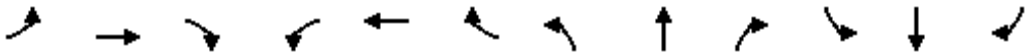
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

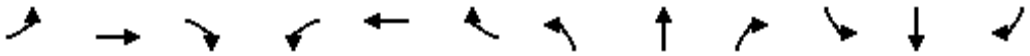
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 107: Lakeshore Rd E & Haig Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1519	220	201	1152	16	206	97	165	20	10	20
Future Volume (vph)	57	1519	220	201	1152	16	206	97	165	20	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	20.0		0.0	90.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		0.99				0.99	
Frt		0.981			0.998			0.906			0.946	
Flt Protected	0.950			0.950			0.950				0.980	
Satd. Flow (prot)	1745	3450	0	1631	3323	0	1785	1637	0	0	1768	0
Flt Permitted	0.950			0.950			0.724				0.588	
Satd. Flow (perm)	1733	3450	0	1630	3323	0	1352	1637	0	0	1061	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			2			83			20	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		236.7			166.1			238.8			75.5	
Travel Time (s)		17.0			12.0			17.2			5.4	
Confl. Peds. (#/hr)	12		2	2		12	4					4
Confl. Bikes (#/hr)	5		5	5		5						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	7%	6%	0%	0%	0%	10%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	57	1519	220	201	1152	16	206	97	165	20	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	1739	0	201	1168	0	206	262	0	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		2	2		2	2		1	2	
Detector Template	Left							Thru		Left	Thru	
Leading Detector (m)	2.0	15.2		15.2	15.2		15.2	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	1.8		1.8	1.8		1.8	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		13.4		13.4	13.4		13.4	9.4			9.4	
Detector 2 Size(m)		1.8		1.8	1.8		1.8	0.6			0.6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	22.0		13.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	13.0	51.0		17.0	55.0		22.0	22.0		22.0	22.0	
Total Split (%)	14.4%	56.7%		18.9%	61.1%		24.4%	24.4%		24.4%	24.4%	
Maximum Green (s)	8.0	45.0		12.0	49.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		6.0	6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	8.0	45.0		12.0	51.6		16.0	16.0			16.0	
Actuated g/C Ratio	0.09	0.50		0.13	0.57		0.18	0.18			0.18	
v/c Ratio	0.37	1.00		0.93	0.61		0.86	0.73			0.24	
Control Delay	45.9	45.2		75.0	17.8		68.8	37.0			25.1	
Queue Delay	0.0	22.3		0.0	0.4		0.0	95.1			166.8	
Total Delay	45.9	67.5		75.0	18.2		68.8	132.1			191.9	
LOS	D	E		E	B		E	F			F	
Approach Delay		66.8			26.5			104.2			191.9	
Approach LOS		E			C			F			F	
Queue Length 50th (m)	9.5	~149.8		29.2	99.3		34.9	29.4			4.4	
Queue Length 95th (m)	21.1	#207.6		m#69.3	117.0		#72.6	#62.6			14.5	
Internal Link Dist (m)		212.7			142.1			214.8			51.5	
Turn Bay Length (m)	20.0			90.0								
Base Capacity (vph)	155	1737		217	1906		240	359			205	
Starvation Cap Reductn	0	0		0	278		0	0			0	
Spillback Cap Reductn	0	106		0	0		0	309			192	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.37	1.07		0.93	0.72		0.86	5.24			3.85	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90

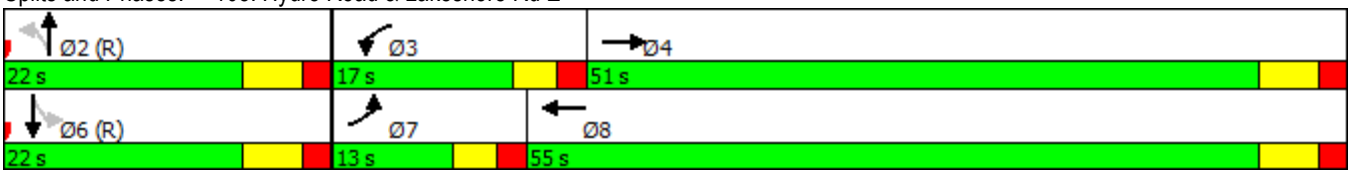
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 58.3	Intersection LOS: E
Intersection Capacity Utilization 95.1%	ICU Level of Service F
Analysis Period (min) 15	

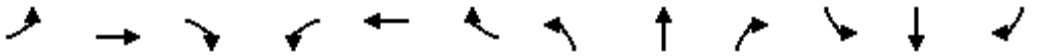
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

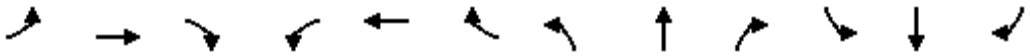
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 108: Hydro Road & Lakeshore Rd E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	1739	220	201	1237	19	206	199	165	119	204	142
Future Volume (vph)	142	1739	220	201	1237	19	206	199	165	119	204	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	130.0		0.0	25.0		0.0	20.0		0.0	35.6		20.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.99		0.99	0.98	
Frt		0.983			0.998			0.932			0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	3325	0	1616	3260	0	1539	1528	0	1668	1659	0
Flt Permitted	0.950			0.950			0.154			0.394		
Satd. Flow (perm)	1675	3325	0	1614	3260	0	249	1528	0	688	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			2			29			21	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		266.7			236.7			111.2			254.0	
Travel Time (s)		19.2			17.0			8.0			18.3	
Confl. Peds. (#/hr)	2		3	3		2	12		5	5		12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	8%	8%	8%	16%	16%	16%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	10	0	0	0	0	0	0
Adj. Flow (vph)	142	1739	220	201	1237	19	206	199	165	119	204	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	1959	0	201	1256	0	206	364	0	119	346	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases							4			8		
Detector Phase	5	2		1	6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	24.0		13.0	24.0		11.0	27.0		27.0	27.0	
Total Split (s)	21.0	78.0		19.0	76.0		13.0	43.0		30.0	30.0	
Total Split (%)	15.0%	55.7%		13.6%	54.3%		9.3%	30.7%		21.4%	21.4%	
Maximum Green (s)	16.0	72.0		14.0	70.0		10.0	36.0		23.0	23.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		3.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max		None	Min		Min	Min	
Walk Time (s)		8.0			8.0			8.0		8.0	8.0	
Flash Dont Walk (s)		10.0			10.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)		2			2			6		6	6	
Act Effct Green (s)	14.9	72.0		14.0	71.1		40.0	36.0		23.0	23.0	
Actuated g/C Ratio	0.11	0.51		0.10	0.51		0.29	0.26		0.16	0.16	
v/c Ratio	0.80	1.14		1.25	0.76		1.26	0.88		1.05	1.19	
Control Delay	91.3	103.6		202.5	31.5		194.7	68.7		154.7	161.7	
Queue Delay	0.0	0.1		0.0	0.7		0.0	0.0		0.0	0.0	
Total Delay	91.3	103.7		202.5	32.2		194.7	68.7		154.7	161.7	
LOS	F	F		F	C		F	E		F	F	
Approach Delay		102.9			55.7			114.2			159.9	
Approach LOS		F			E			F			F	
Queue Length 50th (m)	38.7	~332.7		~69.1	145.2		~55.7	90.5		~35.9	~110.7	
Queue Length 95th (m)	#69.6	#374.4		#118.5	173.7		#106.7	#145.6		#76.1	#171.9	
Internal Link Dist (m)		242.7			212.7			87.2			230.0	
Turn Bay Length (m)	130.0			25.0			20.0			35.6		
Base Capacity (vph)	191	1716		161	1657		163	414		113	290	
Starvation Cap Reductn	0	44		0	143		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.74	1.17		1.25	0.83		1.26	0.88		1.05	1.19	

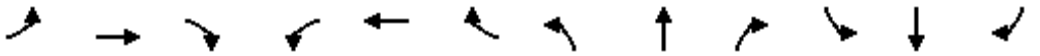
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 95.1	Intersection LOS: F
Intersection Capacity Utilization 115.9%	ICU Level of Service H
Analysis Period (min) 15	

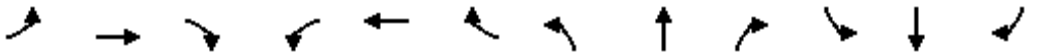
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 110: Lakeshore Rd E & Ogden Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	2013	44	25	1535	2	48	9	16	0	0	0
Future Volume (vph)	10	2013	44	25	1535	2	48	9	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	20.0		20.0	40.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.99				
Frt		0.997						0.904				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1662	3349	0	1631	3299	0	1539	1481	0	0	1921	0
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1660	3349	0	1629	3299	0	1219	1481	0	0	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						16				
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		382.7			266.7			249.8			64.2	
Travel Time (s)		27.6			19.2			18.0			4.6	
Confl. Peds. (#/hr)	3		8	8		3	4		3	3		4
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 (%)	5%	5%	5%	7%	7%	7%	16%	16%	16%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	10	2013	44	25	1535	2	48	9	16	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	2057	0	25	1537	0	48	25	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



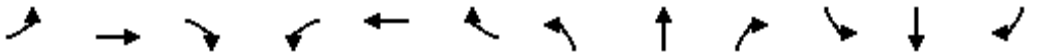
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA				
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	25.0		13.0	25.0		29.0	29.0		29.0	29.0	
Total Split (s)	13.0	68.0		13.0	68.0		29.0	29.0		29.0	29.0	
Total Split (%)	11.8%	61.8%		11.8%	61.8%		26.4%	26.4%		26.4%	26.4%	
Maximum Green (s)	8.0	62.0		8.0	62.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		7.0	7.0			7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max		Min	Min		Min	Min	
Walk Time (s)		8.0			8.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)		11.0			11.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		4			4		2	2		2	2	
Act Effct Green (s)	8.0	77.3		8.0	82.6		11.8	11.8				
Actuated g/C Ratio	0.07	0.70		0.07	0.75		0.11	0.11				
v/c Ratio	0.08	0.87		0.21	0.62		0.37	0.14				
Control Delay	49.3	20.7		52.6	10.0		51.4	24.8				
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				
Total Delay	49.3	20.7		52.6	10.0		51.4	24.8				
LOS	D	C		D	A		D	C				
Approach Delay		20.8			10.7			42.3				
Approach LOS		C			B			D				
Queue Length 50th (m)	2.1	176.0		5.1	53.5		10.0	1.8				
Queue Length 95th (m)	7.5	#305.7		13.7	166.8		19.3	8.8				
Internal Link Dist (m)		358.7			242.7			225.8			40.2	
Turn Bay Length (m)	20.0			40.0								
Base Capacity (vph)	120	2355		118	2476		243	309				
Starvation Cap Reductn	0	0		0	0		0	0				
Spillback Cap Reductn	0	0		0	0		0	0				
Storage Cap Reductn	0	0		0	0		0	0				
Reduced v/c Ratio	0.08	0.87		0.21	0.62		0.20	0.08				

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

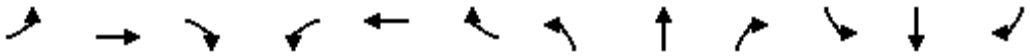
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 113: Lakefront Promenade/Lakefront Promenade / Driveway & Lakeshore Rd E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1921	102	56	1427	11	33	5	41	15	6	10
Future Volume (vph)	27	1921	102	56	1427	11	33	5	41	15	6	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		20.0	20.0		20.0	0.0		0.0	21.1		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Frt		0.992			0.999			0.866			0.906	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3330	0	1572	3176	0	1684	1547	0	1638	1580	0
Flt Permitted	0.950			0.950			0.747			0.727		
Satd. Flow (perm)	1661	3330	0	1571	3176	0	1318	1547	0	1248	1580	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			1			41			10	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		235.5			382.7			263.0			216.7	
Travel Time (s)		17.0			27.6			23.7			15.6	
Confl. Peds. (#/hr)	1		3	3		1	4		4	4		4
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 (%)	5%	5%	5%	11%	11%	11%	6%	6%	6%	9%	9%	9%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	27	1921	102	56	1427	11	33	5	41	15	6	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	2023	0	56	1438	0	33	46	0	15	16	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



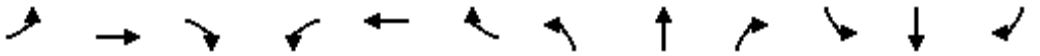
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	9.0	24.0		9.0	24.0		43.0	43.0		43.0	43.0	
Total Split (s)	9.0	77.0		10.0	78.0		43.0	43.0		43.0	43.0	
Total Split (%)	6.9%	59.2%		7.7%	60.0%		33.1%	33.1%		33.1%	33.1%	
Maximum Green (s)	4.0	71.0		5.0	72.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		8.0	8.0		8.0	8.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max		Min	Min		Min	Min	
Walk Time (s)		8.0			8.0		14.0	14.0		14.0	14.0	
Flash Dont Walk (s)		10.0			10.0		21.0	21.0		21.0	21.0	
Pedestrian Calls (#/hr)		1			1		3	3		3	3	
Act Effct Green (s)	6.6	87.3		9.7	94.9		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.05	0.67		0.07	0.73		0.11	0.11		0.11	0.11	
v/c Ratio	0.32	0.90		0.48	0.62		0.23	0.23		0.11	0.09	
Control Delay	70.0	25.9		71.2	12.9		52.7	17.7		48.5	28.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	70.0	25.9		71.2	12.9		52.7	17.7		48.5	28.0	
LOS	E	C		E	B		D	B		D	C	
Approach Delay		26.5			15.1			32.3			37.9	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	6.7	190.2		13.8	85.5		8.3	1.2		3.7	1.5	
Queue Length 95th (m)	#21.0	#354.1		#41.9	183.8		15.0	10.5		8.6	6.9	
Internal Link Dist (m)		211.5			358.7			239.0			192.7	
Turn Bay Length (m)	15.0			20.0						21.1		
Base Capacity (vph)	84	2238		117	2319		354	446		336	432	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.32	0.90		0.48	0.62		0.09	0.10		0.04	0.04	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 79.1%	ICU Level of Service D
Analysis Period (min) 15	

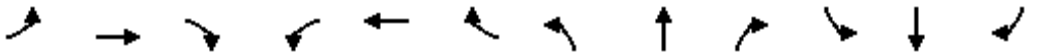
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 116: East Ave & Lakeshore Rd E



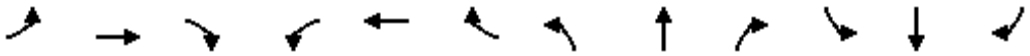
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	2143	2	6	1505	12	8	4	49	17	1	11
Future Volume (vph)	3	2143	2	6	1505	12	8	4	49	17	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999			0.861			0.949	
Flt Protected	0.950			0.950			0.950				0.972	
Satd. Flow (prot)	1728	3495	0	1631	3296	0	1653	1532	0	0	1688	0
Flt Permitted	0.950			0.950			0.950				0.972	
Satd. Flow (perm)	1728	3495	0	1631	3296	0	1653	1532	0	0	1688	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		141.3			235.5			141.8			120.3	
Travel Time (s)		10.2			17.0			10.2			8.7	
Confl. Peds. (#/hr)							16		10	10		16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	7%	7%	8%	8%	8%	5%	5%	5%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	3	2143	2	6	1505	12	8	4	49	17	1	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	2145	0	6	1517	0	8	53	0	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	642	1464	0	0	1062	447	0	0	0	524	0	403
Future Volume (vph)	642	1464	0	0	1062	447	0	0	0	524	0	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	59.0		0.0
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor					0.99					1.00	1.00	0.97
Frt					0.956							0.850
Flt Protected	0.950									0.950	0.950	
Satd. Flow (prot)	1662	3394	0	1837	2845	0	0	1921	0	1615	1651	1426
Flt Permitted	0.057									0.950	0.950	
Satd. Flow (perm)	100	3394	0	1837	2845	0	0	1921	0	1611	1647	1386
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					57							161
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		96.9			141.3			49.2			282.4	
Travel Time (s)		7.0			10.2			3.5			20.3	
Confl. Peds. (#/hr)	6		2	2		6	19		1	1		19
Confl. Bikes (#/hr)									1	1		
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 (%)	5%	4%	0%	0%	21%	9%	0%	0%	0%	5%	0%	12%
Adj. Flow (vph)	642	1464	0	0	1062	447	0	0	0	524	0	403
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	642	1464	0	0	1509	0	0	0	0	262	262	403
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)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	2
Detector Template												
Leading Detector (m)	11.8	11.8		15.2	15.2		11.8	11.8		15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	10.0	10.0		13.4	13.4		10.0	10.0		13.4	13.4	13.4
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex

Lane Group	Ø8
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (m)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (k/h)	
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA					Split	NA	pm+ov
Protected Phases	5	2			6			3		4	4	5
Permitted Phases	2			6			3					4
Detector Phase	5	2		6	6		3	3		4	4	5
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	5.0
Minimum Split (s)	8.0	39.0		39.0	39.0		15.0	15.0		15.0	15.0	8.0
Total Split (s)	35.0	101.0		66.0	66.0		15.0	15.0		24.0	24.0	35.0
Total Split (%)	25.0%	72.1%		47.1%	47.1%		10.7%	10.7%		17.1%	17.1%	25.0%
Maximum Green (s)	32.0	94.0		59.0	59.0		8.0	8.0		17.0	17.0	32.0
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	3.0
All-Red Time (s)	0.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		7.0	7.0			7.0		7.0	7.0	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None		Min	Min	None
Walk Time (s)		12.0		12.0	12.0					0.0	0.0	
Flash Dont Walk (s)		20.0		20.0	20.0					0.0	0.0	
Pedestrian Calls (#/hr)		2		6	6					0	0	
Act Effct Green (s)	110.6	106.6			71.6					19.4	19.4	55.4
Actuated g/C Ratio	0.79	0.76			0.51					0.14	0.14	0.40
v/c Ratio	1.48	0.57			1.02					1.17	1.15	0.62
Control Delay	258.6	8.5			60.6					165.1	157.1	22.3
Queue Delay	0.0	0.5			0.0					0.0	0.0	0.0
Total Delay	258.6	9.0			60.6					165.1	157.1	22.3
LOS	F	A			E					F	F	C
Approach Delay		85.1			60.6						100.8	
Approach LOS		F			E						F	
Queue Length 50th (m)	~227.7	71.6			205.4					~99.1	~97.7	52.8
Queue Length 95th (m)	#306.2	125.1			#300.2					#114.7	#112.5	73.5
Internal Link Dist (m)		72.9			117.3			25.2			258.4	
Turn Bay Length (m)	20.0									59.0		
Base Capacity (vph)	435	2584			1482					224	228	654
Starvation Cap Reductn	0	606			0					0	0	0
Spillback Cap Reductn	0	0			0					0	0	0
Storage Cap Reductn	0	0			0					0	0	0
Reduced v/c Ratio	1.48	0.74			1.02					1.17	1.15	0.62

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	

Lane Group	Ø8
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	8
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	36.0
Total Split (s)	39.0
Total Split (%)	28%
Maximum Green (s)	32.0
Yellow Time (s)	4.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	11.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

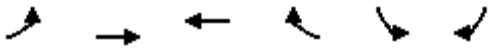
Intersection Summary

Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 80.2	Intersection LOS: F
Intersection Capacity Utilization 115.6%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

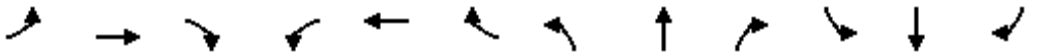
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Lakeshore Rd E & Cawthra Rd

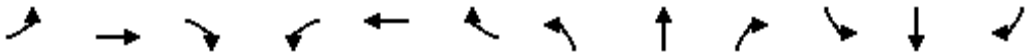


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	2141	1445	19	11	36
Future Volume (vph)	11	2141	1445	19	11	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.5	3.5
Storage Length (m)	20.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1711	3461	3323	0	1608	1439
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1711	3461	3323	0	1608	1439
Link Speed (k/h)		50	50		50	
Link Distance (m)		144.4	96.9		131.9	
Travel Time (s)		10.4	7.0		9.5	
Confl. Peds. (#/hr)					2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	6%	6%	11%	11%
Adj. Flow (vph)	11	2141	1445	19	11	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	2141	1464	0	11	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane		Yes				
Headway Factor	1.04	1.03	1.03	1.04	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	2267	5	11	1487	10	10	6	37	24	2	29
Future Volume (vph)	34	2267	5	11	1487	10	10	6	37	24	2	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.5	3.5	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	25.0		0.0	25.0		0.0	15.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										1.00	0.99	
Frt					0.999			0.871			0.860	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	3394	0	1750	3206	0	1750	1604	0	1733	1546	0
Flt Permitted	0.158			0.051			0.737			0.729		
Satd. Flow (perm)	279	3394	0	94	3206	0	1358	1604	0	1328	1546	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1			10			29	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		246.1			144.4			69.3			68.6	
Travel Time (s)		17.7			10.4			5.0			4.9	
Confl. Peds. (#/hr)										1		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 (%)	4%	4%	2%	2%	10%	10%	2%	2%	2%	3%	2%	3%
Adj. Flow (vph)	34	2267	5	11	1487	10	10	6	37	24	2	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	2272	0	11	1497	0	10	43	0	24	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	1.03	1.01	1.01	1.03	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		1	2		1	2		2	2	
Detector Template				Left			Left	Thru			Thru	
Leading Detector (m)	15.2	15.2		2.0	15.2		2.0	10.0		15.2	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		2.0	1.8		2.0	0.6		1.8	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4			13.4			9.4		13.4	9.4	
Detector 2 Size(m)	1.8	1.8			1.8			0.6		1.8	0.6	
Detector 2 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		28.0	28.0		28.0	28.0	
Total Split (s)	72.0	72.0		72.0	72.0		28.0	28.0		28.0	28.0	
Total Split (%)	72.0%	72.0%		72.0%	72.0%		28.0%	28.0%		28.0%	28.0%	
Maximum Green (s)	66.0	66.0		66.0	66.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	87.3	87.3		87.3	87.3		8.7	8.7		8.7	8.7	
Actuated g/C Ratio	0.87	0.87		0.87	0.87		0.09	0.09		0.09	0.09	
v/c Ratio	0.14	0.77		0.13	0.53		0.09	0.29		0.21	0.19	
Control Delay	3.9	7.4		6.8	3.8		43.1	39.9		46.5	19.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.9	7.4		6.8	3.8		43.1	39.9		46.5	19.4	
LOS	A	A		A	A		D	D		D	B	
Approach Delay		7.4			3.8			40.5			31.2	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	1.2	107.1		0.4	43.7		1.8	6.1		4.4	0.4	
Queue Length 95th (m)	4.1	166.3		2.4	65.6		6.7	16.2		12.1	8.8	
Internal Link Dist (m)		222.1			120.4			45.3			44.6	
Turn Bay Length (m)	25.0			25.0			15.0					
Base Capacity (vph)	243	2964		82	2800		298	360		292	362	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.77		0.13	0.53		0.03	0.12		0.08	0.09	

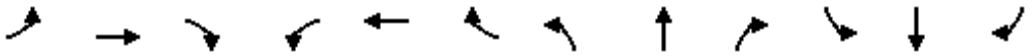
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	

Intersection Signal Delay: 6.8	Intersection LOS: A
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 122: Lakeshore Rd E & Lagoon St

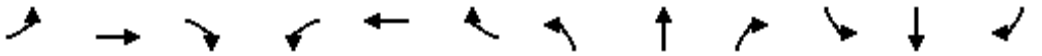
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2214	23	38	1561	20	27
Future Volume (vph)	2214	23	38	1561	20	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.3	3.3	3.4	3.5	3.5
Storage Length (m)		0.0	20.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	0	1631	3299	1785	1597
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	0	1631	3299	1785	1597
Link Speed (k/h)	50			50	50	
Link Distance (m)	148.0			246.1	257.7	
Travel Time (s)	10.7			17.7	18.6	
Confl. Peds. (#/hr)		1	1		2	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	7%	7%	0%	0%
Bus Blockages (#/hr)	0	5	0	0	0	0
Adj. Flow (vph)	2214	23	38	1561	20	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2237	0	38	1561	20	27
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.03	1.04	1.04	1.03	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.2%		ICU Level of Service D	
Analysis Period (min) 15			

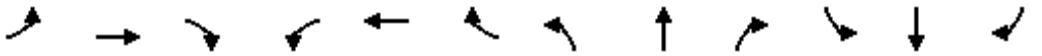


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	2154	11	30	1545	17	9	1	22	12	1	11
Future Volume (vph)	11	2154	11	30	1545	17	9	1	22	12	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	25.0		0.0	30.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.998			0.857			0.862	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1694	3424	0	1646	3323	0	1733	1598	0	1785	1656	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1694	3424	0	1646	3323	0	1733	1598	0	1785	1656	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		170.8			148.0			200.3			293.2	
Travel Time (s)		12.3			10.7			14.4			21.1	
Confl. Peds. (#/hr)			2	2			33		9	9		33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	11	2154	11	30	1545	17	9	1	22	12	1	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	2165	0	30	1562	0	9	23	0	12	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.9%		ICU Level of Service D	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	2038	10	34	1565	37	9	8	27	37	20	122
Future Volume (vph)	39	2038	10	34	1565	37	9	8	27	37	20	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	30.0		20.0	48.0		0.0	15.0		0.0	13.5		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98	0.98		0.99	0.97	
Frt		0.999			0.997			0.884			0.871	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1694	3423	0	1631	3285	0	1750	1635	0	1716	1562	0
Flt Permitted	0.116			0.062			0.639			0.734		
Satd. Flow (perm)	207	3423	0	106	3285	0	1155	1635	0	1312	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5			10			30	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.4			170.8			56.4			254.0	
Travel Time (s)		16.6			12.3			4.1			18.3	
Confl. Peds. (#/hr)	15		12	12		15	20		10	10		20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	7%	7%	7%	2%	2%	2%	4%	4%	4%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	39	2038	10	34	1565	37	9	8	27	37	20	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	2048	0	34	1602	0	9	35	0	37	142	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



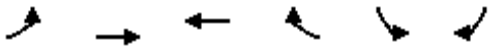
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		30.0	30.0		30.0	30.0	
Total Split (s)	60.0	60.0		60.0	60.0		30.0	30.0		30.0	30.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	54.0	54.0		54.0	54.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	9	9		9	9		10	10		10	10	
Act Effct Green (s)	64.5	64.5		64.5	64.5		13.5	13.5		13.5	13.5	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.15	0.15		0.15	0.15	
v/c Ratio	0.26	0.84		0.45	0.68		0.05	0.14		0.19	0.55	
Control Delay	12.4	14.9		33.6	10.2		29.2	24.3		32.7	34.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.4	14.9		33.6	10.2		29.2	24.3		32.7	34.2	
LOS	B	B		C	B		C	C		C	C	
Approach Delay		14.9			10.7			25.3			33.9	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	1.8	101.3		1.9	61.8		1.4	3.9		5.8	18.4	
Queue Length 95th (m)	10.9	#238.0		#19.7	134.8		4.7	10.2		12.2	30.8	
Internal Link Dist (m)		206.4			146.8			32.4			230.0	
Turn Bay Length (m)	30.0			48.0			15.0			13.5		
Base Capacity (vph)	148	2451		75	2354		308	443		349	438	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.26	0.84		0.45	0.68		0.03	0.08		0.11	0.32	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 125: Shaw Drive/Shaw Dr & Lakeshore Rd E

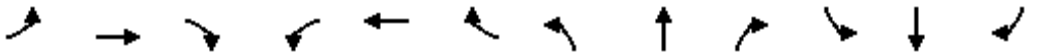


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	2068	1386	231	144	18
Future Volume (vph)	6	2068	1386	231	144	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.5	3.5
Storage Length (m)	0.0			6.0	0.0	0.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.979			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3461	3291	0	1700	1521
Flt Permitted					0.950	
Satd. Flow (perm)	0	3461	3291	0	1700	1521
Link Speed (k/h)		50	50		50	
Link Distance (m)		46.7	230.4		284.7	
Travel Time (s)		3.4	16.6		20.5	
Confl. Peds. (#/hr)						10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%
Adj. Flow (vph)	6	2068	1386	231	144	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2074	1617	0	144	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.3	3.3		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.04	1.03	1.03	1.04	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

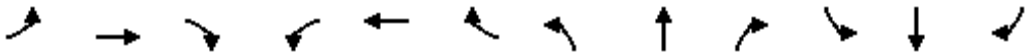
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.5%		ICU Level of Service D	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1855	4	25	1314	4	56
Future Volume (vph)	1855	4	25	1314	4	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.3	3.3	3.4	3.5	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.850
Flt Protected				0.999	0.950	
Satd. Flow (prot)	3256	0	0	3190	1767	1581
Flt Permitted				0.999	0.950	
Satd. Flow (perm)	3256	0	0	3190	1767	1581
Link Speed (k/h)	50			50	50	
Link Distance (m)	183.0			46.7	196.3	
Travel Time (s)	13.2			3.4	14.1	
Confl. Peds. (#/hr)					3	13
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	5%	5%	1%	1%
Parking (#/hr)	0			0		
Adj. Flow (vph)	1855	4	25	1314	4	56
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1859	0	0	1339	4	56
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.10	1.04	1.04	1.10	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1695	9	19	1285	18	48	3	20	113	6	11
Future Volume (vph)	10	1695	9	19	1285	18	48	3	20	113	6	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	17.3		0.0	15.5		0.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98	0.97		0.98	0.98	
Frt		0.999			0.998			0.870			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	3283	0	1678	3216	0	1785	1620	0	1733	1650	0
Flt Permitted	0.189			0.111			0.746			0.742		
Satd. Flow (perm)	340	3283	0	196	3216	0	1374	1620	0	1323	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			20			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		225.3			183.0			206.5			174.8	
Travel Time (s)		16.2			13.2			14.9			12.6	
Confl. Peds. (#/hr)	4		10	10		4	12		14	14		12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	0%	0%	0%	3%	3%	3%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	10	1695	9	19	1285	18	48	3	20	113	6	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	1704	0	19	1303	0	48	23	0	113	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	



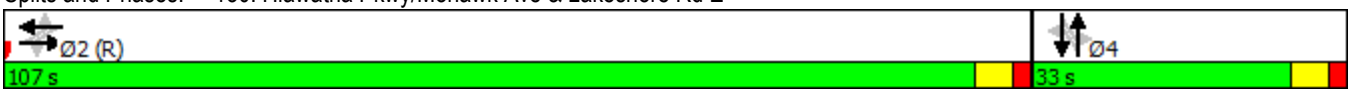
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		31.0	31.0		31.0	31.0	
Total Split (s)	107.0	107.0		107.0	107.0		33.0	33.0		33.0	33.0	
Total Split (%)	76.4%	76.4%		76.4%	76.4%		23.6%	23.6%		23.6%	23.6%	
Maximum Green (s)	101.0	101.0		101.0	101.0		27.0	27.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	5	5		5	5		9	9		9	9	
Act Effct Green (s)	110.7	110.7		110.7	110.7		17.3	17.3		17.3	17.3	
Actuated g/C Ratio	0.79	0.79		0.79	0.79		0.12	0.12		0.12	0.12	
v/c Ratio	0.04	0.66		0.12	0.51		0.28	0.11		0.69	0.08	
Control Delay	6.6	8.1		6.6	6.5		57.7	22.3		79.0	30.1	
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.6	8.2		6.6	6.5		57.7	22.3		79.0	30.1	
LOS	A	A		A	A		E	C		E	C	
Approach Delay		8.2			6.5			46.2			72.6	
Approach LOS		A			A			D			E	
Queue Length 50th (m)	0.8	76.7		1.0	56.4		12.3	0.7		30.5	1.5	
Queue Length 95th (m)	m1.2	91.3		4.4	90.3		23.5	8.7		48.6	8.3	
Internal Link Dist (m)		201.3			159.0			182.5			150.8	
Turn Bay Length (m)	17.3			15.5								
Base Capacity (vph)	268	2595		155	2542		264	328		255	327	
Starvation Cap Reductn	0	192		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.71		0.12	0.51		0.18	0.07		0.44	0.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 80	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 130: Hiawatha Pkwy/Mohawk Ave & Lakeshore Rd E



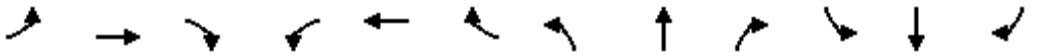
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1908	44	0	1365	45	0
Future Volume (vph)	1908	44	0	1365	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.3	3.3	3.4	3.5	3.5
Storage Length (m)		0.0	13.4		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00					
Frt	0.997					
Flt Protected					0.950	
Satd. Flow (prot)	3150	0	1685	3076	1684	1773
Flt Permitted					0.950	
Satd. Flow (perm)	3150	0	1685	3076	1684	1773
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4					
Link Speed (k/h)	50			50	50	
Link Distance (m)	247.1			225.3	183.6	
Travel Time (s)	17.8			16.2	13.2	
Confl. Peds. (#/hr)		11	11			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	6%	9%	9%	6%	6%
Parking (#/hr)	0			0		
Adj. Flow (vph)	1908	44	0	1365	45	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1952	0	0	1365	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.10	1.04	1.04	1.10	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		2	2	2	2
Detector Template						
Leading Detector (m)	15.2		15.2	15.2	15.2	15.2
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8		1.8	1.8	1.8	1.8
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	13.4		13.4	13.4	13.4	13.4
Detector 2 Size(m)	1.8		1.8	1.8	1.8	1.8
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Channel						
Detector 2 Extend (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases			2			4
Detector Phase	2		2	2	4	4
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	8.0
Minimum Split (s)	24.0		24.0	24.0	30.0	30.0
Total Split (s)	106.0		106.0	106.0	34.0	34.0
Total Split (%)	75.7%		75.7%	75.7%	24.3%	24.3%
Maximum Green (s)	100.0		100.0	100.0	28.0	28.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		C-Max	C-Max	Min	Min
Walk Time (s)	8.0		8.0	8.0	10.0	10.0
Flash Dont Walk (s)	10.0		10.0	10.0	14.0	14.0
Pedestrian Calls (#/hr)	6		6	6	2	2
Act Effct Green (s)	116.1			116.1	11.9	
Actuated g/C Ratio	0.83			0.83	0.08	
v/c Ratio	0.75			0.54	0.31	
Control Delay	2.6			1.8	63.5	
Queue Delay	0.0			0.0	0.0	
Total Delay	2.7			1.8	63.5	
LOS	A			A	E	
Approach Delay	2.7			1.8	63.5	
Approach LOS	A			A	E	
Queue Length 50th (m)	10.3			8.2	12.2	
Queue Length 95th (m)	18.7			9.9	22.4	
Internal Link Dist (m)	223.1			201.3	159.6	
Turn Bay Length (m)						
Base Capacity (vph)	2612			2550	336	
Starvation Cap Reductn	21			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.75			0.54	0.13	

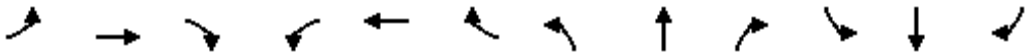
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 17 (12%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 3.1	Intersection LOS: A
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 133: Cumberland Dr. & Lakeshore Rd E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	1857	16	2	1444	16	21	0	8	7	0	11
Future Volume (vph)	21	1857	16	2	1444	16	21	0	8	7	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.95			0.95	
Frt		0.999			0.998			0.963			0.917	
Flt Protected		0.999						0.965			0.981	
Satd. Flow (prot)	0	3341	0	0	3187	0	0	1777	0	0	1562	0
Flt Permitted		0.913			0.953			0.775			0.868	
Satd. Flow (perm)	0	3053	0	0	3037	0	0	1361	0	0	1380	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			31			31	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		240.4			247.1			213.9			177.8	
Travel Time (s)		17.3			17.8			15.4			12.8	
Confl. Peds. (#/hr)	6		4	4		6	31		2	2		31
Confl. Bikes (#/hr)	1		3	3		1			1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	0%	11%	0%	5%	0%	0%	0%	0%	0%	0%	9%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	21	1857	16	2	1444	16	21	0	8	7	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1894	0	0	1462	0	0	29	0	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												

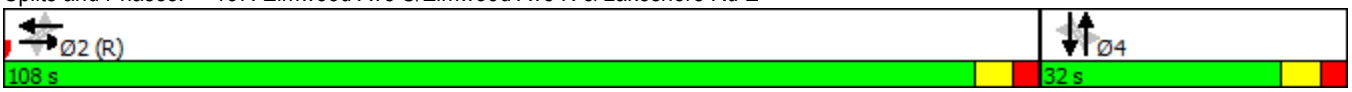


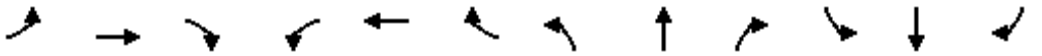
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		27.0	27.0		27.0	27.0	
Total Split (s)	108.0	108.0		108.0	108.0		32.0	32.0		32.0	32.0	
Total Split (%)	77.1%	77.1%		77.1%	77.1%		22.9%	22.9%		22.9%	22.9%	
Maximum Green (s)	101.0	101.0		101.0	101.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	2.0	2.0		2.0	2.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	3	3		3	3		11	11		11	11	
Act Effct Green (s)		117.6			117.6			12.8			12.8	
Actuated g/C Ratio		0.84			0.84			0.09			0.09	
v/c Ratio		0.74			0.57			0.19			0.12	
Control Delay		6.2			4.6			18.4			9.3	
Queue Delay		0.4			0.0			0.0			0.0	
Total Delay		6.5			4.6			18.4			9.3	
LOS		A			A			B			A	
Approach Delay		6.5			4.6			18.4			9.3	
Approach LOS		A			A			B			A	
Queue Length 50th (m)		38.2			44.2			0.0			0.0	
Queue Length 95th (m)		33.1			59.1			8.9			4.2	
Internal Link Dist (m)		216.4			223.1			189.9			153.8	
Turn Bay Length (m)												
Base Capacity (vph)		2565			2551			268			271	
Starvation Cap Reductn		221			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.81			0.57			0.11			0.07	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 3 (2%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	

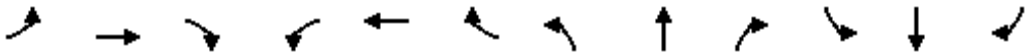
Intersection Signal Delay: 5.8	Intersection LOS: A
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 137: Elmwood Ave S/Elmwood Ave N & Lakeshore Rd E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	1623	14	183	1195	222	17	114	69	203	168	176
Future Volume (vph)	229	1623	14	183	1195	222	17	114	69	203	168	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	24.5		24.5	28.8		26.1	26.1		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.98	0.98		0.98		0.96
Frt		0.999			0.976			0.943				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1631	3525	0	1616	3278	0	1539	1741	0	1750	1847	1389
Flt Permitted	0.094			0.054			0.564			0.533		
Satd. Flow (perm)	161	3525	0	92	3278	0	896	1741	0	962	1847	1338
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			23			21				44
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		79.5			240.4			184.5			96.2	
Travel Time (s)		5.7			17.3			13.3			6.9	
Confl. Peds. (#/hr)	25		8	8		25	18		20	20		18
Confl. Bikes (#/hr)	2		3	3		2			1	1		
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 (%)	7%	0%	0%	8%	4%	6%	16%	4%	0%	2%	4%	15%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	229	1623	14	183	1195	222	17	114	69	203	168	176
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1637	0	183	1417	0	17	183	0	203	168	176
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)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	2
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	13.4
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8



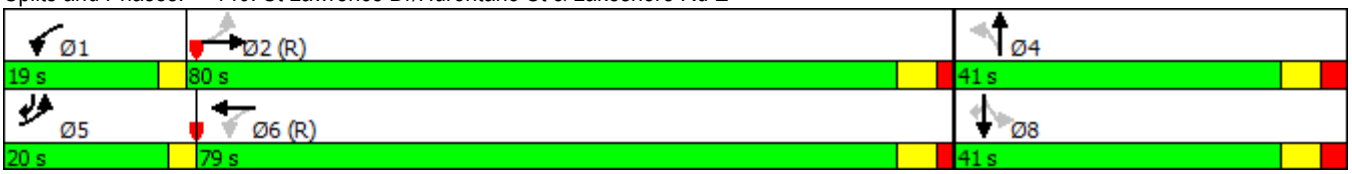
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		4	4		8	8	5
Switch Phase												
Minimum Initial (s)	5.0	8.0		4.0	8.0		8.0	8.0		8.0	8.0	5.0
Minimum Split (s)	8.0	36.0		8.0	36.0		37.0	37.0		37.0	37.0	8.0
Total Split (s)	20.0	80.0		19.0	79.0		41.0	41.0		41.0	41.0	20.0
Total Split (%)	14.3%	57.1%		13.6%	56.4%		29.3%	29.3%		29.3%	29.3%	14.3%
Maximum Green (s)	17.0	74.0		16.0	73.0		34.0	34.0		34.0	34.0	17.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	3.0
All-Red Time (s)	0.0	2.0		0.0	2.0		3.0	3.0		3.0	3.0	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		7.0	7.0		7.0	7.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Min	Min		Min	Min	None
Walk Time (s)		12.0			12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		18.0			18.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)		8			25		20	20		18	18	
Act Effct Green (s)	96.6	78.2		94.8	77.4		31.3	31.3		31.3	31.3	50.6
Actuated g/C Ratio	0.69	0.56		0.68	0.55		0.22	0.22		0.22	0.22	0.36
v/c Ratio	0.85	0.83		0.84	0.78		0.09	0.45		0.94	0.41	0.34
Control Delay	44.8	19.0		69.2	23.7		42.6	44.5		101.7	48.9	23.3
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	0.0
Total Delay	44.8	19.0		69.2	23.9		42.6	44.5		101.7	48.9	23.3
LOS	D	B		E	C		D	D		F	D	C
Approach Delay		22.2			29.1			44.3			60.3	
Approach LOS		C			C			D			E	
Queue Length 50th (m)	33.7	177.4		39.1	125.5		3.7	37.9		54.3	39.0	23.6
Queue Length 95th (m)	m35.1	m164.1		#72.4	165.6		10.3	60.8		#99.5	60.5	41.5
Internal Link Dist (m)		55.5			216.4			160.5			72.2	
Turn Bay Length (m)	24.5			28.8			26.1			30.0		
Base Capacity (vph)	290	1970		237	1821		217	438		233	448	533
Starvation Cap Reductn	0	0		0	39		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.79	0.83		0.77	0.80		0.08	0.42		0.87	0.38	0.33

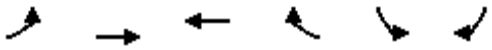
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 95	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 30.8	Intersection LOS: C
Intersection Capacity Utilization 104.5%	ICU Level of Service G
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

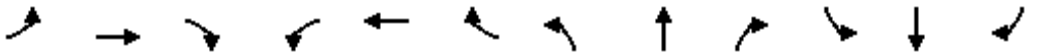
Splits and Phases: 140: St Lawrence Dr/Hurontario St & Lakeshore Rd E





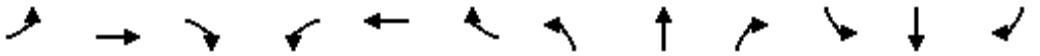
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	58	1861	1358	39	3	17
Future Volume (vph)	58	1861	1358	39	3	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.5	3.5
Storage Length (m)	30.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.996			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1631	3353	3298	0	1785	1597
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1631	3353	3298	0	1785	1597
Link Speed (k/h)		50	50		50	
Link Distance (m)		97.3	79.5		90.2	
Travel Time (s)		7.0	5.7		6.5	
Confl. Peds. (#/hr)	38			38	4	3
Confl. Bikes (#/hr)	4			4		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	0%	5%	62%	0%	0%
Parking (#/hr)		0				
Adj. Flow (vph)	58	1861	1358	39	3	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	1861	1397	0	3	17
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.3	3.3		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.04	1.10	1.03	1.04	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.4%		ICU Level of Service B	
Analysis Period (min) 15			

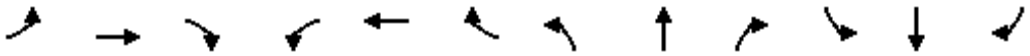


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	2010	5	4	1266	22	2	0	9	4	0	30
Future Volume (vph)	138	2010	5	4	1266	22	2	0	9	4	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.890			0.850	
Flt Protected		0.997						0.991		0.950		
Satd. Flow (prot)	0	3343	0	0	3187	0	0	1657	0	1785	1507	0
Flt Permitted		0.997						0.991		0.950		
Satd. Flow (perm)	0	3343	0	0	3187	0	0	1657	0	1785	1507	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		132.7			97.3			108.2			83.0	
Travel Time (s)		9.6			7.0			7.8			6.0	
Confl. Peds. (#/hr)	22		10	10		22	7		2	2		7
Confl. Bikes (#/hr)	4		2	2		4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	6%
Parking (#/hr)		0			0							
Adj. Flow (vph)	138	2010	5	4	1266	22	2	0	9	4	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2153	0	0	1292	0	0	11	0	4	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	2478	14	3	1232	27	41	44	5	16	5	158
Future Volume (vph)	25	2478	14	3	1232	27	41	44	5	16	5	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		25.0	0.0		25.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.99	0.99		0.93	0.97	
Frt		0.999			0.997			0.985			0.855	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	3350	0	0	3131	0	1785	1876	0	1137	1452	0
Flt Permitted		0.922			0.946		0.353			0.725		
Satd. Flow (perm)	0	3088	0	0	2961	0	656	1876	0	809	1452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5			3			121	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		105.6			132.7			110.4			118.4	
Travel Time (s)		7.6			9.6			7.9			8.5	
Confl. Peds. (#/hr)	19					19	8		36	36		8
Confl. Bikes (#/hr)	5		2	2		5						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	16%	6%	33%	0%	0%	0%	57%	12%	10%
Parking (#/hr)		0			0							
Adj. Flow (vph)	25	2478	14	3	1232	27	41	44	5	16	5	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2517	0	0	1262	0	41	49	0	16	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	



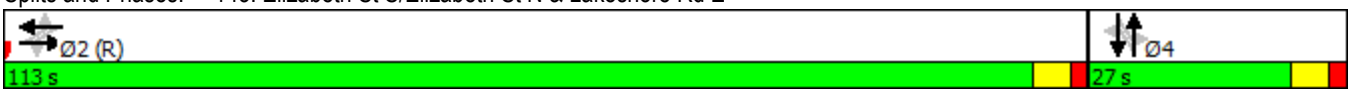
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		27.0	27.0		27.0	27.0	
Total Split (s)	113.0	113.0		113.0	113.0		27.0	27.0		27.0	27.0	
Total Split (%)	80.7%	80.7%		80.7%	80.7%		19.3%	19.3%		19.3%	19.3%	
Maximum Green (s)	107.0	107.0		107.0	107.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	6	6		6	6		15	15		15	15	
Act Effct Green (s)		113.8			113.8		14.2	14.2		14.2	14.2	
Actuated g/C Ratio		0.81			0.81		0.10	0.10		0.10	0.10	
v/c Ratio		1.00			0.52		0.62	0.25		0.20	0.64	
Control Delay		13.1			7.0		95.2	55.1		59.9	28.8	
Queue Delay		37.0			0.4		49.0	0.0		0.0	19.4	
Total Delay		50.0			7.4		144.2	55.1		59.9	48.2	
LOS		D			A		F	E		E	D	
Approach Delay		50.0			7.4			95.7			49.3	
Approach LOS		D			A			F			D	
Queue Length 50th (m)		26.3			56.2		11.3	12.2		4.2	11.2	
Queue Length 95th (m)		m1.2			79.1		23.3	23.4		11.1	32.8	
Internal Link Dist (m)		81.6			108.7			86.4			94.4	
Turn Bay Length (m)												
Base Capacity (vph)		2510			2407		98	283		121	320	
Starvation Cap Reductn		234			0		0	0		0	0	
Spillback Cap Reductn		0			555		53	0		0	142	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.11			0.68		0.91	0.17		0.13	0.92	

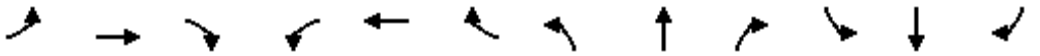
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 104 (74%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 150	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 37.7	Intersection LOS: D
Intersection Capacity Utilization 122.4%	ICU Level of Service H
Analysis Period (min) 15	

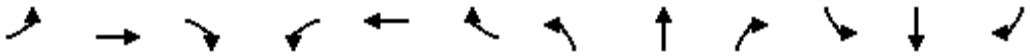
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 143: Elizabeth St S/Elizabeth St N & Lakeshore Rd E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2561	177	37	1455	41	44	62	19	13	40	316
Future Volume (vph)	0	2561	177	37	1455	41	44	62	19	13	40	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	0.0		0.0	0.0		0.0	8.3		0.0	0.0		25.0
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.99	1.00		1.00	0.97	
Frt		0.990			0.996			0.965			0.867	
Flt Protected					0.999		0.950			0.950		
Satd. Flow (prot)	0	3186	0	0	3059	0	1767	1828	0	1700	1545	0
Flt Permitted					0.576		0.211			0.704		
Satd. Flow (perm)	0	3186	0	0	1763	0	390	1828	0	1255	1545	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			6			9			84	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		376.7			105.6			148.7			96.1	
Travel Time (s)		27.1			7.6			10.7			6.9	
Confl. Peds. (#/hr)	3		2	2		3	8		2	2		8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	9%	9%	9%	1%	1%	1%	5%	5%	5%
Bus Blockages (#/hr)	0	0	7	0	0	7	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	0	2561	177	37	1455	41	44	62	19	13	40	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2738	0	0	1533	0	44	81	0	13	356	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			-10.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)		15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)		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	
Detector 1 Size(m)		1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type		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	
Detector 1 Queue (s)		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	
Detector 2 Position(m)		13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)		1.8		1.8	1.8		1.8	1.8		1.8	1.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases				2			4			4		
Detector Phase		2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)		8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)		27.0		27.0	27.0		26.0	26.0		26.0	26.0	
Total Split (s)		114.0		114.0	114.0		26.0	26.0		26.0	26.0	
Total Split (%)		81.4%		81.4%	81.4%		18.6%	18.6%		18.6%	18.6%	
Maximum Green (s)		106.0		106.0	106.0		19.0	19.0		19.0	19.0	
Yellow Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)		4.0		4.0	4.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.0			8.0		7.0	7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode		C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		2		2	2		3	3		3	3	
Act Effct Green (s)		106.0			106.0		19.0	19.0		19.0	19.0	
Actuated g/C Ratio		0.76			0.76		0.14	0.14		0.14	0.14	
v/c Ratio		1.13			1.15		0.85	0.32		0.08	1.26	
Control Delay		77.9			100.5		144.7	52.3		54.3	179.7	
Queue Delay		0.1			0.0		0.0	0.0		0.0	0.0	
Total Delay		78.0			100.5		144.7	52.3		54.3	179.7	
LOS		E			F		F	D		D	F	
Approach Delay		78.0			100.5			84.8			175.3	
Approach LOS		E			F			F			F	
Queue Length 50th (m)		~463.7			~257.7		12.0	18.2		3.2	~102.6	
Queue Length 95th (m)		#500.5			#302.1		#35.9	34.3		9.8	#164.4	
Internal Link Dist (m)		352.7			81.6			124.7			72.1	
Turn Bay Length (m)							8.3					
Base Capacity (vph)		2415			1336		52	255		170	282	
Starvation Cap Reductn		19			0		0	0		0	0	
Spillback Cap Reductn		74			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.17			1.15		0.85	0.32		0.08	1.26	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 91 (65%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 150	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 93.0	Intersection LOS: F
Intersection Capacity Utilization 123.8%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 144: Stavebank Rd S & Lakeshore Rd E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2428	11	17	1347	2	13	4	16	56	3	26
Future Volume (vph)	15	2428	11	17	1347	2	13	4	16	56	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	8.6		0.0	10.2		0.0	18.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00			1.00		0.98	0.98		0.99	0.97	
Frt		0.999						0.880			0.866	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3522	0	1745	3361	0	1342	1657	0	1767	1581	0
Flt Permitted	0.184			0.035			0.738			0.744		
Satd. Flow (perm)	334	3522	0	64	3361	0	1026	1657	0	1367	1581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						13			26	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		183.2			376.7			125.4			106.5	
Travel Time (s)		13.2			27.1			9.0			9.6	
Confl. Peds. (#/hr)	32		6	6		32	9		7	7		9
Confl. Bikes (#/hr)	3		2	2		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%	20%	0%	5%	0%	33%	0%	0%	1%	25%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	15	2428	11	17	1347	2	13	4	16	56	3	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2439	0	17	1349	0	13	20	0	56	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		29.0	29.0		29.0	29.0	
Total Split (s)	111.0	111.0		111.0	111.0		29.0	29.0		29.0	29.0	
Total Split (%)	79.3%	79.3%		79.3%	79.3%		20.7%	20.7%		20.7%	20.7%	
Maximum Green (s)	105.0	105.0		105.0	105.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	13	13		13	13		5	5		5	5	
Act Effct Green (s)	115.1	115.1		115.1	115.1		12.9	12.9		12.9	12.9	
Actuated g/C Ratio	0.82	0.82		0.82	0.82		0.09	0.09		0.09	0.09	
v/c Ratio	0.05	0.84		0.33	0.49		0.14	0.12		0.45	0.17	
Control Delay	5.5	14.6		10.5	5.0		58.3	32.0		69.6	22.6	
Queue Delay	0.0	46.7		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay	5.5	61.3		10.5	5.2		58.3	32.0		69.6	22.6	
LOS	A	E		B	A		E	C		E	C	
Approach Delay		61.0			5.2			42.4			53.5	
Approach LOS		E			A			D			D	
Queue Length 50th (m)	0.8	222.4		1.0	51.3		3.4	1.8		15.2	0.8	
Queue Length 95th (m)	m1.6	m259.6		m1.3	m67.8		9.5	9.1		26.9	9.9	
Internal Link Dist (m)		159.2			352.7			101.4			82.5	
Turn Bay Length (m)	8.6			10.2			18.0			40.0		
Base Capacity (vph)	274	2896		52	2764		168	283		224	281	
Starvation Cap Reductn	0	788		0	0		0	0		0	0	
Spillback Cap Reductn	0	431		0	566		0	0		0	6	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	1.16		0.33	0.61		0.08	0.07		0.25	0.11	

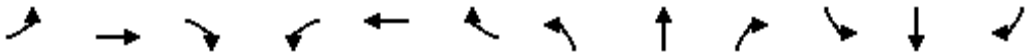
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 64 (46%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 110	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 41.3	Intersection LOS: D
Intersection Capacity Utilization 89.7%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 146: John St S/John St N & Lakeshore Rd W/Lakeshore Rd E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	1713	27	51	933	298	51	99	60	691	212	48
Future Volume (vph)	199	1713	27	51	933	298	51	99	60	691	212	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	28.8		0.0	53.3		28.9	15.0		0.0	58.1		13.2
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.97	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00					0.98	0.99		0.98	0.99	
Frt		0.998			0.964			0.943			0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1694	3316	0	1601	2966	0	1733	1740	0	3330	1782	0
Flt Permitted	0.069			0.073			0.599			0.950		
Satd. Flow (perm)	123	3316	0	123	2966	0	1070	1740	0	3252	1782	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			35			7			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		297.8			183.2			192.4			199.9	
Travel Time (s)		21.4			13.2			13.9			14.4	
Confl. Peds. (#/hr)			5	5			21		12	12		21
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	9%	9%	9%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	199	1713	27	51	933	298	51	99	60	691	212	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	1740	0	51	1231	0	51	159	0	691	260	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Prot	NA	
Protected Phases	5	2			6			4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		6	6		4	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		8.0	8.0		5.0	8.0	
Minimum Split (s)	8.0	25.0		25.0	25.0		36.0	36.0		10.0	36.0	
Total Split (s)	14.0	72.0		58.0	58.0		36.0	36.0		32.0	68.0	
Total Split (%)	10.0%	51.4%		41.4%	41.4%		25.7%	25.7%		22.9%	48.6%	
Maximum Green (s)	11.0	66.0		52.0	52.0		29.0	29.0		27.0	61.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0		7.0	7.0		5.0	7.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		8.0		8.0	8.0		12.0	12.0			12.0	
Flash Dont Walk (s)		11.0		11.0	11.0		17.0	17.0			17.0	
Pedestrian Calls (#/hr)		5		0	0		12	12			21	
Act Effct Green (s)	77.7	74.7		54.7	54.7		20.3	20.3		27.0	52.3	
Actuated g/C Ratio	0.56	0.53		0.39	0.39		0.14	0.14		0.19	0.37	
v/c Ratio	0.77	0.98		1.09	1.04		0.33	0.62		1.08	0.39	
Control Delay	53.0	50.0		193.1	81.3		56.6	62.7		110.2	31.5	
Queue Delay	0.0	0.6		0.0	22.2		0.0	0.1		18.0	0.0	
Total Delay	53.0	50.6		193.1	103.5		56.6	62.7		128.2	31.5	
LOS	D	D		F	F		E	E		F	C	
Approach Delay		50.9			107.1			61.2			101.8	
Approach LOS		D			F			E			F	
Queue Length 50th (m)	36.3	225.3		~16.0	~200.4		13.2	41.0		~109.5	52.0	
Queue Length 95th (m)	#96.6	#325.9		#45.6	#246.7		24.5	59.2		#147.4	66.5	
Internal Link Dist (m)		273.8			159.2			168.4			175.9	
Turn Bay Length (m)	28.8			53.3			15.0			58.1		
Base Capacity (vph)	259	1770		47	1179		221	365		642	782	
Starvation Cap Reductn	0	0		0	81		0	0		0	0	
Spillback Cap Reductn	0	6		0	0		0	7		382	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.77	0.99		1.09	1.12		0.23	0.44		2.66	0.33	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 150	

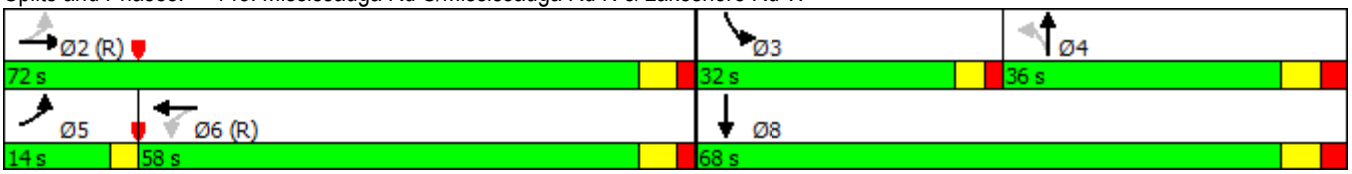
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 78.9	Intersection LOS: E
Intersection Capacity Utilization 108.8%	ICU Level of Service G
Analysis Period (min) 15	

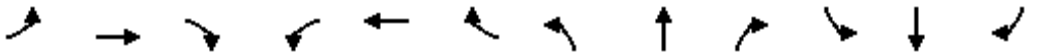
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

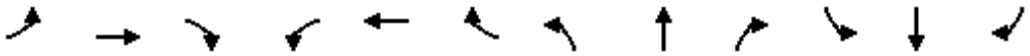
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 148: Mississauga Rd S/Mississauga Rd N & Lakeshore Rd W





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	2226	40	32	962	81	53	32	51	15	2	7
Future Volume (vph)	3	2226	40	32	962	81	53	32	51	15	2	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.5	3.5	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	31.2		0.0	80.0		15.2	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00			0.99		0.99	0.99		1.00	0.98	
Frt		0.997			0.988			0.908			0.883	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3517	0	1750	3320	0	1750	1659	0	1700	1625	0
Flt Permitted	0.258			0.054			0.752			0.703		
Satd. Flow (perm)	468	3517	0	99	3320	0	1373	1659	0	1256	1625	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			17			8			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		215.5			297.8			122.0			97.1	
Travel Time (s)		15.5			21.4			8.8			7.0	
Confl. Peds. (#/hr)	28					28	7		1	1		7
Confl. Bikes (#/hr)	1		1	1		1						
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%	2%	2%	4%	8%	2%	2%	2%	5%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	3	2226	40	32	962	81	53	32	51	15	2	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	2266	0	32	1043	0	53	83	0	15	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.01	1.01	1.03	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		1	2		1	2		2	2	
Detector Template				Left			Left	Thru			Thru	
Leading Detector (m)	15.2	15.2		2.0	15.2		2.0	10.0		15.2	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		2.0	1.8		2.0	0.6		1.8	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4			13.4			9.4		13.4	9.4	
Detector 2 Size(m)	1.8	1.8			1.8			0.6		1.8	0.6	



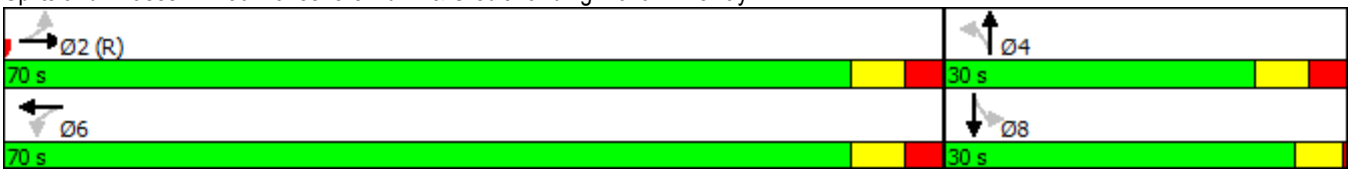
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		27.0	27.0	
Total Split (s)	70.0	70.0		70.0	70.0		30.0	30.0		30.0	30.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	63.0	63.0		63.0	63.0		23.0	23.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.5	3.5	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	9	9		9	9		3	3		3	3	
Act Effct Green (s)	73.9	73.9		73.9	73.9		12.1	12.1		15.1	15.1	
Actuated g/C Ratio	0.74	0.74		0.74	0.74		0.12	0.12		0.15	0.15	
v/c Ratio	0.01	0.87		0.44	0.42		0.32	0.40		0.08	0.04	
Control Delay	5.7	16.1		32.5	6.2		43.0	40.4		33.9	20.1	
Queue Delay	0.0	3.2		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.7	19.3		32.5	6.2		43.0	40.4		33.9	20.1	
LOS	A	B		C	A		D	D		C	C	
Approach Delay		19.3			7.0			41.4			28.7	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	0.1	126.9		1.8	29.6		9.8	13.9		2.6	0.3	
Queue Length 95th (m)	1.2	#289.8		#19.4	65.8		18.5	24.4		7.2	4.1	
Internal Link Dist (m)		191.5			273.8			98.0			73.1	
Turn Bay Length (m)	31.2			80.0			20.0					
Base Capacity (vph)	345	2598		73	2456		315	387		326	427	
Starvation Cap Reductn	0	243		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.96		0.44	0.42		0.17	0.21		0.05	0.02	

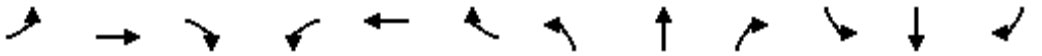
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 100	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

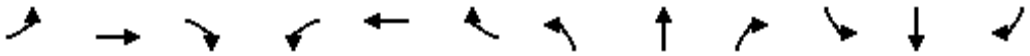
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 150: Lakeshore Rd W & Credit Landing Plaza Driveway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1744	92	8	838	3	37	8	3	43	4	9
Future Volume (vph)	3	1744	92	8	838	3	37	8	3	43	4	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.5	3.5	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	25.0		0.0	25.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00		1.00				0.99	
Frt		0.992			0.999			0.959			0.896	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1694	3397	0	1750	3265	0	1750	1767	0	1668	1582	0
Flt Permitted	0.298			0.112			0.749			0.750		
Satd. Flow (perm)	531	3397	0	206	3265	0	1378	1767	0	1317	1582	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			1			3			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		207.0			215.5			209.6			141.2	
Travel Time (s)		14.9			15.5			15.1			10.2	
Confl. Peds. (#/hr)	2		2	2		2	1					1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	2%	2%	8%	8%	2%	2%	2%	7%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	3	1744	92	8	838	3	37	8	3	43	4	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1836	0	8	841	0	37	11	0	43	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.01	1.01	1.03	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



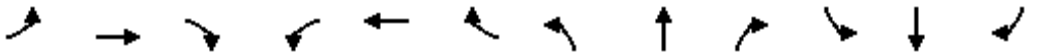
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	35.6	35.6		35.6	35.6		16.4	16.4		16.4	16.4	
Actuated g/C Ratio	0.59	0.59		0.59	0.59		0.27	0.27		0.27	0.27	
v/c Ratio	0.01	0.91		0.07	0.43		0.10	0.02		0.12	0.03	
Control Delay	5.0	19.2		6.6	7.4		17.5	14.6		17.8	11.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.0	19.2		6.6	7.4		17.5	14.6		17.8	11.6	
LOS	A	B		A	A		B	B		B	B	
Approach Delay		19.1			7.4			16.9			16.4	
Approach LOS		B			A			B			B	
Queue Length 50th (m)	0.1	79.2		0.3	22.7		3.1	0.7		3.6	0.3	
Queue Length 95th (m)	0.9	#139.7		1.9	32.7		9.0	3.7		10.0	3.6	
Internal Link Dist (m)		183.0			191.5			185.6			117.2	
Turn Bay Length (m)	25.0			25.0			20.0			20.0		
Base Capacity (vph)	318	2044		123	1959		375	484		359	437	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.90		0.07	0.43		0.10	0.02		0.12	0.03	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

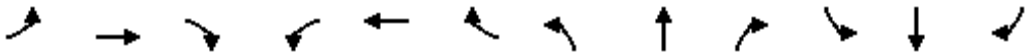
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 71.1%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 151: Benson Ave & Lakeshore Rd W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1674	27	7	889	50	21	5	4	105	5	14
Future Volume (vph)	12	1674	27	7	889	50	21	5	4	105	5	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	0.0		0.0	0.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.97			0.97	
Frt		0.998			0.992			0.982			0.985	
Flt Protected								0.966			0.959	
Satd. Flow (prot)	0	3385	0	0	3235	0	0	1710	0	0	1786	0
Flt Permitted		0.945			0.936			0.811			0.738	
Satd. Flow (perm)	0	3198	0	0	3028	0	0	1407	0	0	1340	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			11			4			4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		364.0			207.0			311.5			310.5	
Travel Time (s)		26.2			14.9			22.4			22.4	
Confl. Peds. (#/hr)	6		8	8		6	19		14	14		19
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	8%	8%	8%	6%	6%	6%	1%	1%	1%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	12	1674	27	7	889	50	21	5	4	105	5	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1713	0	0	946	0	0	30	0	0	124	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	

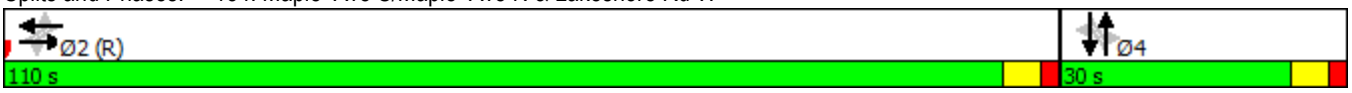


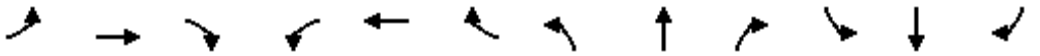
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0	
Total Split (s)	110.0	110.0		110.0	110.0		30.0	30.0		30.0	30.0	
Total Split (%)	78.6%	78.6%		78.6%	78.6%		21.4%	21.4%		21.4%	21.4%	
Maximum Green (s)	104.0	104.0		104.0	104.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	5	5		5	5		11	11		11	11	
Act Effct Green (s)		110.4			110.4			17.6			17.6	
Actuated g/C Ratio		0.79			0.79			0.13			0.13	
v/c Ratio		0.68			0.40			0.17			0.73	
Control Delay		4.2			5.4			48.7			79.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.2			5.4			48.7			79.3	
LOS		A			A			D			E	
Approach Delay		4.2			5.4			48.7			79.3	
Approach LOS		A			A			D			E	
Queue Length 50th (m)		18.3			35.8			6.5			32.4	
Queue Length 95th (m)		19.7			55.5			15.6			51.9	
Internal Link Dist (m)		340.0			183.0			287.5			286.5	
Turn Bay Length (m)												
Base Capacity (vph)		2523			2391			244			233	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.68			0.40			0.12			0.53	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 133 (95%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

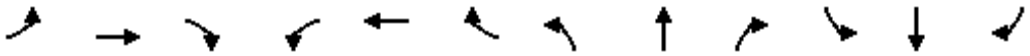
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 8.4	Intersection LOS: A
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 154: Maple Ave S/Maple Ave N & Lakeshore Rd W





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1665	3	0	929	28	0	0	6	94	6	14
Future Volume (vph)	2	1665	3	0	929	28	0	0	6	94	6	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.5	3.5
Storage Length (m)	30.0		0.0	77.2		0.0	6.0		0.0	6.7		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00						0.99	
Frt					0.996			0.850			0.895	
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1646	3330	0	1749	3346	0	1879	1633	0	1733	1615	0
Flt Permitted	0.287									0.754		
Satd. Flow (perm)	497	3330	0	1749	3346	0	1879	1633	0	1375	1615	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5			46			14	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		270.9			364.0			85.8			137.2	
Travel Time (s)		19.5			26.2			6.2			9.9	
Confl. Peds. (#/hr)	2		7	7		2	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 (%)	6%	6%	6%	5%	5%	5%	0%	0%	0%	3%	3%	3%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	2	1665	3	0	929	28	0	0	6	94	6	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	1668	0	0	957	0	0	6	0	94	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



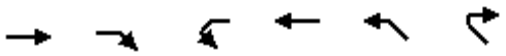
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		30.0	30.0		30.0	30.0	
Total Split (s)	107.0	107.0		107.0	107.0		33.0	33.0		33.0	33.0	
Total Split (%)	76.4%	76.4%		76.4%	76.4%		23.6%	23.6%		23.6%	23.6%	
Maximum Green (s)	100.0	100.0		100.0	100.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	3	3		3	3		1	1		1	1	
Act Effct Green (s)	110.7	110.7			110.7			15.3		15.3	15.3	
Actuated g/C Ratio	0.79	0.79			0.79			0.11		0.11	0.11	
v/c Ratio	0.01	0.63			0.36			0.03		0.63	0.11	
Control Delay	4.5	8.1			4.8			0.2		76.9	29.2	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	4.5	8.1			4.8			0.2		76.9	29.2	
LOS	A	A			A			A		E	C	
Approach Delay		8.1			4.8			0.2			68.6	
Approach LOS		A			A			A			E	
Queue Length 50th (m)	0.1	85.3			32.4			0.0		25.4	1.5	
Queue Length 95th (m)	0.9	136.5			52.8			0.0		41.8	8.9	
Internal Link Dist (m)		246.9			340.0			61.8			113.2	
Turn Bay Length (m)	30.0									6.7		
Base Capacity (vph)	393	2633			2647			340		255	311	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.01	0.63			0.36			0.02		0.37	0.06	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 113 (81%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 9.4	Intersection LOS: A
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 157: Lakeshore Rd W & Shawmarr Rd

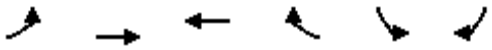
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø8
Lane Configurations							
Traffic Volume (vph)	1551	0	0	1051	0	0	
Future Volume (vph)	1551	0	0	1051	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (m)	3.4	3.3	3.3	3.4	3.5	3.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	3530	0	0	3394	0	0	
Flt Permitted							
Satd. Flow (perm)	3530	0	0	3394	0	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (k/h)	60			60	50		
Link Distance (m)	74.1			269.2	93.0		
Travel Time (s)	4.4			16.2	6.7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	0%	0%	0%	4%	2%	2%	
Adj. Flow (vph)	1551	0	0	1051	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1551	0	0	1051	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(m)	0.0			0.0	0.0		
Link Offset(m)	0.0			0.0	0.0		
Crosswalk Width(m)	4.8			4.8	4.8		
Two way Left Turn Lane							
Headway Factor	1.03	1.04	1.04	1.03	1.01	1.01	
Turning Speed (k/h)		14	24		24	14	
Number of Detectors	2			2			
Detector Template	Thru			Thru			
Leading Detector (m)	10.0			10.0			
Trailing Detector (m)	0.0			0.0			
Detector 1 Position(m)	0.0			0.0			
Detector 1 Size(m)	0.6			0.6			
Detector 1 Type	Cl+Ex			Cl+Ex			
Detector 1 Channel							
Detector 1 Extend (s)	0.0			0.0			
Detector 1 Queue (s)	0.0			0.0			
Detector 1 Delay (s)	0.0			0.0			
Detector 2 Position(m)	9.4			9.4			
Detector 2 Size(m)	0.6			0.6			
Detector 2 Type	Cl+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA			NA			
Protected Phases	2			6			8
Permitted Phases							
Detector Phase	2			6			



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø8
Switch Phase							
Minimum Initial (s)	8.0			8.0			4.0
Minimum Split (s)	16.0			23.0			23.0
Total Split (s)	78.0			78.0			23.0
Total Split (%)	77.2%			77.2%			23%
Maximum Green (s)	72.0			72.0			17.0
Yellow Time (s)	4.0			4.0			4.0
All-Red Time (s)	2.0			2.0			2.0
Lost Time Adjust (s)	0.0			0.0			
Total Lost Time (s)	6.0			6.0			
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0			3.0			3.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	0.0			0.0			8.0
Flash Dont Walk (s)	0.0			0.0			9.0
Pedestrian Calls (#/hr)	0			0			4
Act Effct Green (s)	95.2			95.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.47			0.33			
Control Delay	2.6			1.9			
Queue Delay	0.0			0.0			
Total Delay	2.6			1.9			
LOS	A			A			
Approach Delay	2.6			1.9			
Approach LOS	A			A			
Queue Length 50th (m)	0.0			0.0			
Queue Length 95th (m)	88.2			49.4			
Internal Link Dist (m)	50.1			245.2	69.0		
Turn Bay Length (m)							
Base Capacity (vph)	3327			3199			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.47			0.33			

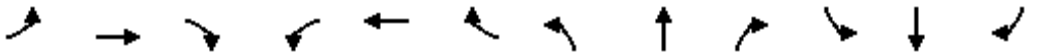
Intersection Summary			
Area Type:	Other		
Cycle Length: 101			
Actuated Cycle Length: 101			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 2.3		Intersection LOS: A	
Intersection Capacity Utilization 47.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 160: Lakeshore Rd W

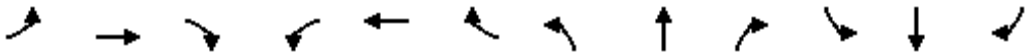


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	1478	996	35	92	24
Future Volume (vph)	20	1478	996	35	92	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.5	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.995			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	3391	3377	0	1716	1536
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	3391	3377	0	1716	1536
Link Speed (k/h)		60	60		50	
Link Distance (m)		635.6	74.1		98.7	
Travel Time (s)		38.1	4.4		7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	20	1478	996	35	92	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1498	1031	0	92	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.3	3.3		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.04	1.03	1.03	1.04	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1557	9	4	881	78	17	4	13	75	14	108
Future Volume (vph)	130	1557	9	4	881	78	17	4	13	75	14	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.5	3.3	3.3	3.5	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	50.0		15.0	50.0		20.0	0.0		15.0	0.0		35.0
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97			0.97	1.00	0.99			0.99	0.99
Frt			0.850			0.850		0.885				0.850
Flt Protected	0.950			0.950			0.950				0.960	
Satd. Flow (prot)	1662	3400	1457	1616	3305	1417	1750	1642	0	0	1740	1507
Flt Permitted	0.312			0.138			0.680				0.748	
Satd. Flow (perm)	544	3400	1407	235	3305	1373	1249	1642	0	0	1347	1484
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			23			51		13				108
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		676.4			635.6			98.7			487.8	
Travel Time (s)		40.6			38.1			7.1			35.1	
Confl. Peds. (#/hr)	3		4	4		3	2		5	5		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 (%)	5%	5%	5%	8%	8%	8%	2%	2%	2%	6%	6%	6%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	130	1557	9	4	881	78	17	4	13	75	14	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	1557	9	4	881	78	17	17	0	0	89	108
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)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.01	1.07	1.04	1.01	1.07	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



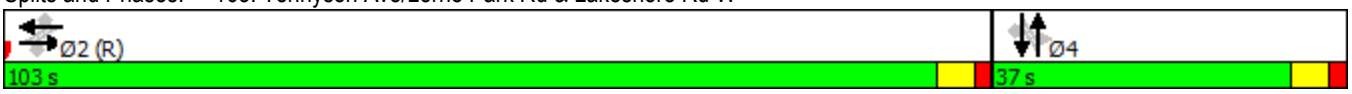
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2		2	4			4		4
Detector Phase	2	2	2	2	2	2	4	4		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	34.0	34.0		34.0	34.0	34.0
Total Split (s)	103.0	103.0	103.0	103.0	103.0	103.0	37.0	37.0		37.0	37.0	37.0
Total Split (%)	73.6%	73.6%	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%		26.4%	26.4%	26.4%
Maximum Green (s)	97.0	97.0	97.0	97.0	97.0	97.0	31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	None
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	11.0	11.0		11.0	11.0	11.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	2	2	2	2	2	2	2	2		2	2	2
Act Effct Green (s)	112.0	112.0	112.0	112.0	112.0	112.0	16.0	16.0			16.0	16.0
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.80	0.80	0.11	0.11			0.11	0.11
v/c Ratio	0.30	0.57	0.01	0.02	0.33	0.07	0.12	0.09			0.58	0.41
Control Delay	6.5	9.0	0.4	5.0	4.8	2.0	53.4	26.7			71.8	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	6.5	9.0	0.4	5.0	4.8	2.0	53.4	26.7			71.8	13.4
LOS	A	A	A	A	A	A	D	C			E	B
Approach Delay		8.8			4.6			40.0			39.8	
Approach LOS		A			A			D			D	
Queue Length 50th (m)	9.8	110.1	0.0	0.2	27.5	1.2	4.3	1.0			24.0	0.0
Queue Length 95th (m)	31.8	209.5	m0.3	1.5	55.4	6.6	10.7	7.6			38.1	16.0
Internal Link Dist (m)		652.4			611.6			74.7			463.8	
Turn Bay Length (m)	50.0		15.0	50.0		20.0						35.0
Base Capacity (vph)	435	2719	1130	187	2643	1108	276	373			298	412
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	0.30	0.57	0.01	0.02	0.33	0.07	0.06	0.05			0.30	0.26

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	

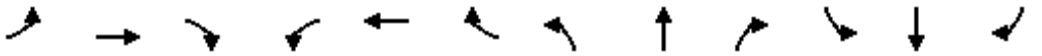
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 163: Tennyson Ave/Lorne Park Rd & Lakeshore Rd W

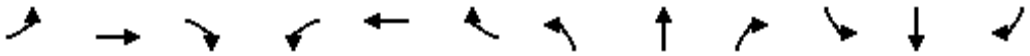


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1576	11	21	1025	23	18
Future Volume (vph)	1576	11	21	1025	23	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.3	3.3	3.5	3.5	3.5
Storage Length (m)		0.0	70.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.941	
Flt Protected			0.950		0.973	
Satd. Flow (prot)	3272	0	1662	3400	1654	0
Flt Permitted			0.950		0.973	
Satd. Flow (perm)	3272	0	1662	3400	1654	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	410.3			676.4	163.4	
Travel Time (s)	24.6			40.6	11.8	
Confl. Peds. (#/hr)		1	1			3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	9%	5%	5%	4%	4%
Adj. Flow (vph)	1576	11	21	1025	23	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1587	0	21	1025	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane	Yes					
Headway Factor	1.01	1.04	1.04	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	1278	24	18	817	12	86	12	50	88	11	66
Future Volume (vph)	26	1278	24	18	817	12	86	12	50	88	11	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.5	3.3	3.3	3.5	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	40.0		0.0	50.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		0.99	0.98		0.99	0.98	
Frt		0.997			0.998			0.879			0.871	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	3420	0	1631	3326	0	1684	1558	0	1668	1540	0
Flt Permitted	0.330			0.190			0.707			0.717		
Satd. Flow (perm)	576	3420	0	326	3326	0	1246	1558	0	1241	1540	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			2			50			66	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		280.4			410.3			279.5			170.0	
Travel Time (s)		16.8			24.6			20.1			12.2	
Confl. Peds. (#/hr)	16		7	7		16	4		10	10		4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	7%	7%	7%	6%	6%	6%	7%	7%	7%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	26	1278	24	18	817	12	86	12	50	88	11	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1302	0	18	829	0	86	62	0	88	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.04	1.01	1.04	1.04	1.01	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

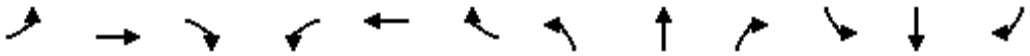


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		33.0	33.0		33.0	33.0	
Total Split (s)	99.0	99.0		99.0	99.0		41.0	41.0		41.0	41.0	
Total Split (%)	70.7%	70.7%		70.7%	70.7%		29.3%	29.3%		29.3%	29.3%	
Maximum Green (s)	93.0	93.0		93.0	93.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	8	8		8	8		5	5		5	5	
Act Effct Green (s)	111.7	111.7		111.7	111.7		16.3	16.3		16.3	16.3	
Actuated g/C Ratio	0.80	0.80		0.80	0.80		0.12	0.12		0.12	0.12	
v/c Ratio	0.06	0.48		0.07	0.31		0.60	0.28		0.61	0.32	
Control Delay	6.8	9.6		2.5	1.9		73.8	20.6		75.1	18.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.8	9.6		2.5	1.9		73.8	20.6		75.1	18.5	
LOS	A	A		A	A		E	C		E	B	
Approach Delay		9.6			1.9			51.5			48.7	
Approach LOS		A			A			D			D	
Queue Length 50th (m)	2.3	77.4		0.3	7.2		23.2	3.0		23.7	2.8	
Queue Length 95th (m)	m6.8	123.5		1.5	14.9		37.7	15.3		38.3	16.3	
Internal Link Dist (m)		256.4			386.3			255.5			146.0	
Turn Bay Length (m)	40.0			50.0			15.0			15.0		
Base Capacity (vph)	459	2730		260	2655		311	427		310	434	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.48		0.07	0.31		0.28	0.15		0.28	0.18	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 109 (78%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

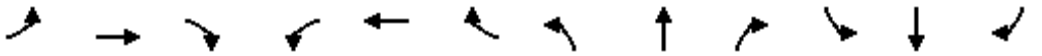
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 12.1	Intersection LOS: B
Intersection Capacity Utilization 60.7%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 170: Silver Birch Trail & Lakeshore Rd W

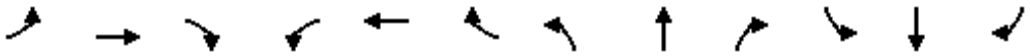


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1217	4	1	945	11	5	0	2	9	4	70
Future Volume (vph)	31	1217	4	1	945	11	5	0	2	9	4	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.5	3.3	3.3	3.5	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	35.0		0.0	60.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.998			0.961			0.886	
Flt Protected	0.950			0.950				0.966			0.995	
Satd. Flow (prot)	1631	3336	0	1678	3426	0	0	1783	0	0	1598	0
Flt Permitted	0.950			0.950				0.966			0.995	
Satd. Flow (perm)	1631	3336	0	1678	3426	0	0	1783	0	0	1598	0
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		444.2			280.4			89.5			152.9	
Travel Time (s)		26.7			16.8			6.4			11.0	
Confl. Peds. (#/hr)	10					10	8		3	3		8
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 (%)	7%	7%	7%	4%	4%	4%	0%	0%	0%	6%	6%	6%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	31	1217	4	1	945	11	5	0	2	9	4	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	1221	0	1	956	0	0	7	0	0	83	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.01	1.04	1.04	1.01	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1127	54	37	994	0	100	18	75	0	0	0
Future Volume (vph)	2	1127	54	37	994	0	100	18	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		0.0	30.0		0.0	0.0		15.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00							0.97			
Frt		0.993							0.850			
Flt Protected	0.950			0.950				0.959				
Satd. Flow (prot)	1627	3341	0	1627	3368	0	0	1690	1465	0	1921	0
Flt Permitted	0.271			0.217				0.758				
Satd. Flow (perm)	463	3341	0	372	3368	0	0	1336	1419	0	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7							65			
Link Speed (k/h)		50			60			40			50	
Link Distance (m)		249.8			444.2			340.2			83.0	
Travel Time (s)		18.0			26.7			30.6			6.0	
Confl. Peds. (#/hr)	4		1	1		4			9	9		
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%	6%	6%	6%	6%	6%	9%	9%	9%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	2	1127	54	37	994	0	100	18	75	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	1181	0	37	994	0	0	118	75	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.06	1.06	1.01	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



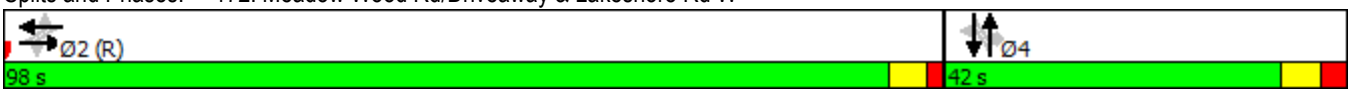
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm			
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		26.0	26.0	26.0	26.0	26.0	
Total Split (s)	98.0	98.0		98.0	98.0		42.0	42.0	42.0	42.0	42.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	92.0	92.0		92.0	92.0		35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			7.0	7.0		7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	2	2		2	2		3	3	3	3	3	
Act Effct Green (s)	109.3	109.3		109.3	109.3			17.7	17.7			
Actuated g/C Ratio	0.78	0.78		0.78	0.78			0.13	0.13			
v/c Ratio	0.01	0.45		0.13	0.38			0.70	0.32			
Control Delay	4.0	4.6		8.9	9.6			79.0	18.2			
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			
Total Delay	4.0	4.6		8.9	9.6			79.0	18.2			
LOS	A	A		A	A			E	B			
Approach Delay		4.6			9.6			55.4				
Approach LOS		A			A			E				
Queue Length 50th (m)	0.1	51.1		3.6	64.0			31.8	2.5			
Queue Length 95th (m)	m0.3	30.2		10.5	91.0			50.3	16.2			
Internal Link Dist (m)		225.8			420.2			316.2			59.0	
Turn Bay Length (m)	15.0			30.0					15.0			
Base Capacity (vph)	361	2609		290	2628			334	403			
Starvation Cap Reductn	0	0		0	0			0	0			
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.01	0.45		0.13	0.38			0.35	0.19			

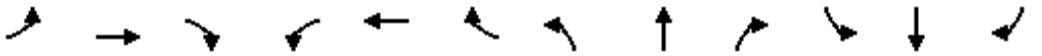
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 38 (27%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 10.8	Intersection LOS: B
Intersection Capacity Utilization 52.8%	ICU Level of Service A
Analysis Period (min) 15	

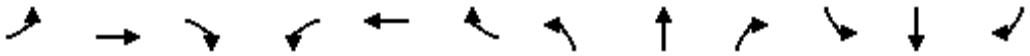
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 172: Meadow Wood Rd/Driveaway & Lakeshore Rd W





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	197	1037	19	3	939	79	14	3	3	46	4	186
Future Volume (vph)	197	1037	19	3	939	79	14	3	3	46	4	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		0.0	25.0		0.0	0.0		0.0	0.0		60.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	1.00			0.99			1.00	0.98
Frt		0.997			0.988			0.980				0.850
Flt Protected	0.950			0.950				0.966			0.956	
Satd. Flow (prot)	1675	3553	0	1437	3215	0	0	1650	0	0	1756	1551
Flt Permitted	0.249			0.271				0.778			0.729	
Satd. Flow (perm)	439	3553	0	408	3215	0	0	1318	0	0	1337	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			9			3				186
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		71.4			249.8			100.5			249.2	
Travel Time (s)		5.1			18.0			7.2			17.9	
Confl. Peds. (#/hr)	5		7	7		5	7		1	1		7
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%	0%	6%	20%	4%	3%	10%	0%	20%	5%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Parking (#/hr)					0							
Adj. Flow (vph)	197	1037	19	3	939	79	14	3	3	46	4	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1056	0	3	1018	0	0	20	0	0	50	186
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.06	1.06	1.08	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	



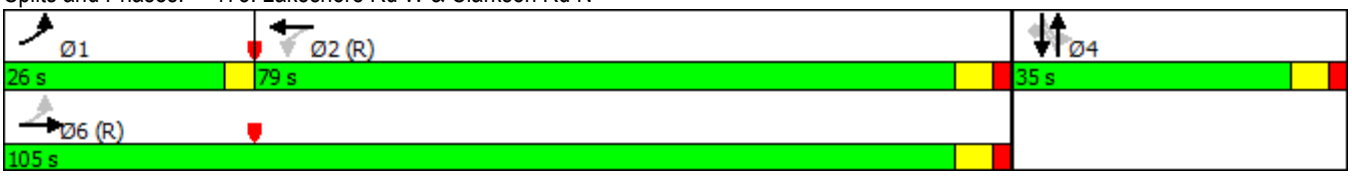
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6			2			4			4	
Permitted Phases	6			2			4			4		4
Detector Phase	1	6		2	2		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	26.0		26.0	26.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	26.0	105.0		79.0	79.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	18.6%	75.0%		56.4%	56.4%		25.0%	25.0%		25.0%	25.0%	25.0%
Maximum Green (s)	23.0	99.0		73.0	73.0		29.0	29.0		29.0	29.0	29.0
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)		8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)		12.0		12.0	12.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		5		4	4		3	3		3	3	3
Act Effct Green (s)	118.5	115.5		103.9	103.9			12.5			12.5	12.5
Actuated g/C Ratio	0.85	0.82		0.74	0.74			0.09			0.09	0.09
v/c Ratio	0.44	0.36		0.01	0.43			0.17			0.42	0.61
Control Delay	4.2	3.3		4.7	4.4			52.5			69.0	16.2
Queue Delay	0.5	2.0		0.0	0.1			0.0			0.0	0.1
Total Delay	4.7	5.3		4.7	4.5			52.5			69.0	16.3
LOS	A	A		A	A			D			E	B
Approach Delay		5.2			4.5			52.5			27.5	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	5.6	21.4		0.1	17.5			4.5			13.6	0.0
Queue Length 95th (m)	m13.7	47.2		m0.4	37.8			11.7			24.8	21.1
Internal Link Dist (m)		47.4			225.8			76.5			225.2	
Turn Bay Length (m)	15.0			25.0								60.0
Base Capacity (vph)	574	2932		302	2389			275			276	460
Starvation Cap Reductn	139	1669		0	0			0			0	0
Spillback Cap Reductn	0	0		0	236			0			0	13
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.45	0.84		0.01	0.47			0.07			0.18	0.42

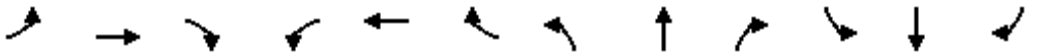
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 49 (35%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 65	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

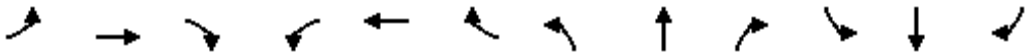
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 173: Lakeshore Rd W & Clarkson Rd N





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	1004	6	0	769	138	187	0	41	120	20	192
Future Volume (vph)	181	1004	6	0	769	138	187	0	41	120	20	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	0.0		0.0	15.0		0.0	0.0		10.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.98	
Frt		0.999			0.977			0.976			0.922	
Flt Protected		0.992						0.961			0.982	
Satd. Flow (prot)	0	3368	0	1746	3332	0	0	1795	0	0	1660	0
Flt Permitted		0.617						0.480			0.840	
Satd. Flow (perm)	0	2094	0	1746	3332	0	0	891	0	0	1417	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			29			23			49	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.5			71.4			365.2			42.8	
Travel Time (s)		17.5			5.1			26.3			3.1	
Confl. Peds. (#/hr)	5		7	7		5	10		6	6		10
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 (%)	5%	5%	5%	4%	4%	4%	0%	0%	0%	3%	3%	3%
Adj. Flow (vph)	181	1004	6	0	769	138	187	0	41	120	20	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1191	0	0	907	0	0	228	0	0	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.06	1.06	1.01	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



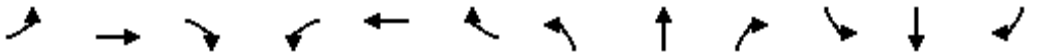
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		30.0	30.0		30.0	30.0	
Total Split (s)	95.0	95.0		95.0	95.0		45.0	45.0		45.0	45.0	
Total Split (%)	67.9%	67.9%		67.9%	67.9%		32.1%	32.1%		32.1%	32.1%	
Maximum Green (s)	89.0	89.0		89.0	89.0		39.0	39.0		39.0	39.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	4	4		4	4		5	5		5	5	
Act Effct Green (s)		92.9			92.9			35.1			35.1	
Actuated g/C Ratio		0.66			0.66			0.25			0.25	
v/c Ratio		0.86			0.41			0.95			0.85	
Control Delay		27.9			8.5			91.9			61.6	
Queue Delay		0.0			0.4			7.6			2.1	
Total Delay		27.9			8.9			99.5			63.7	
LOS		C			A			F			E	
Approach Delay		27.9			8.9			99.5			63.7	
Approach LOS		C			A			F			E	
Queue Length 50th (m)		174.4			84.3			54.9			73.3	
Queue Length 95th (m)		#198.1			56.5			#102.7			#113.9	
Internal Link Dist (m)		219.5			47.4			341.2			18.8	
Turn Bay Length (m)												
Base Capacity (vph)		1389			2219			264			430	
Starvation Cap Reductn		0			719			0			0	
Spillback Cap Reductn		0			0			19			31	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			0.60			0.93			0.83	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 49 (35%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	

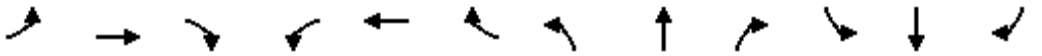
Intersection Signal Delay: 32.1	Intersection LOS: C
Intersection Capacity Utilization 100.2%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 174: Clarkson Rd S & Lakeshore Rd W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	1311	14	9	1073	3	13	1	8	19	1	63
Future Volume (vph)	39	1311	14	9	1073	3	13	1	8	19	1	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00			1.00			0.99			0.99	0.99
Frt		0.998						0.951				0.850
Flt Protected	0.950			0.950				0.971			0.955	
Satd. Flow (prot)	1691	3381	0	1725	3400	0	0	1762	0	0	1835	1551
Flt Permitted	0.257			0.193				0.807			0.721	
Satd. Flow (perm)	453	3381	0	350	3400	0	0	1463	0	0	1376	1529
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2						8				63
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		223.8			243.5			82.3			104.4	
Travel Time (s)		16.1			17.5			5.9			7.5	
Confl. Peds. (#/hr)	15		5	5		15	1		4	4		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	6%	0%	5%	0%	0%	0%	0%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Parking (#/hr)		0										
Adj. Flow (vph)	39	1311	14	9	1073	3	13	1	8	19	1	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1325	0	9	1076	0	0	22	0	0	20	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.08	1.06	1.06	1.01	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	



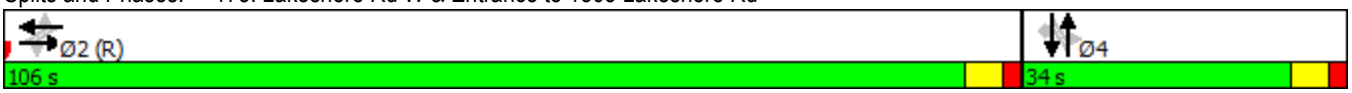
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Detector Phase	2	2		2	2		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		25.0	25.0		30.0	30.0		30.0	30.0	30.0
Total Split (s)	106.0	106.0		106.0	106.0		34.0	34.0		34.0	34.0	34.0
Total Split (%)	75.7%	75.7%		75.7%	75.7%		24.3%	24.3%		24.3%	24.3%	24.3%
Maximum Green (s)	100.0	100.0		100.0	100.0		28.0	28.0		28.0	28.0	28.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	7	7		7	7		2	2		2	2	2
Act Effct Green (s)	120.7	120.7		120.7	120.7			11.3			11.3	11.3
Actuated g/C Ratio	0.86	0.86		0.86	0.86			0.08			0.08	0.08
v/c Ratio	0.10	0.45		0.03	0.37			0.18			0.18	0.35
Control Delay	1.9	4.3		1.8	1.6			44.0			60.8	17.7
Queue Delay	0.0	0.2		0.0	0.0			0.0			0.0	0.0
Total Delay	1.9	4.5		1.8	1.6			44.0			60.8	17.7
LOS	A	A		A	A			D			E	B
Approach Delay		4.4			1.6			44.0			28.1	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	1.3	69.9		0.1	9.9			3.8			5.4	0.0
Queue Length 95th (m)	m2.8	111.5		m0.5	28.5			11.3			12.3	12.8
Internal Link Dist (m)		199.8			219.5			58.3			80.4	
Turn Bay Length (m)	25.0			25.0								
Base Capacity (vph)	390	2916		302	2932			299			275	356
Starvation Cap Reductn	0	624		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.10	0.58		0.03	0.37			0.07			0.07	0.18

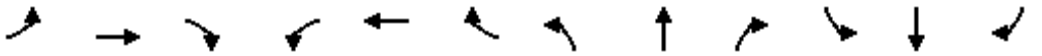
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 60	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 4.3	Intersection LOS: A
Intersection Capacity Utilization 60.2%	ICU Level of Service B
Analysis Period (min) 15	

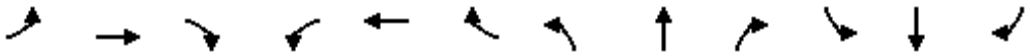
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 175: Lakeshore Rd W & Entrance to 1865 Lakeshore Rd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	1380	77	40	1170	5	116	7	61	46	36	115
Future Volume (vph)	30	1380	77	40	1170	5	116	7	61	46	36	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	35.0		0.0	40.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.98	
Frt		0.992			0.999			0.865			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1627	3335	0	1658	3429	0	1716	1569	0	1767	1653	0
Flt Permitted	0.214			0.148			0.540			0.713		
Satd. Flow (perm)	366	3335	0	258	3429	0	965	1569	0	1316	1653	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			1			54			87	
Link Speed (k/h)		60			50			40			50	
Link Distance (m)		231.1			223.8			197.7			136.3	
Travel Time (s)		13.9			16.1			17.8			9.8	
Confl. Peds. (#/hr)	5		6	6		5	11		7	7		11
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%	6%	6%	4%	4%	4%	4%	4%	4%	1%	1%	1%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	30	1380	77	40	1170	5	116	7	61	46	36	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	1457	0	40	1175	0	116	68	0	46	151	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.06	1.06	1.01	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



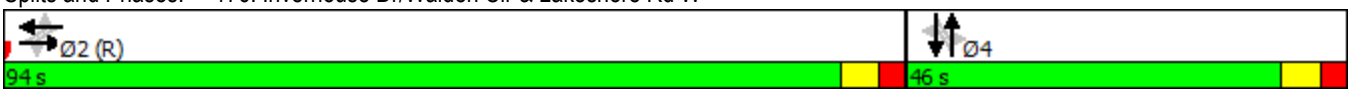
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		42.0	42.0		42.0	42.0	
Total Split (s)	94.0	94.0		94.0	94.0		46.0	46.0		46.0	46.0	
Total Split (%)	67.1%	67.1%		67.1%	67.1%		32.9%	32.9%		32.9%	32.9%	
Maximum Green (s)	87.0	87.0		87.0	87.0		39.0	39.0		39.0	39.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		21.0	21.0		21.0	21.0	
Pedestrian Calls (#/hr)	4	4		4	4		6	6		6	6	
Act Effct Green (s)	104.8	104.8		104.8	104.8		21.2	21.2		21.2	21.2	
Actuated g/C Ratio	0.75	0.75		0.75	0.75		0.15	0.15		0.15	0.15	
v/c Ratio	0.11	0.58		0.21	0.46		0.79	0.24		0.23	0.47	
Control Delay	8.6	10.6		15.2	11.8		90.3	17.6		51.3	26.5	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	8.6	10.6		15.2	11.8		90.3	17.6		51.3	26.5	
LOS	A	B		B	B		F	B		D	C	
Approach Delay		10.6			12.0			63.5			32.3	
Approach LOS		B			B			E			C	
Queue Length 50th (m)	2.2	73.1		4.2	76.6		31.7	3.4		11.5	16.0	
Queue Length 95th (m)	m4.9	m94.5		11.7	102.2		47.9	15.1		20.9	33.2	
Internal Link Dist (m)		207.1			199.8			173.7			112.3	
Turn Bay Length (m)	35.0			40.0			50.0			50.0		
Base Capacity (vph)	273	2498		193	2566		268	476		366	523	
Starvation Cap Reductn	0	0		0	266		0	0		0	0	
Spillback Cap Reductn	0	28		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.59		0.21	0.51		0.43	0.14		0.13	0.29	

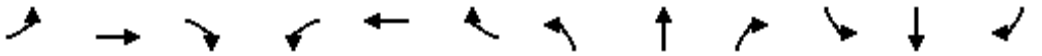
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 3 (2%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 80.6%	ICU Level of Service D
Analysis Period (min) 15	

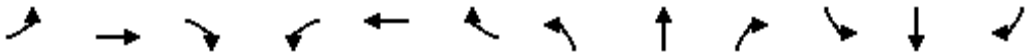
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 176: Inverhouse Dr/Walden Cir & Lakeshore Rd W





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	808	76	181	861	411	315	470	142	453	501	439
Future Volume (vph)	182	808	76	181	861	411	315	470	142	453	501	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	105.0		30.0	65.0		100.0	50.0		100.0	60.0		60.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.94	0.99	0.99		0.99		0.98	1.00		0.96
Frt			0.850		0.952				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1594	3295	1426	1716	4805	0	1580	3230	1413	1638	3349	1465
Flt Permitted	0.097			0.347			0.438			0.266		
Satd. Flow (perm)	163	3295	1341	618	4805	0	719	3230	1391	458	3349	1409
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			86		94				109			216
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		425.7			121.9			674.8			534.4	
Travel Time (s)		25.5			7.3			40.5			32.1	
Confl. Peds. (#/hr)	12		30	30		12	20		3	3		20
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 (%)	12%	12%	12%	4%	4%	4%	13%	13%	13%	9%	9%	9%
Adj. Flow (vph)	182	808	76	181	861	411	315	470	142	453	501	439
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	808	76	181	1272	0	315	470	142	453	501	439
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2			6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	8.0	34.0	34.0	34.0	34.0		8.0	39.0	39.0	8.0	39.0	39.0
Total Split (s)	12.0	68.0	68.0	56.0	56.0		26.0	39.0	39.0	33.0	46.0	46.0
Total Split (%)	8.6%	48.6%	48.6%	40.0%	40.0%		18.6%	27.9%	27.9%	23.6%	32.9%	32.9%
Maximum Green (s)	9.0	60.0	60.0	48.0	48.0		23.0	31.0	31.0	30.0	38.0	38.0
Yellow Time (s)	3.0	5.0	5.0	5.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	0.0	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	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	8.0	8.0	3.0	8.0	8.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	None
Walk Time (s)		11.0	11.0	11.0	11.0			13.0	13.0		13.0	13.0
Flash Dont Walk (s)		15.0	15.0	15.0	15.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		30	30	12	12			3	3		20	20
Act Effct Green (s)	69.8	64.8	64.8	48.0	48.0		52.8	26.2	26.2	64.2	34.6	34.6
Actuated g/C Ratio	0.50	0.46	0.46	0.34	0.34		0.38	0.19	0.19	0.46	0.25	0.25
v/c Ratio	0.82	0.53	0.11	0.86	0.74		0.78	0.78	0.41	0.98	0.61	0.86
Control Delay	53.5	27.7	5.0	77.2	42.5		40.6	63.2	17.1	67.2	49.8	42.3
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	53.5	27.7	5.0	77.2	42.5		40.6	63.2	17.1	67.2	49.8	42.3
LOS	D	C	A	E	D		D	E	B	E	D	D
Approach Delay		30.5			46.8			48.4			53.1	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	30.6	84.6	0.7	49.0	119.0		57.9	65.8	7.7	92.2	65.9	64.9
Queue Length 95th (m)	#86.6	110.6	10.5	#92.8	117.5		77.8	81.9	26.2	#151.9	81.0	#116.2
Internal Link Dist (m)		401.7			97.9			650.8			510.4	
Turn Bay Length (m)	105.0		30.0	65.0			50.0		100.0	60.0		60.0
Base Capacity (vph)	222	1525	666	211	1709		419	715	392	462	909	539
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.53	0.11	0.86	0.74		0.75	0.66	0.36	0.98	0.55	0.81

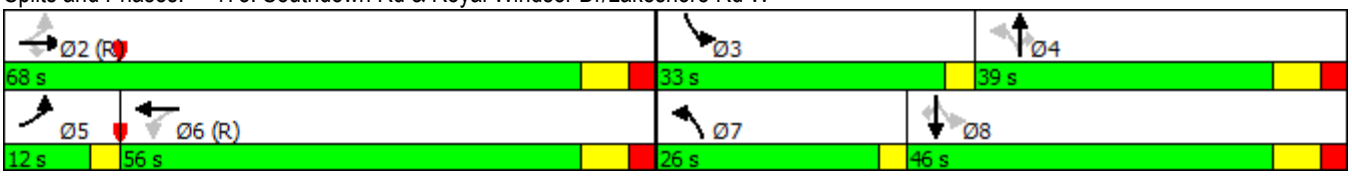
Intersection Summary

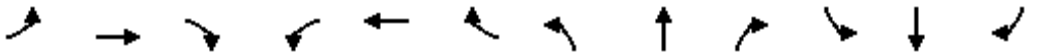
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98

Intersection Signal Delay: 45.4	Intersection LOS: D
Intersection Capacity Utilization 95.6%	ICU Level of Service F
Analysis Period (min) 15	

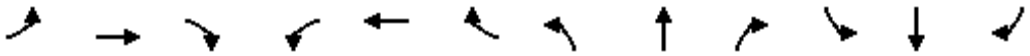
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 178: Southdown Rd & Royal Windsor Dr/Lakeshore Rd W





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	519	893	39	36	1080	60	37	17	5	42	0	19
Future Volume (vph)	519	893	39	36	1080	60	37	17	5	42	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	30.0		30.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00		0.97		0.99		0.99		
Frt			0.850			0.850		0.966			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3690	1537	1785	3514	1491	1566	1701	0	1513	1512	0
Flt Permitted	0.179			0.319			0.745			0.743		
Satd. Flow (perm)	336	3690	1490	598	3514	1443	1228	1701	0	1168	1512	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			55		5			516	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		408.5			425.7			154.8			127.0	
Travel Time (s)		24.5			25.5			11.1			9.1	
Confl. Peds. (#/hr)	3		3	3		3			7	7		
Confl. Bikes (#/hr)	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 (%)	0%	0%	1%	0%	5%	5%	14%	11%	0%	18%	0%	8%
Bus Blockages (#/hr)	0	0	7	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	519	893	39	36	1080	60	37	17	5	42	0	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	519	893	39	36	1080	60	37	22	0	42	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.05	1.01	0.97	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	5	2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	8.0	26.0	26.0	26.0	26.0	26.0	29.0	29.0		29.0	29.0	
Total Split (s)	50.0	111.0	111.0	61.0	61.0	61.0	29.0	29.0		29.0	29.0	
Total Split (%)	35.7%	79.3%	79.3%	43.6%	43.6%	43.6%	20.7%	20.7%		20.7%	20.7%	
Maximum Green (s)	47.0	105.0	105.0	55.0	55.0	55.0	22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		8.0	8.0	8.0	8.0	8.0	9.0	9.0		9.0	9.0	
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0	13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		3	3	3	3	3	7	7		0	0	
Act Effct Green (s)	120.8	119.0	119.0	78.8	78.8	78.8	12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.86	0.85	0.85	0.56	0.56	0.56	0.09	0.09		0.09	0.09	
v/c Ratio	0.78	0.28	0.03	0.11	0.55	0.07	0.35	0.14		0.41	0.03	
Control Delay	26.9	3.3	1.2	28.1	29.2	11.6	66.7	48.2		70.5	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	26.9	3.3	1.2	28.1	29.2	11.6	66.7	48.2		70.5	0.1	
LOS	C	A	A	C	C	B	E	D		E	A	
Approach Delay		11.7			28.3			59.8			48.6	
Approach LOS		B			C			E			D	
Queue Length 50th (m)	67.2	22.7	0.0	5.3	111.0	1.8	10.0	4.5		11.4	0.0	
Queue Length 95th (m)	115.1	46.0	2.7	m8.9	152.7	m4.7	20.0	12.2		21.9	0.0	
Internal Link Dist (m)		384.5			401.7			130.8			103.0	
Turn Bay Length (m)	30.0		30.0	15.0								
Base Capacity (vph)	776	3135	1272	336	1977	836	192	271		183	672	
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	0.28	0.03	0.11	0.55	0.07	0.19	0.08		0.23	0.03	

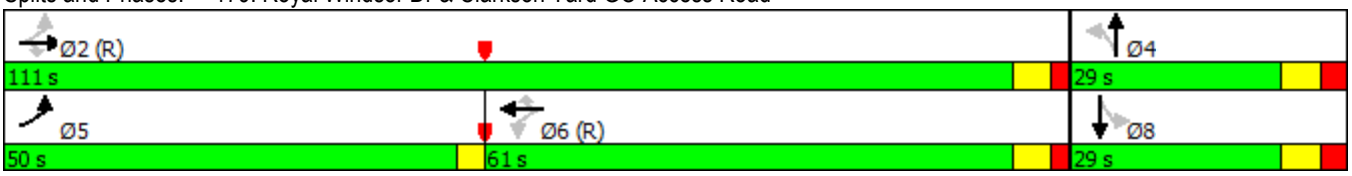
Intersection Summary

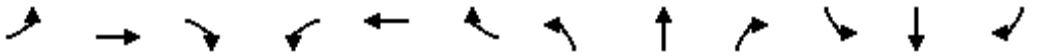
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 136 (97%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

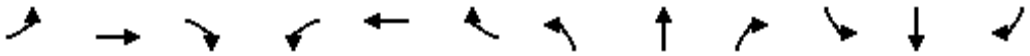
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 179: Royal Windsor Dr & Clarkson Yard GO Access Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1716	91	74	1064	2	8	2	34	0	0	1
Future Volume (vph)	15	1716	91	74	1064	2	8	2	34	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		0.0	40.0		0.0	0.0		50.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00										
Frt		0.992						0.858			0.865	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1700	3483	0	1700	3514	0	1716	1585	0	0	1662	0
Flt Permitted	0.261			0.099			0.833					
Satd. Flow (perm)	467	3483	0	177	3514	0	1505	1585	0	0	1662	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9						19			95	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1225.8			408.5			421.9			81.0	
Travel Time (s)		73.5			24.5			30.4			5.8	
Confl. Peds. (#/hr)			1	1								
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 (%)	5%	5%	5%	5%	5%	5%	4%	4%	4%	0%	0%	0%
Adj. Flow (vph)	15	1716	91	74	1064	2	8	2	34	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1807	0	74	1066	0	8	36	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

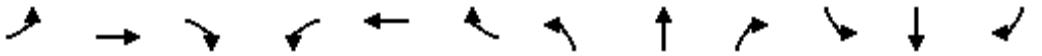


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	36.0	36.0		36.0	36.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	43.0	43.0		43.0	43.0		35.5	35.5		35.5	35.5	
Total Split (s)	65.5	65.5		65.5	65.5		35.5	35.5		35.5	35.5	
Total Split (%)	64.9%	64.9%		64.9%	64.9%		35.1%	35.1%		35.1%	35.1%	
Maximum Green (s)	58.5	58.5		58.5	58.5		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.5	7.5			7.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	69.7	69.7		69.7	69.7		8.1	8.1			8.1	
Actuated g/C Ratio	0.84	0.84		0.84	0.84		0.10	0.10			0.10	
v/c Ratio	0.04	0.62		0.50	0.36		0.05	0.21			0.00	
Control Delay	3.5	5.7		21.9	3.5		34.8	24.6			0.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	3.5	5.7		21.9	3.5		34.8	24.6			0.0	
LOS	A	A		C	A		C	C			A	
Approach Delay		5.7			4.7			26.5				
Approach LOS		A			A			C				
Queue Length 50th (m)	0.5	68.5		4.4	28.0		1.3	2.9			0.0	
Queue Length 95th (m)	2.1	93.6		#28.7	38.3		5.1	10.8			0.0	
Internal Link Dist (m)		1201.8			384.5			397.9			57.0	
Turn Bay Length (m)	15.0			40.0								
Base Capacity (vph)	391	2923		148	2948		508	547			624	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.04	0.62		0.50	0.36		0.02	0.07			0.00	

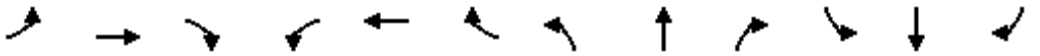
Intersection Summary			
Area Type:	Other		
Cycle Length: 101			
Actuated Cycle Length: 83.1			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 5.6		Intersection LOS: A	

Intersection Capacity Utilization 80.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 180: Avonhead Rd & Royal Windsor Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	1120	128	44	828	173	75	341	269	548	250	269
Future Volume (vph)	113	1120	128	44	828	173	75	341	269	548	250	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	80.0		0.0	55.0		190.0	70.0		40.0	45.0		55.0
Storage Lanes	1		0	1		1	1		2	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00				0.99			0.99	1.00		
Frt		0.985				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3477	0	1623	3417	1418	1405	3476	1521	3267	3411	1521
Flt Permitted	0.264			0.112			0.597			0.950		
Satd. Flow (perm)	477	3477	0	191	3417	1401	883	3476	1498	3261	3411	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				173			82			95
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		503.0			1225.8			946.2			558.5	
Travel Time (s)		30.2			73.5			56.8			33.5	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)	1		1	1		1			1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	8%	10%	8%	9%	27%	5%	5%	6%	7%	5%
Bus Blockages (#/hr)	0	0	3	0	0	8	0	0	0	0	0	0
Adj. Flow (vph)	113	1120	128	44	828	173	75	341	269	548	250	269
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	1248	0	44	828	173	75	341	269	548	250	269
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		6			2			4		3	8	
Permitted Phases	6			2		2	4		4			8
Detector Phase	6	6		2	2	2	4	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	35.0	35.0		35.0	35.0	35.0	30.0	30.0	30.0	13.0	45.0	45.0
Total Split (s)	61.0	61.0		61.0	61.0	61.0	30.0	30.0	30.0	29.0	59.0	59.0
Total Split (%)	50.8%	50.8%		50.8%	50.8%	50.8%	25.0%	25.0%	25.0%	24.2%	49.2%	49.2%
Maximum Green (s)	54.0	54.0		54.0	54.0	54.0	22.0	22.0	22.0	24.0	51.0	51.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	2.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0	8.0	5.0	8.0	8.0
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Min	Min	Min	None	Min	Min
Walk Time (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0		14.0	14.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	11.0	11.0	11.0		23.0	23.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0		0	0
Act Effct Green (s)	57.7	57.7		57.7	57.7	57.7	19.3	19.3	19.3	23.0	47.3	47.3
Actuated g/C Ratio	0.48	0.48		0.48	0.48	0.48	0.16	0.16	0.16	0.19	0.39	0.39
v/c Ratio	0.49	0.74		0.48	0.50	0.23	0.53	0.61	0.87	0.88	0.19	0.41
Control Delay	32.3	29.2		45.5	23.5	3.6	59.5	51.4	60.7	63.0	23.4	17.7
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	32.3	29.2		45.5	23.5	3.6	59.5	51.4	60.7	63.0	23.4	17.7
LOS	C	C		D	C	A	E	D	E	E	C	B
Approach Delay		29.4			21.1			55.9			42.3	
Approach LOS		C			C			E			D	
Queue Length 50th (m)	18.7	127.9		7.2	72.6	0.0	16.0	38.7	43.1	64.4	18.9	26.8
Queue Length 95th (m)	39.3	156.4		#25.0	91.3	12.2	31.8	53.6	#83.4	#90.0	27.5	47.9
Internal Link Dist (m)		479.0			1201.8			922.2			534.5	
Turn Bay Length (m)	80.0			55.0		190.0	70.0		40.0	45.0		55.0
Base Capacity (vph)	229	1679		91	1643	763	161	637	341	653	1449	701
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	0.74		0.48	0.50	0.23	0.47	0.54	0.79	0.84	0.17	0.38

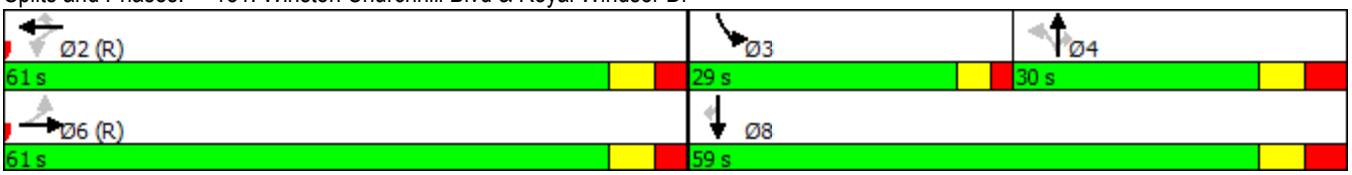
Intersection Summary

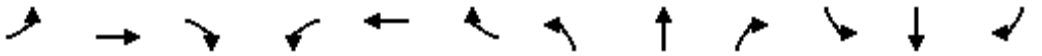
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 92 (77%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 35.0	Intersection LOS: D
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 181: Winston Churchhill Blvd & Royal Windsor Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	468	1517	0	0	1525	248	0	3	3	367	1	456
Future Volume (vph)	468	1517	0	0	1525	248	0	3	3	367	1	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	98.0		0.0	45.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							0.96
Frt					0.979			0.932				0.850
Flt Protected	0.950										0.953	
Satd. Flow (prot)	1728	3461	0	1837	3362	0	0	1790	0	0	1831	1566
Flt Permitted	0.950										0.723	
Satd. Flow (perm)	1723	3461	0	1837	3362	0	0	1790	0	0	1389	1505
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					16			3				317
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		201.1			241.3			76.2			320.6	
Travel Time (s)		14.5			17.4			5.5			23.1	
Confl. Peds. (#/hr)	11					11	15					15
Confl. Bikes (#/hr)	5		7	7		5						
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%	2%	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	10	0	0	0	0	0	0
Adj. Flow (vph)	468	1517	0	0	1525	248	0	3	3	367	1	456
Shared Lane Traffic (%)												
Lane Group Flow (vph)	468	1517	0	0	1773	0	0	6	0	0	368	456
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)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	2
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	13.4
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Prot	NA		Prot	NA			NA		Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		8
Detector Phase	5	2		1	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	32.0		13.0	32.0		30.0	30.0		30.0	30.0	30.0
Total Split (s)	34.0	88.0		13.0	67.0		39.0	39.0		39.0	39.0	39.0
Total Split (%)	24.3%	62.9%		9.3%	47.9%		27.9%	27.9%		27.9%	27.9%	27.9%
Maximum Green (s)	29.0	81.0		8.0	60.0		32.0	32.0		32.0	32.0	32.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	5.0	7.0		5.0	7.0			7.0			7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		10.0			10.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		15.0			15.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		4			4		5	5		5	5	5
Act Effct Green (s)	29.0	94.0			60.0			32.0			32.0	32.0
Actuated g/C Ratio	0.21	0.67			0.43			0.23			0.23	0.23
v/c Ratio	1.31	0.65			1.22			0.01			1.16	0.78
Control Delay	201.7	15.1			142.0			32.8			148.6	25.0
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	201.7	15.1			142.0			32.8			148.6	25.0
LOS	F	B			F			C			F	C
Approach Delay		59.1			142.0			32.8			80.2	
Approach LOS		E			F			C			F	
Queue Length 50th (m)	~166.0	120.1			~316.8			0.7			~120.2	37.2
Queue Length 95th (m)	#232.1	141.7			#359.4			4.4			#181.7	81.7
Internal Link Dist (m)		177.1			217.3			52.2			296.6	
Turn Bay Length (m)	98.0											
Base Capacity (vph)	357	2323			1450			411			317	588
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	1.31	0.65			1.22			0.01			1.16	0.78

Intersection Summary

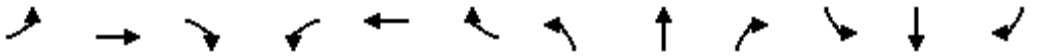
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 94.9	Intersection LOS: F
Intersection Capacity Utilization 119.0%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

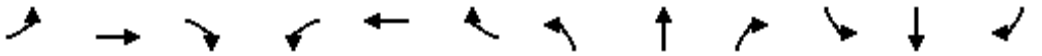
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 104: Dixie Rd & Lakeshore Rd E

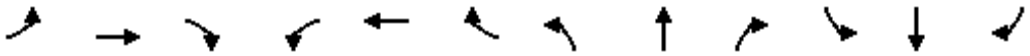


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1776	9	0	1935	30	0	0	24	0	0	31
Future Volume (vph)	0	1776	9	0	1935	30	0	0	24	0	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	210.0		0.0	98.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.998				0.865			0.865
Flt Protected												
Satd. Flow (prot)	1766	3391	0	1818	3488	0	0	0	1625	0	0	1578
Flt Permitted												
Satd. Flow (perm)	1766	3391	0	1818	3488	0	0	0	1625	0	0	1578
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		420.6			201.1			140.8			210.5	
Travel Time (s)		30.3			14.5			10.1			15.2	
Confl. Peds. (#/hr)							6					6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	0%	0%	0%	3%	3%	3%
Adj. Flow (vph)	0	1776	9	0	1935	30	0	0	24	0	0	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1785	0	0	1965	0	0	0	24	0	0	31
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.3%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1502	194	251	1693	7	171	115	252	33	120	53
Future Volume (vph)	105	1502	194	251	1693	7	171	115	252	33	120	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.5	3.5	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.7
Storage Length (m)	90.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		1.00	1.00		0.97				0.99	
Frt		0.983			0.999			0.897			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	3324	0	1750	3422	0	1750	1652	0	1566	1671	0
Flt Permitted	0.950			0.950			0.564			0.203		
Satd. Flow (perm)	1668	3324	0	1745	3422	0	1011	1652	0	335	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			1			100			20	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		166.1			420.6			180.8			223.0	
Travel Time (s)		12.0			30.3			13.0			16.1	
Confl. Peds. (#/hr)	19		10	10		19	20					20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	2%	2%	3%	3%	2%	2%	2%	14%	2%	14%
Adj. Flow (vph)	105	1502	194	251	1693	7	171	115	252	33	120	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	1696	0	251	1700	0	171	367	0	33	173	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.01	1.01	1.03	1.04	1.01	1.01	1.01	1.01	1.01	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		1	2		1	2		2	2	
Detector Template				Left			Left	Thru			Thru	
Leading Detector (m)	15.2	15.2		2.0	15.2		2.0	10.0		15.2	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		2.0	1.8		2.0	0.6		1.8	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4			13.4			9.4		13.4	9.4	
Detector 2 Size(m)	1.8	1.8			1.8			0.6		1.8	0.6	
Detector 2 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	24.0		13.0	22.0		27.0	27.0		22.0	22.0	
Total Split (s)	13.0	54.0		19.0	60.0		27.0	27.0		27.0	27.0	
Total Split (%)	13.0%	54.0%		19.0%	60.0%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	8.0	48.0		14.0	54.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	None		None	None		None	None	
Walk Time (s)		8.0			5.0		9.0	9.0		5.0	5.0	
Flash Dont Walk (s)		8.0			11.0		12.0	12.0		11.0	11.0	
Pedestrian Calls (#/hr)		10			0		7	7		0	0	
Act Effct Green (s)	8.1	48.0		15.3	55.2		19.7	19.7		19.7	19.7	
Actuated g/C Ratio	0.08	0.48		0.15	0.55		0.20	0.20		0.20	0.20	
v/c Ratio	0.77	1.06		0.94	0.90		0.86	0.91		0.50	0.50	
Control Delay	80.5	65.6		85.2	28.4		75.7	55.7		63.0	36.6	
Queue Delay	0.0	18.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	80.5	83.6		85.2	28.4		75.7	55.7		63.0	36.6	
LOS	F	F		F	C		E	E		E	D	
Approach Delay		83.5			35.7			62.0			40.9	
Approach LOS		F			D			E			D	
Queue Length 50th (m)	20.4	~190.0		~50.9	150.2		31.7	51.3		5.7	26.0	
Queue Length 95th (m)	#47.8	#232.6		#98.8	#207.5		#66.5	#100.4		#18.6	46.3	
Internal Link Dist (m)		142.1			396.6			156.8			199.0	
Turn Bay Length (m)	90.0			20.0								
Base Capacity (vph)	136	1605		268	1889		212	425		70	366	
Starvation Cap Reductn	0	137		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.77	1.16		0.94	0.90		0.81	0.86		0.47	0.47	

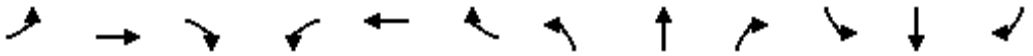
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	

Intersection Signal Delay: 58.2	Intersection LOS: E
Intersection Capacity Utilization 109.1%	ICU Level of Service H
Analysis Period (min) 15	

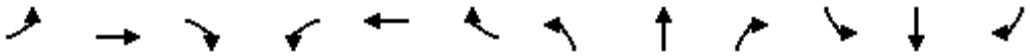
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 107: Lakeshore Rd E & Haig Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	1296	194	251	1646	20	171	151	252	12	113	67
Future Volume (vph)	64	1296	194	251	1646	20	171	151	252	12	113	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	20.0		0.0	90.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00	1.00		1.00	0.99			0.99	
Frt		0.980			0.998			0.906			0.953	
Flt Protected	0.950			0.950			0.950				0.997	
Satd. Flow (prot)	1745	3376	0	1531	3487	0	1785	1664	0	0	1816	0
Flt Permitted	0.950			0.950			0.478				0.701	
Satd. Flow (perm)	1745	3376	0	1525	3487	0	897	1664	0	0	1277	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			1			56			18	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		236.7			166.1			238.8			75.5	
Travel Time (s)		17.0			12.0			17.2			5.4	
Confl. Peds. (#/hr)			7	7			1		4	4		1
Confl. Bikes (#/hr)	5		4	4		5						
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%	2%	0%	14%	1%	0%	0%	0%	5%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	64	1296	194	251	1646	20	171	151	252	12	113	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	1490	0	251	1666	0	171	403	0	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		2	2		2	2		1	2	
Detector Template	Left							Thru		Left	Thru	
Leading Detector (m)	2.0	15.2		15.2	15.2		15.2	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	1.8		1.8	1.8		1.8	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		13.4		13.4	13.4		13.4	9.4			9.4	
Detector 2 Size(m)		1.8		1.8	1.8		1.8	0.6			0.6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	22.0		13.0	22.0		22.0	22.0		21.0	21.0	
Total Split (s)	15.0	69.0		32.0	86.0		39.0	39.0		39.0	39.0	
Total Split (%)	10.7%	49.3%		22.9%	61.4%		27.9%	27.9%		27.9%	27.9%	
Maximum Green (s)	10.0	63.0		27.0	80.0		33.0	33.0		34.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		6.0	6.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.4	63.2		25.5	81.9		34.3	34.3			35.3	
Actuated g/C Ratio	0.07	0.45		0.18	0.58		0.24	0.24			0.25	
v/c Ratio	0.55	0.97		0.90	0.82		0.78	0.90			0.57	
Control Delay	65.8	47.9		89.4	27.7		74.4	67.5			49.7	
Queue Delay	0.0	25.7		0.0	47.5		154.4	0.0			105.1	
Total Delay	65.8	73.6		89.4	75.2		228.7	67.5			154.8	
LOS	E	E		F	E		F	E			F	
Approach Delay		73.3			77.1			115.5			154.8	
Approach LOS		E			E			F			F	
Queue Length 50th (m)	15.9	230.5		67.8	191.4		45.1	96.7			42.9	
Queue Length 95th (m)	m15.6	m224.7		#113.4	224.4		#84.0	#157.8			69.6	
Internal Link Dist (m)		212.7			142.1			214.8			51.5	
Turn Bay Length (m)	20.0			90.0								
Base Capacity (vph)	124	1532		295	2041		219	450			335	
Starvation Cap Reductn	0	129		0	530		0	0			0	
Spillback Cap Reductn	0	0		0	410		205	0			295	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.52	1.06		0.85	1.10		12.21	0.90			4.80	

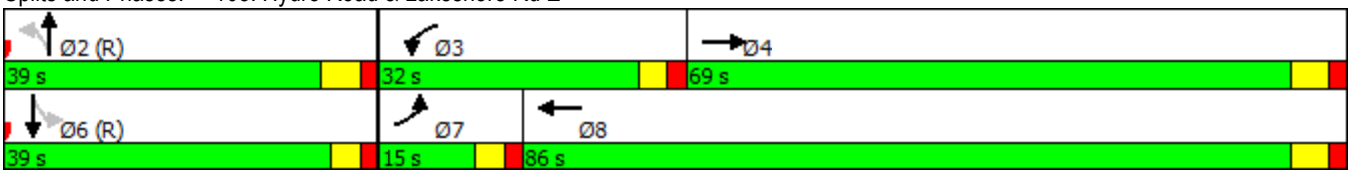
Intersection Summary

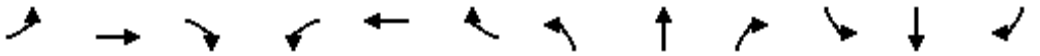
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 84.4	Intersection LOS: F
Intersection Capacity Utilization 111.4%	ICU Level of Service H
Analysis Period (min) 15	

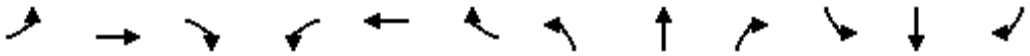
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 108: Hydro Road & Lakeshore Rd E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1276	194	251	1790	31	171	235	252	19	263	111
Future Volume (vph)	110	1276	194	251	1790	31	171	235	252	19	263	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	130.0		0.0	25.0		0.0	20.0		0.0	35.6		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	1.00			0.99			0.98	
Frt		0.980			0.997			0.922			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	3299	0	1504	3032	0	1785	1755	0	1608	1624	0
Flt Permitted	0.950			0.950			0.280			0.120		
Satd. Flow (perm)	1676	3299	0	1496	3032	0	526	1755	0	203	1624	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			2			39			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		266.7			236.7			111.2			254.0	
Travel Time (s)		19.2			17.0			8.0			18.3	
Confl. Peds. (#/hr)	3		11	11		3	18		3	3		18
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	16%	16%	16%	0%	0%	0%	11%	11%	11%
Bus Blockages (#/hr)	0	0	0	0	0	10	0	0	0	0	0	0
Adj. Flow (vph)	110	1276	194	251	1790	31	171	235	252	19	263	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	1470	0	251	1821	0	171	487	0	19	374	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	24.0		13.0	22.0		27.0	27.0		23.0	23.0	
Total Split (s)	13.0	65.0		28.0	80.0		47.0	47.0		47.0	47.0	
Total Split (%)	9.3%	46.4%		20.0%	57.1%		33.6%	33.6%		33.6%	33.6%	
Maximum Green (s)	8.0	59.0		23.0	74.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	None		Min	Min		None	None	
Walk Time (s)		8.0			5.0		8.0	8.0		5.0	5.0	
Flash Dont Walk (s)		10.0			11.0		12.0	12.0		11.0	11.0	
Pedestrian Calls (#/hr)		5			0		7	7		0	0	
Act Effct Green (s)	8.0	59.0		23.0	74.0		40.0	40.0		40.0	40.0	
Actuated g/C Ratio	0.06	0.42		0.16	0.53		0.29	0.29		0.29	0.29	
v/c Ratio	1.16	1.05		1.02	1.14		1.14	0.92		0.33	0.79	
Control Delay	196.5	77.7		96.1	110.2		160.8	68.4		57.7	57.4	
Queue Delay	0.0	5.0		0.0	0.4		0.0	55.0		67.2	0.0	
Total Delay	196.5	82.8		96.1	110.6		160.8	123.4		124.9	57.4	
LOS	F	F		F	F		F	F		F	E	
Approach Delay		90.7			108.8			133.1			60.7	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	~35.6	~231.9		~73.9	~316.5		~55.1	122.4		4.2	92.3	
Queue Length 95th (m)	#74.2	#275.1		m#107.9	#359.6		#101.6	#187.3		13.2	#137.4	
Internal Link Dist (m)		242.7			212.7			87.2			230.0	
Turn Bay Length (m)	130.0			25.0			20.0			35.6		
Base Capacity (vph)	95	1398		247	1603		150	529		58	474	
Starvation Cap Reductn	0	0		0	192		0	0		0	0	
Spillback Cap Reductn	0	17		0	0		0	314		36	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.16	1.06		1.02	1.29		1.14	2.27		0.86	0.79	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

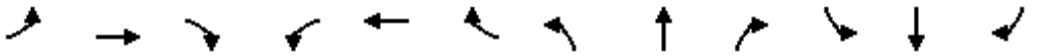
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 102.1	Intersection LOS: F
Intersection Capacity Utilization 112.6%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

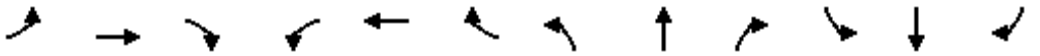
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 110: Lakeshore Rd E & Ogden Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1431	32	18	1791	7	76	9	32	0	0	0
Future Volume (vph)	5	1431	32	18	1791	7	76	9	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	20.0		20.0	40.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.98	0.98				
Frt		0.997			0.999			0.883				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1694	3414	0	1711	3457	0	1638	1530	0	0	1921	0
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1692	3414	0	1707	3457	0	1279	1530	0	0	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			32				
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		382.7			266.7			249.8			64.2	
Travel Time (s)		27.6			19.2			18.0			4.6	
Confl. Peds. (#/hr)	7		8	8		7	13		9	9		13
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	9%	9%	9%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	5	1431	32	18	1791	7	76	9	32	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	1463	0	18	1798	0	76	41	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



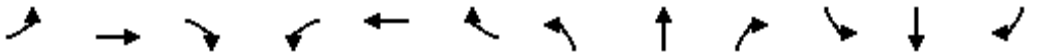
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA				
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	25.0		13.0	22.0		29.0	29.0		23.0	23.0	
Total Split (s)	13.0	38.0		13.0	38.0		29.0	29.0		29.0	29.0	
Total Split (%)	16.3%	47.5%		16.3%	47.5%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	8.0	32.0		8.0	32.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		7.0	7.0			7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	None		Min	Min		None	None	
Walk Time (s)		8.0			5.0		9.0	9.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0		13.0	13.0		11.0	11.0	
Pedestrian Calls (#/hr)		5			0		8	8		0	0	
Act Effct Green (s)	8.0	52.3		8.0	52.3		12.1	12.1				
Actuated g/C Ratio	0.10	0.65		0.10	0.65		0.15	0.15				
v/c Ratio	0.03	0.65		0.11	0.79		0.40	0.16				
Control Delay	33.0	13.7		34.4	16.9		34.9	13.3				
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				
Total Delay	33.0	13.7		34.4	16.9		34.9	13.3				
LOS	C	B		C	B		C	B				
Approach Delay		13.8			17.1			27.3				
Approach LOS		B			B			C				
Queue Length 50th (m)	0.7	48.6		2.6	71.4		10.9	1.2				
Queue Length 95th (m)	3.8	#172.5		8.5	#230.5		19.4	7.9				
Internal Link Dist (m)		358.7			242.7			225.8			40.2	
Turn Bay Length (m)	20.0			40.0								
Base Capacity (vph)	169	2234		171	2262		351	443				
Starvation Cap Reductn	0	0		0	0		0	0				
Spillback Cap Reductn	0	0		0	0		0	0				
Storage Cap Reductn	0	0		0	0		0	0				
Reduced v/c Ratio	0.03	0.65		0.11	0.79		0.22	0.09				

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

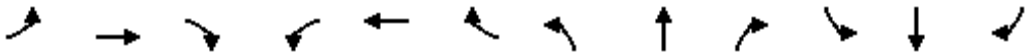
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 16.0	Intersection LOS: B
Intersection Capacity Utilization 70.8%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 113: Lakefront Promenade/Lakefront Promenade / Driveway & Lakeshore Rd E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	1408	27	27	1791	28	108	29	42	12	3	13
Future Volume (vph)	33	1408	27	27	1791	28	108	29	42	12	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		20.0	20.0		20.0	0.0		0.0	21.1		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.97	0.99		0.99	0.96	
Frt		0.997			0.998			0.911			0.878	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1646	3318	0	1694	3418	0	1750	1691	0	1785	1622	0
Flt Permitted	0.950			0.950			0.747			0.711		
Satd. Flow (perm)	1643	3318	0	1690	3418	0	1328	1691	0	1320	1622	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			42			13	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		235.5			382.7			263.0			216.7	
Travel Time (s)		17.0			27.6			23.7			15.6	
Confl. Peds. (#/hr)	8		6	6		8	19		15	15		19
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%	6%	6%	3%	3%	3%	2%	2%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	33	1408	27	27	1791	28	108	29	42	12	3	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1435	0	27	1819	0	108	71	0	12	16	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



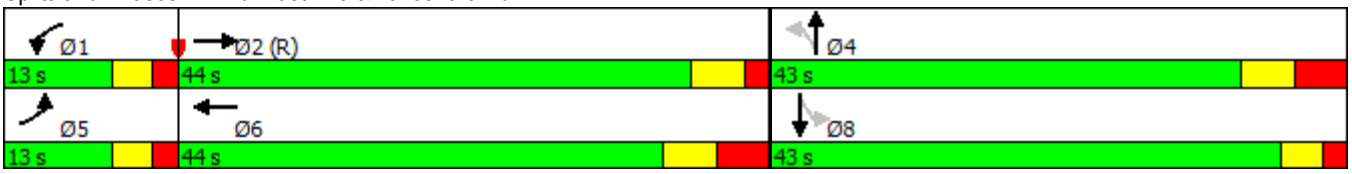
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	24.0		13.0	24.0		43.0	43.0		21.0	21.0	
Total Split (s)	13.0	44.0		13.0	44.0		43.0	43.0		43.0	43.0	
Total Split (%)	13.0%	44.0%		13.0%	44.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	8.0	38.0		8.0	36.0		35.0	35.0		38.0	38.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	4.0		4.0	4.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	8.0		8.0	8.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	None		Min	Min		None	None	
Walk Time (s)		8.0			5.0		14.0	14.0		5.0	5.0	
Flash Dont Walk (s)		10.0			11.0		21.0	21.0		11.0	11.0	
Pedestrian Calls (#/hr)		5			0		12	12		0	0	
Act Effct Green (s)	8.1	61.5		8.0	59.4		16.7	16.7		19.7	19.7	
Actuated g/C Ratio	0.08	0.62		0.08	0.59		0.17	0.17		0.20	0.20	
v/c Ratio	0.25	0.70		0.20	0.90		0.49	0.22		0.05	0.05	
Control Delay	48.1	19.5		46.9	28.3		42.6	16.6		27.0	14.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.1	19.5		46.9	28.3		42.6	16.6		27.0	14.0	
LOS	D	B		D	C		D	B		C	B	
Approach Delay		20.2			28.6			32.3			19.6	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	6.1	96.9		5.0	157.6		20.0	5.0		2.0	0.5	
Queue Length 95th (m)	15.5	#214.2		13.3	#302.1		27.6	12.8		5.0	4.5	
Internal Link Dist (m)		211.5			358.7			239.0			192.7	
Turn Bay Length (m)	15.0			20.0						21.1		
Base Capacity (vph)	133	2041		135	2031		464	619		501	624	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.70		0.20	0.90		0.23	0.11		0.02	0.03	

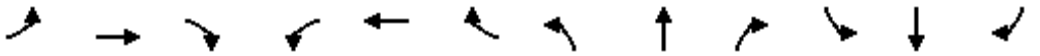
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 82.9%	ICU Level of Service E
Analysis Period (min) 15	

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

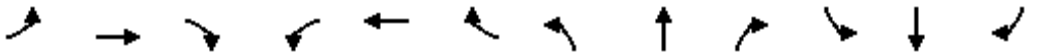
Splits and Phases: 116: East Ave & Lakeshore Rd E





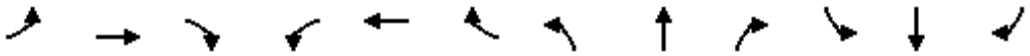
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	1494	18	22	1984	38	2	0	5	12	0	8
Future Volume (vph)	18	1494	18	22	1984	38	2	0	5	12	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.997			0.850			0.946	
Flt Protected	0.950			0.950			0.950				0.971	
Satd. Flow (prot)	1694	3420	0	1728	3484	0	1785	1633	0	0	1765	0
Flt Permitted	0.950			0.950			0.950				0.971	
Satd. Flow (perm)	1694	3420	0	1728	3484	0	1785	1633	0	0	1765	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		141.3			235.5			141.8			120.3	
Travel Time (s)		10.2			17.0			10.2			8.7	
Confl. Peds. (#/hr)							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 (%)	3%	3%	3%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	18	1494	18	22	1984	38	2	0	5	12	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	1512	0	22	2022	0	2	5	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	517	1091	0	0	1281	480	0	0	0	463	0	465
Future Volume (vph)	517	1091	0	0	1281	480	0	0	0	463	0	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	59.0		0.0
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor					0.98					0.99	0.99	0.97
Frt					0.959							0.850
Flt Protected	0.950									0.950	0.950	
Satd. Flow (prot)	1646	3096	0	1837	3193	0	0	1921	0	1600	1636	1551
Flt Permitted	0.051									0.950	0.950	
Satd. Flow (perm)	88	3096	0	1837	3193	0	0	1921	0	1587	1623	1501
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					50							140
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		96.9			141.3			49.2			282.4	
Travel Time (s)		7.0			10.2			3.5			20.3	
Confl. Peds. (#/hr)	29		13	13		29	22		3	3		22
Confl. Bikes (#/hr)	4		1	1		4						
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%	14%	0%	0%	3%	5%	0%	0%	0%	6%	0%	3%
Adj. Flow (vph)	517	1091	0	0	1281	480	0	0	0	463	0	465
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	517	1091	0	0	1761	0	0	0	0	231	232	465
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)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	2
Detector Template												
Leading Detector (m)	11.8	11.8		15.2	15.2		11.8	11.8		15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	10.0	10.0		13.4	13.4		10.0	10.0		13.4	13.4	13.4
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex

Lane Group	Ø8
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (m)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (k/h)	
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA					Split	NA	pm+ov
Protected Phases	5	2			6			3		4	4	5
Permitted Phases	2			6			3					4
Detector Phase	5	2		6	6		3	3		4	4	5
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	5.0
Minimum Split (s)	8.0	39.0		39.0	39.0		15.0	15.0		15.0	15.0	8.0
Total Split (s)	32.0	102.0		70.0	70.0		15.0	15.0		23.0	23.0	32.0
Total Split (%)	22.9%	72.9%		50.0%	50.0%		10.7%	10.7%		16.4%	16.4%	22.9%
Maximum Green (s)	29.0	95.0		63.0	63.0		8.0	8.0		16.0	16.0	29.0
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	3.0
All-Red Time (s)	0.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		7.0	7.0			7.0		7.0	7.0	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)		12.0		12.0	12.0							
Flash Dont Walk (s)		20.0		20.0	20.0							
Pedestrian Calls (#/hr)		5		10	10							
Act Effct Green (s)	111.4	107.4			75.4					18.6	18.6	51.6
Actuated g/C Ratio	0.80	0.77			0.54					0.13	0.13	0.37
v/c Ratio	1.32	0.46			1.01					1.09	1.07	0.71
Control Delay	196.4	7.1			55.3					142.8	137.1	30.9
Queue Delay	0.0	0.0			0.0					0.0	0.0	0.0
Total Delay	196.4	7.1			55.3					142.8	137.1	30.9
LOS	F	A			E					F	F	C
Approach Delay		67.9			55.3						85.3	
Approach LOS		E			E						F	
Queue Length 50th (m)	~168.9	45.0			236.7					~84.4	~83.7	77.9
Queue Length 95th (m)	#243.1	84.0			#343.8					94.1	93.8	99.9
Internal Link Dist (m)		72.9			117.3			25.2			258.4	
Turn Bay Length (m)	20.0									59.0		
Base Capacity (vph)	392	2375			1743					212	216	651
Starvation Cap Reductn	0	0			0					0	0	0
Spillback Cap Reductn	0	0			0					0	0	0
Storage Cap Reductn	0	0			0					0	0	0
Reduced v/c Ratio	1.32	0.46			1.01					1.09	1.07	0.71

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	

Lane Group	Ø8
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	8
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	36.0
Total Split (s)	38.0
Total Split (%)	27%
Maximum Green (s)	31.0
Yellow Time (s)	4.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	11.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

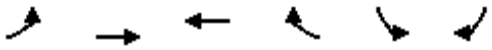
Intersection Summary

Maximum v/c Ratio: 1.32	
Intersection Signal Delay: 66.5	Intersection LOS: E
Intersection Capacity Utilization 114.6%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

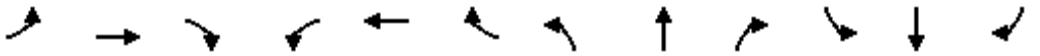
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Lakeshore Rd E & Cawthra Rd

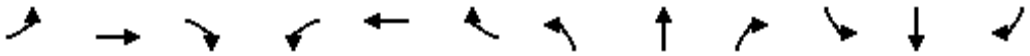


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	57	1659	1972	33	7	49
Future Volume (vph)	57	1659	1972	33	7	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.5	3.5
Storage Length (m)	20.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1711	3461	3488	0	1767	1581
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1711	3461	3488	0	1767	1581
Link Speed (k/h)		50	50		50	
Link Distance (m)		144.4	96.9		131.9	
Travel Time (s)		10.4	7.0		9.5	
Confl. Peds. (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Adj. Flow (vph)	57	1659	1972	33	7	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	1659	2005	0	7	49
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane		Yes				
Headway Factor	1.04	1.03	1.03	1.04	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1581	13	9	1973	50	10	4	12	52	4	117
Future Volume (vph)	125	1581	13	9	1973	50	10	4	12	52	4	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.5	3.5	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	25.0		0.0	25.0		0.0	15.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00					0.99	0.93	
Frt		0.999			0.996			0.887			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	3457	0	1750	3445	0	1750	1634	0	1767	1471	0
Flt Permitted	0.057			0.154			0.645			0.747		
Satd. Flow (perm)	103	3457	0	284	3445	0	1188	1634	0	1379	1471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			4			12			112	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		246.1			144.4			81.0			68.6	
Travel Time (s)		17.7			10.4			5.8			4.9	
Confl. Peds. (#/hr)	2					2				6		49
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	125	1581	13	9	1973	50	10	4	12	52	4	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	1594	0	9	2023	0	10	16	0	52	121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	1.03	1.01	1.01	1.03	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		1	2		1	2		2	2	
Detector Template				Left			Left	Thru			Thru	
Leading Detector (m)	15.2	15.2		2.0	15.2		2.0	10.0		15.2	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		2.0	1.8		2.0	0.6		1.8	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4			13.4			9.4		13.4	9.4	
Detector 2 Size(m)	1.8	1.8			1.8			0.6		1.8	0.6	
Detector 2 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	9.0	28.0		28.0	28.0		28.0	28.0		28.0	28.0	
Total Split (s)	9.0	72.0		63.0	63.0		28.0	28.0		28.0	28.0	
Total Split (%)	9.0%	72.0%		63.0%	63.0%		28.0%	28.0%		28.0%	28.0%	
Maximum Green (s)	6.0	66.0		57.0	57.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	81.2	78.2		66.6	66.6		9.8	9.8		9.8	9.8	
Actuated g/C Ratio	0.81	0.78		0.67	0.67		0.10	0.10		0.10	0.10	
v/c Ratio	0.56	0.59		0.05	0.88		0.09	0.09		0.39	0.50	
Control Delay	24.1	5.7		8.3	20.6		41.3	24.3		50.1	16.9	
Queue Delay	0.0	0.0		0.0	0.9		0.0	0.0		0.0	0.0	
Total Delay	24.1	5.7		8.3	21.5		41.3	24.3		50.1	16.9	
LOS	C	A		A	C		D	C		D	B	
Approach Delay		7.0			21.5			30.8			26.9	
Approach LOS		A			C			C			C	
Queue Length 50th (m)	7.2	49.6		0.5	139.7		1.8	0.7		9.7	1.6	
Queue Length 95th (m)	25.4	78.1		2.9	#255.8		6.5	6.7		20.7	17.4	
Internal Link Dist (m)		222.1			120.4			57.0			44.6	
Turn Bay Length (m)	25.0			25.0			15.0					
Base Capacity (vph)	222	2704		188	2295		261	368		303	410	
Starvation Cap Reductn	0	0		0	96		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.59		0.05	0.92		0.04	0.04		0.17	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88

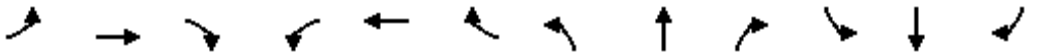
Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 93.3%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 122: Lakeshore Rd E & Lagoon St

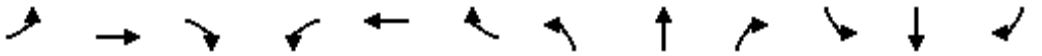
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1667	25	26	2152	23	36
Future Volume (vph)	1667	25	26	2152	23	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.3	3.3	3.4	3.5	3.5
Storage Length (m)		0.0	20.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3387	0	1711	3461	1700	1521
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3387	0	1711	3461	1700	1521
Link Speed (k/h)	50			50	50	
Link Distance (m)	148.0			246.1	257.7	
Travel Time (s)	10.7			17.7	18.6	
Confl. Peds. (#/hr)		3	3		1	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	2%	2%	5%	5%
Bus Blockages (#/hr)	0	5	0	0	0	0
Adj. Flow (vph)	1667	25	26	2152	23	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1692	0	26	2152	23	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.03	1.04	1.04	1.03	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.4%		ICU Level of Service D	
Analysis Period (min) 15			

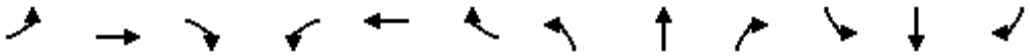


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1751	40	69	2098	23	17	4	69	7	3	3
Future Volume (vph)	15	1751	40	69	2098	23	17	4	69	7	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	25.0		0.0	30.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.998			0.858			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1631	3289	0	1694	3420	0	1716	1585	0	1451	1445	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1631	3289	0	1694	3420	0	1716	1585	0	1451	1445	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		170.8			148.0			200.3			293.2	
Travel Time (s)		12.3			10.7			14.4			21.1	
Confl. Peds. (#/hr)			1	1			46		14	14		46
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 (%)	7%	7%	7%	3%	3%	3%	4%	4%	4%	23%	23%	23%
Adj. Flow (vph)	15	1751	40	69	2098	23	17	4	69	7	3	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1791	0	69	2121	0	17	73	0	7	6	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1692	74	77	2142	28	96	27	62	97	22	101
Future Volume (vph)	84	1692	74	77	2142	28	96	27	62	97	22	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	30.0		20.0	48.0		0.0	15.0		0.0	13.5		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98	0.98		0.98	0.97	
Frt		0.994			0.998			0.896			0.877	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	3366	0	1694	3418	0	1750	1647	0	1733	1592	0
Flt Permitted	0.052			0.102			0.560			0.684		
Satd. Flow (perm)	92	3366	0	182	3418	0	1014	1647	0	1223	1592	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			3			50			21	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.4			170.8			56.4			254.0	
Travel Time (s)		16.6			12.3			4.1			18.3	
Confl. Peds. (#/hr)	10		10	10		10	12		13	13		12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	84	1692	74	77	2142	28	96	27	62	97	22	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	1766	0	77	2170	0	96	89	0	97	123	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		30.0	30.0		30.0	30.0	
Total Split (s)	110.0	110.0		110.0	110.0		30.0	30.0		30.0	30.0	
Total Split (%)	78.6%	78.6%		78.6%	78.6%		21.4%	21.4%		21.4%	21.4%	
Maximum Green (s)	104.0	104.0		104.0	104.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	7	7		7	7		9	9		9	9	
Act Effct Green (s)	110.8	110.8		110.8	110.8		17.2	17.2		17.2	17.2	
Actuated g/C Ratio	0.79	0.79		0.79	0.79		0.12	0.12		0.12	0.12	
v/c Ratio	1.17	0.66		0.53	0.80		0.77	0.36		0.65	0.58	
Control Delay	180.1	8.5		23.6	12.3		95.6	29.8		77.2	57.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	180.1	8.5		23.6	12.3		95.6	29.8		77.2	57.5	
LOS	F	A		C	B		F	C		E	E	
Approach Delay		16.3			12.7			64.0			66.2	
Approach LOS		B			B			E			E	
Queue Length 50th (m)	~27.4	96.5		6.7	155.0		26.1	9.8		25.9	26.9	
Queue Length 95th (m)	#44.3	145.7		33.2	235.4		44.1	25.1		43.1	45.5	
Internal Link Dist (m)		206.4			146.8			32.4			230.0	
Turn Bay Length (m)	30.0			48.0			15.0			13.5		
Base Capacity (vph)	72	2666		144	2706		173	323		209	290	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.17	0.66		0.53	0.80		0.55	0.28		0.46	0.42	

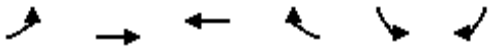
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 103.7%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 125: Shaw Drive/Shaw Dr & Lakeshore Rd E

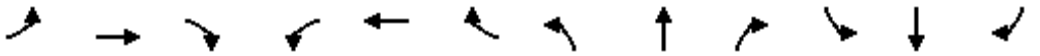


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	1862	2041	181	116	12
Future Volume (vph)	20	1862	2041	181	116	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.5	3.5
Storage Length (m)	0.0			6.0	0.0	0.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.988			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	3457	3419	0	1767	1581
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	3457	3419	0	1767	1581
Link Speed (k/h)		50	50		50	
Link Distance (m)		46.7	230.4		284.7	
Travel Time (s)		3.4	16.6		20.5	
Confl. Peds. (#/hr)	1			1		11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Adj. Flow (vph)	20	1862	2041	181	116	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1882	2222	0	116	12
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.3	3.3		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.04	1.03	1.03	1.04	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

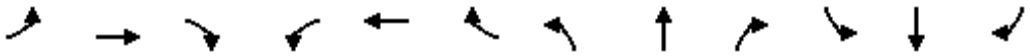
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 80.8%		ICU Level of Service D	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1642	41	91	1939	25	76
Future Volume (vph)	1642	41	91	1939	25	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.3	3.3	3.4	3.5	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.996					0.850
Flt Protected				0.998	0.950	
Satd. Flow (prot)	3274	0	0	3313	1785	1597
Flt Permitted				0.998	0.950	
Satd. Flow (perm)	3274	0	0	3313	1785	1597
Link Speed (k/h)	50			50	50	
Link Distance (m)	183.0			46.7	196.3	
Travel Time (s)	13.2			3.4	14.1	
Confl. Peds. (#/hr)		4	4		2	11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	0%	0%
Parking (#/hr)	0			0		
Adj. Flow (vph)	1642	41	91	1939	25	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1683	0	0	2030	25	76
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.10	1.04	1.04	1.10	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 119.3%		ICU Level of Service H	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1526	45	13	2017	11	60	5	21	57	7	29
Future Volume (vph)	27	1526	45	13	2017	11	60	5	21	57	7	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	17.3		0.0	15.5		0.0	0.0		0.0	0.0		15.0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98	0.97		0.97	0.97	
Frt		0.996			0.999			0.879			0.879	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	3302	0	1728	3316	0	1785	1632	0	1785	1639	0
Flt Permitted	0.058			0.127			0.734			0.740		
Satd. Flow (perm)	105	3302	0	231	3316	0	1346	1632	0	1350	1639	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			1			21			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		225.3			183.0			206.5			174.8	
Travel Time (s)		16.2			13.2			14.9			12.6	
Confl. Peds. (#/hr)	17		11	11		17	21		25	25		21
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	27	1526	45	13	2017	11	60	5	21	57	7	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	1571	0	13	2028	0	60	26	0	57	36	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	



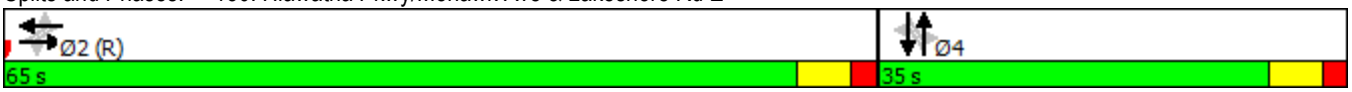
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		31.0	31.0		31.0	31.0	
Total Split (s)	65.0	65.0		65.0	65.0		35.0	35.0		35.0	35.0	
Total Split (%)	65.0%	65.0%		65.0%	65.0%		35.0%	35.0%		35.0%	35.0%	
Maximum Green (s)	59.0	59.0		59.0	59.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	10	10		10	10		16	16		16	16	
Act Effct Green (s)	76.8	76.8		76.8	76.8		15.2	15.2		15.2	15.2	
Actuated g/C Ratio	0.77	0.77		0.77	0.77		0.15	0.15		0.15	0.15	
v/c Ratio	0.33	0.62		0.07	0.80		0.30	0.10		0.28	0.14	
Control Delay	18.7	8.1		7.8	14.5		38.1	15.2		37.6	27.1	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	18.7	8.1		7.8	14.6		38.1	15.2		37.6	27.1	
LOS	B	A		A	B		D	B		D	C	
Approach Delay		8.3			14.6			31.2			33.6	
Approach LOS		A			B			C			C	
Queue Length 50th (m)	1.2	38.8		0.5	92.0		11.2	0.9		10.6	4.9	
Queue Length 95th (m)	m3.1	68.3		3.6	#252.4		19.6	7.1		19.0	11.8	
Internal Link Dist (m)		201.3			159.0			182.5			150.8	
Turn Bay Length (m)	17.3			15.5								
Base Capacity (vph)	81	2538		177	2548		390	488		391	481	
Starvation Cap Reductn	0	37		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	38		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.33	0.63		0.07	0.81		0.15	0.05		0.15	0.07	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 60 (60%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 12.8	Intersection LOS: B
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 130: Hiawatha Pkwy/Mohawk Ave & Lakeshore Rd E



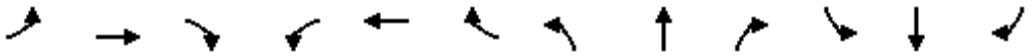
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1563	55	5	1874	73	8
Future Volume (vph)	1563	55	5	1874	73	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.3	3.3	3.4	3.5	3.5
Storage Length (m)		0.0	13.4		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00					0.97
Frt	0.995					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3204	0	1694	3256	1716	1536
Flt Permitted			0.122		0.950	
Satd. Flow (perm)	3204	0	218	3256	1716	1483
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6					8
Link Speed (k/h)	50			50	50	
Link Distance (m)	247.1			225.3	183.6	
Travel Time (s)	17.8			16.2	13.2	
Confl. Peds. (#/hr)		7	7			18
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	3%	3%	4%	4%
Parking (#/hr)	0			0		
Adj. Flow (vph)	1563	55	5	1874	73	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1618	0	5	1874	73	8
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.10	1.04	1.04	1.10	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		2	2	2	2
Detector Template						
Leading Detector (m)	15.2		15.2	15.2	15.2	15.2
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8		1.8	1.8	1.8	1.8
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	13.4		13.4	13.4	13.4	13.4
Detector 2 Size(m)	1.8		1.8	1.8	1.8	1.8
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Channel						
Detector 2 Extend (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases			2			4
Detector Phase	2		2	2	4	4
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	8.0
Minimum Split (s)	24.0		24.0	24.0	30.0	30.0
Total Split (s)	67.0		67.0	67.0	33.0	33.0
Total Split (%)	67.0%		67.0%	67.0%	33.0%	33.0%
Maximum Green (s)	61.0		61.0	61.0	27.0	27.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		C-Max	C-Max	Min	Min
Walk Time (s)	8.0		8.0	8.0	10.0	10.0
Flash Dont Walk (s)	10.0		10.0	10.0	14.0	14.0
Pedestrian Calls (#/hr)	6		6	6	6	6
Act Effct Green (s)	75.8		75.8	75.8	12.2	12.2
Actuated g/C Ratio	0.76		0.76	0.76	0.12	0.12
v/c Ratio	0.67		0.03	0.76	0.35	0.04
Control Delay	5.7		4.6	6.1	42.8	18.6
Queue Delay	0.0		0.0	0.1	0.0	0.0
Total Delay	5.7		4.6	6.2	42.8	18.6
LOS	A		A	A	D	B
Approach Delay	5.7			6.2	40.4	
Approach LOS	A			A	D	
Queue Length 50th (m)	33.0		0.1	28.5	13.6	0.0
Queue Length 95th (m)	48.9		m0.3	45.2	22.7	3.6
Internal Link Dist (m)	223.1			201.3	159.6	
Turn Bay Length (m)			13.4			
Base Capacity (vph)	2430		165	2468	463	406
Starvation Cap Reductn	0		0	50	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.67		0.03	0.78	0.16	0.02

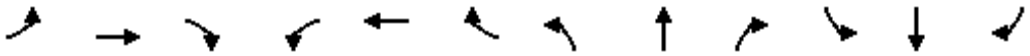
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 64 (64%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 6.8	Intersection LOS: A
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 133: Cumberland Dr. & Lakeshore Rd E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1471	18	7	1760	25	8	1	9	15	1	17
Future Volume (vph)	24	1471	18	7	1760	25	8	1	9	15	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.96			0.96	
Frt		0.998			0.998			0.932			0.930	
Flt Protected		0.999						0.978			0.978	
Satd. Flow (prot)	0	3300	0	0	3339	0	0	1736	0	0	1676	0
Flt Permitted		0.882			0.947			0.841			0.846	
Satd. Flow (perm)	0	2914	0	0	3162	0	0	1450	0	0	1447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			9			17	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		240.4			247.1			213.9			177.8	
Travel Time (s)		17.3			17.8			15.4			12.8	
Confl. Peds. (#/hr)	29		51	51		29	45		3	3		45
Confl. Bikes (#/hr)	1		6	6		1	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 (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	24	1471	18	7	1760	25	8	1	9	15	1	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1513	0	0	1792	0	0	18	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												

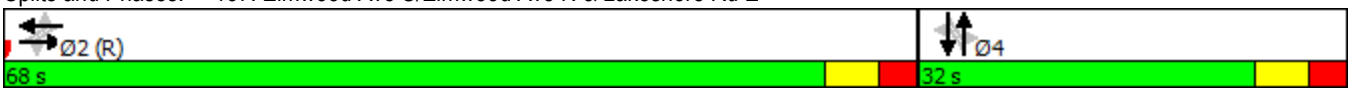


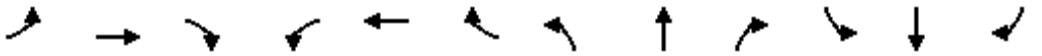
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		27.0	27.0		27.0	27.0	
Total Split (s)	68.0	68.0		68.0	68.0		32.0	32.0		32.0	32.0	
Total Split (%)	68.0%	68.0%		68.0%	68.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	61.0	61.0		61.0	61.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	2.0	2.0		2.0	2.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	27	27		27	27		16	16		16	16	
Act Effct Green (s)		82.0			82.0			12.8			12.8	
Actuated g/C Ratio		0.82			0.82			0.13			0.13	
v/c Ratio		0.63			0.69			0.09			0.17	
Control Delay		8.8			6.7			24.6			23.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.8			6.7			24.6			23.4	
LOS		A			A			C			C	
Approach Delay		8.8			6.7			24.6			23.4	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		56.0			32.7			1.7			2.9	
Queue Length 95th (m)		128.2			66.0			7.3			10.5	
Internal Link Dist (m)		216.4			223.1			189.9			153.8	
Turn Bay Length (m)												
Base Capacity (vph)		2389			2593			369			374	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.63			0.69			0.05			0.09	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 64 (64%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	

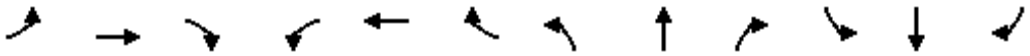
Intersection Signal Delay: 7.9	Intersection LOS: A
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 137: Elmwood Ave S/Elmwood Ave N & Lakeshore Rd E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	1078	18	132	1386	207	43	216	159	300	198	272
Future Volume (vph)	224	1078	18	132	1386	207	43	216	159	300	198	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	24.5		24.5	28.8		26.1	26.1		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.98		0.95	0.97		0.97		0.92
Frt		0.998			0.981			0.936				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1646	3483	0	1711	3370	0	1785	1720	0	1785	1921	1536
Flt Permitted	0.068			0.208			0.594			0.381		
Satd. Flow (perm)	118	3483	0	370	3370	0	1061	1720	0	697	1921	1414
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			16			33				25
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		79.5			240.4			184.5			87.0	
Travel Time (s)		5.7			17.3			13.3			6.3	
Confl. Peds. (#/hr)	56		32	32		56	53		45	45		53
Confl. Bikes (#/hr)	3		8	8		3			1	1		
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%	1%	0%	2%	1%	0%	0%	1%	2%	0%	0%	4%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	224	1078	18	132	1386	207	43	216	159	300	198	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	1096	0	132	1593	0	43	375	0	300	198	272
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)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	2
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	13.4
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			4			8	5
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		6	6		4	4		8	8	5
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	5.0
Minimum Split (s)	8.0	36.0		36.0	36.0		37.0	37.0		37.0	37.0	8.0
Total Split (s)	12.0	74.0		62.0	62.0		56.0	56.0		56.0	56.0	12.0
Total Split (%)	9.2%	56.9%		47.7%	47.7%		43.1%	43.1%		43.1%	43.1%	9.2%
Maximum Green (s)	9.0	68.0		56.0	56.0		49.0	49.0		49.0	49.0	9.0
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	3.0
All-Red Time (s)	0.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		6.0	6.0		7.0	7.0		7.0	7.0	3.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		Min	Min		Min	Min	None
Walk Time (s)		12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		18.0		18.0	18.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)		30		30	30		33	33		33	33	
Act Effct Green (s)	71.0	68.0		56.0	56.0		49.0	49.0		49.0	49.0	62.0
Actuated g/C Ratio	0.55	0.52		0.43	0.43		0.38	0.38		0.38	0.38	0.48
v/c Ratio	1.32	0.60		0.83	1.09		0.11	0.56		1.15	0.27	0.39
Control Delay	192.2	28.6		73.0	87.8		27.4	32.9		138.2	29.4	20.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	192.2	28.6		73.0	87.8		27.4	32.9		138.2	29.4	20.1
LOS	F	C		E	F		C	C		F	C	C
Approach Delay		56.4			86.7			32.3			68.5	
Approach LOS		E			F			C			E	
Queue Length 50th (m)	~59.7	103.4		29.5	~240.8		7.1	68.7		~89.8	35.0	37.0
Queue Length 95th (m)	m#69.9	m108.1		#68.3	#284.1		15.6	100.3		#145.6	53.7	57.1
Internal Link Dist (m)		55.5			216.4			160.5			63.0	
Turn Bay Length (m)	24.5			28.8			26.1			30.0		
Base Capacity (vph)	170	1822		159	1460		399	668		262	724	695
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.32	0.60		0.83	1.09		0.11	0.56		1.15	0.27	0.39

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 105	

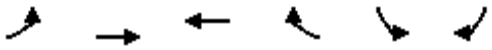
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.32	
Intersection Signal Delay: 68.6	Intersection LOS: E
Intersection Capacity Utilization 119.0%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

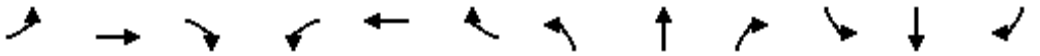
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 140: St Lawrence Dr/Hurontario St & Lakeshore Rd E



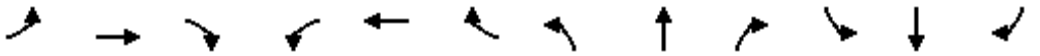
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	52	1309	1668	55	5	39
Future Volume (vph)	52	1309	1668	55	5	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.5	3.5
Storage Length (m)	30.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.995			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1601	3256	3463	0	1785	1597
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1601	3256	3463	0	1785	1597
Link Speed (k/h)		50	50		50	
Link Distance (m)		97.3	79.5		90.2	
Travel Time (s)		7.0	5.7		6.5	
Confl. Peds. (#/hr)	111			111	4	7
Confl. Bikes (#/hr)	3			3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	3%	0%	44%	0%	0%
Parking (#/hr)		0				
Adj. Flow (vph)	52	1309	1668	55	5	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	1309	1723	0	5	39
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.3	3.3		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.04	1.10	1.03	1.04	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			

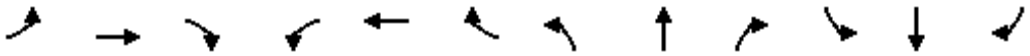


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1311	6	13	1684	54	2	0	33	8	1	46
Future Volume (vph)	50	1311	6	13	1684	54	2	0	33	8	1	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.995			0.873			0.853	
Flt Protected		0.998						0.997		0.950		
Satd. Flow (prot)	0	3250	0	0	3337	0	0	1635	0	1785	1603	0
Flt Permitted		0.998						0.997		0.950		
Satd. Flow (perm)	0	3250	0	0	3337	0	0	1635	0	1785	1603	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		132.7			97.3			108.2			83.0	
Travel Time (s)		9.6			7.0			7.8			6.0	
Confl. Peds. (#/hr)	151		92	92		151	15		13	13		15
Confl. Bikes (#/hr)	2		7	7		2						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		0			0							
Adj. Flow (vph)	50	1311	6	13	1684	54	2	0	33	8	1	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1367	0	0	1751	0	0	35	0	8	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 87.7%		ICU Level of Service E	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1308	65	22	1615	43	51	28	18	71	32	264
Future Volume (vph)	69	1308	65	22	1615	43	51	28	18	71	32	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		25.0	0.0		25.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.95	0.89		0.74	0.90	
Frt		0.993			0.996			0.941			0.866	
Flt Protected		0.998			0.999		0.950			0.950		
Satd. Flow (prot)	0	3287	0	0	3308	0	1785	1607	0	1284	1414	0
Flt Permitted		0.643			0.908		0.252			0.727		
Satd. Flow (perm)	0	2118	0	0	3007	0	451	1607	0	728	1414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			5			18			34	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		105.6			132.7			110.4			118.4	
Travel Time (s)		7.6			9.6			7.9			8.5	
Confl. Peds. (#/hr)	102		7	7		102	58		149	149		58
Confl. Bikes (#/hr)	5		6	6		5			1	1		
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%	1%	0%	0%	0%	0%	0%	0%	0%	39%	0%	6%
Parking (#/hr)		0			0							
Adj. Flow (vph)	69	1308	65	22	1615	43	51	28	18	71	32	264
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1442	0	0	1680	0	51	46	0	71	296	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	



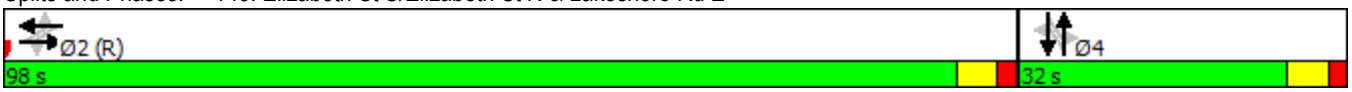
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		27.0	27.0		27.0	27.0	
Total Split (s)	98.0	98.0		98.0	98.0		32.0	32.0		32.0	32.0	
Total Split (%)	75.4%	75.4%		75.4%	75.4%		24.6%	24.6%		24.6%	24.6%	
Maximum Green (s)	92.0	92.0		92.0	92.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	37	37		37	37		69	69		69	69	
Act Effct Green (s)		92.3			92.3		25.7	25.7		25.7	25.7	
Actuated g/C Ratio		0.71			0.71		0.20	0.20		0.20	0.20	
v/c Ratio		0.96			0.79		0.57	0.14		0.49	0.96	
Control Delay		6.1			5.9		73.6	30.4		59.4	88.7	
Queue Delay		43.8			9.6		5.1	0.0		0.0	42.4	
Total Delay		49.9			15.5		78.8	30.4		59.4	131.1	
LOS		D			B		E	C		E	F	
Approach Delay		49.9			15.5			55.8			117.3	
Approach LOS		D			B			E			F	
Queue Length 50th (m)		15.8			26.8		11.9	5.9		16.3	68.0	
Queue Length 95th (m)		m9.9			m29.6		#30.3	16.7		32.8	#124.2	
Internal Link Dist (m)		81.6			108.7			86.4			94.4	
Turn Bay Length (m)												
Base Capacity (vph)		1505			2135		90	335		145	310	
Starvation Cap Reductn		438			0		0	0		0	0	
Spillback Cap Reductn		0			444		13	0		0	46	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.35			0.99		0.66	0.14		0.49	1.12	

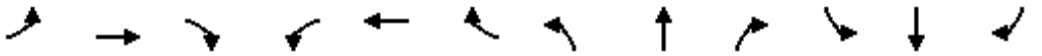
Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 40.9	Intersection LOS: D
Intersection Capacity Utilization 133.3%	ICU Level of Service H
Analysis Period (min) 15	

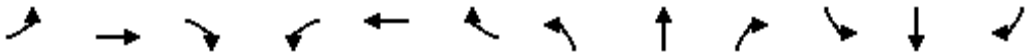
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 143: Elizabeth St S/Elizabeth St N & Lakeshore Rd E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	1459	203	31	2007	18	198	25	101	32	15	284
Future Volume (vph)	152	1459	203	31	2007	18	198	25	101	32	15	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	0.0		0.0	0.0		0.0	8.3		0.0	0.0		25.0
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		0.97	0.95		0.95	0.93	
Frt		0.983			0.999			0.880			0.858	
Flt Protected		0.996			0.999		0.950			0.950		
Satd. Flow (prot)	0	3155	0	0	3276	0	1785	1598	0	1767	1514	0
Flt Permitted		0.481			0.775		0.329			0.664		
Satd. Flow (perm)	0	1524	0	0	2542	0	600	1598	0	1176	1514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			1			50			14	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		376.7			105.6			148.7			96.1	
Travel Time (s)		27.1			7.6			10.7			6.9	
Confl. Peds. (#/hr)	41		21	21		41	32		28	28		32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Bus Blockages (#/hr)	0	0	7	0	0	7	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	152	1459	203	31	2007	18	198	25	101	32	15	284
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1814	0	0	2056	0	198	126	0	32	299	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			-10.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		26.0	26.0		26.0	26.0	
Total Split (s)	93.0	93.0		93.0	93.0		37.0	37.0		37.0	37.0	
Total Split (%)	71.5%	71.5%		71.5%	71.5%		28.5%	28.5%		28.5%	28.5%	
Maximum Green (s)	85.0	85.0		85.0	85.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.0			8.0		7.0	7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	21	21		21	21		20	20		20	20	
Act Effct Green (s)		85.0			85.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio		0.65			0.65		0.23	0.23		0.23	0.23	
v/c Ratio		2.67dl			1.24		1.43	0.31		0.12	0.83	
Control Delay		388.6			127.3		268.9	27.0		41.1	65.5	
Queue Delay		0.1			0.0		0.0	0.0		0.0	0.0	
Total Delay		388.7			127.3		268.9	27.0		41.1	65.5	
LOS		F			F		F	C		D	E	
Approach Delay		388.7			127.3			174.8			63.1	
Approach LOS		F			F			F			E	
Queue Length 50th (m)		~369.9			~340.7		~68.5	15.8		6.5	70.2	
Queue Length 95th (m)		#412.8			m#382.7		#116.4	33.6		15.5	#116.6	
Internal Link Dist (m)		352.7			81.6			124.7			72.1	
Turn Bay Length (m)							8.3					
Base Capacity (vph)		1004			1662		138	407		271	360	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		16			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.84			1.24		1.43	0.31		0.12	0.83	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 130	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.81	
Intersection Signal Delay: 230.8	Intersection LOS: F
Intersection Capacity Utilization 165.4%	ICU Level of Service H
Analysis Period (min) 15	

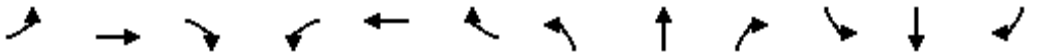
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

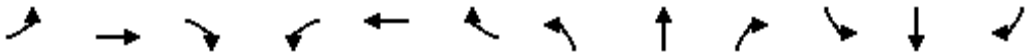
m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 144: Stavebank Rd S & Lakeshore Rd E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	1451	5	21	1888	7	7	1	17	18	1	15
Future Volume (vph)	18	1451	5	21	1888	7	7	1	17	18	1	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	8.6		0.0	10.2		0.0	18.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.99	0.97		0.98	0.98	
Frt		0.999			0.999			0.858			0.859	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3490	0	1745	3524	0	1785	1593	0	1785	1610	0
Flt Permitted	0.082			0.155			0.747			0.746		
Satd. Flow (perm)	151	3490	0	285	3524	0	1384	1593	0	1371	1610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			17			15	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		183.2			376.7			125.4			106.5	
Travel Time (s)		13.2			27.1			9.0			9.6	
Confl. Peds. (#/hr)	58		25	25		58	11		17	17		11
Confl. Bikes (#/hr)			6	6					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 (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	18	1451	5	21	1888	7	7	1	17	18	1	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	1456	0	21	1895	0	7	18	0	18	16	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	



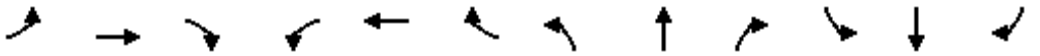
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		29.0	29.0		29.0	29.0	
Total Split (s)	71.0	71.0		71.0	71.0		29.0	29.0		29.0	29.0	
Total Split (%)	71.0%	71.0%		71.0%	71.0%		29.0%	29.0%		29.0%	29.0%	
Maximum Green (s)	65.0	65.0		65.0	65.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	28	28		28	28		10	10		10	10	
Act Effct Green (s)	77.0	77.0		77.0	77.0		11.0	11.0		11.0	11.0	
Actuated g/C Ratio	0.77	0.77		0.77	0.77		0.11	0.11		0.11	0.11	
v/c Ratio	0.16	0.54		0.10	0.70		0.05	0.09		0.12	0.08	
Control Delay	8.6	6.3		5.6	8.6		36.4	16.9		38.7	17.8	
Queue Delay	0.0	0.4		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.6	6.7		5.6	8.6		36.4	16.9		38.7	17.8	
LOS	A	A		A	A		D	B		D	B	
Approach Delay		6.7			8.6			22.4			28.9	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	0.6	39.0		0.7	63.8		1.3	0.2		3.3	0.2	
Queue Length 95th (m)	5.2	100.8		4.6	166.1		4.6	5.7		8.4	5.4	
Internal Link Dist (m)		159.2			352.7			101.4			82.5	
Turn Bay Length (m)	8.6			10.2			18.0			40.0		
Base Capacity (vph)	116	2687		219	2713		318	379		315	381	
Starvation Cap Reductn	0	662		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.72		0.10	0.70		0.02	0.05		0.06	0.04	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle: 80

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 146: John St S/John St N & Lakeshore Rd W/Lakeshore Rd E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	1113	32	66	1514	628	96	163	103	287	110	84
Future Volume (vph)	148	1113	32	66	1514	628	96	163	103	287	110	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	28.8		0.0	53.3		28.9	15.0		0.0	58.1		13.2
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00		0.99	0.98		0.98	0.99		0.99	0.99	
Frt		0.996			0.956			0.942			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	3205	0	1678	3015	0	1750	1758	0	3395	1736	0
Flt Permitted	0.051			0.226			0.636			0.950		
Satd. Flow (perm)	90	3205	0	396	3015	0	1152	1758	0	3350	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			71			20			28	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		297.8			183.2			192.4			199.9	
Travel Time (s)		21.4			13.2			13.9			14.4	
Confl. Peds. (#/hr)	15		15	15		15	15		8	8		15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	148	1113	32	66	1514	628	96	163	103	287	110	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	1145	0	66	2142	0	96	266	0	287	194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.10	1.04	1.04	1.10	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Prot	NA	
Protected Phases	5	2			6			4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		6	6		4	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		8.0	8.0		5.0	8.0	
Minimum Split (s)	8.0	25.0		25.0	25.0		36.0	36.0		10.0	36.0	
Total Split (s)	8.0	90.0		82.0	82.0		36.0	36.0		14.0	50.0	
Total Split (%)	5.7%	64.3%		58.6%	58.6%		25.7%	25.7%		10.0%	35.7%	
Maximum Green (s)	5.0	84.0		76.0	76.0		29.0	29.0		9.0	43.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0		7.0	7.0		5.0	7.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		8.0		8.0	8.0		12.0	12.0			12.0	
Flash Dont Walk (s)		11.0		11.0	11.0		17.0	17.0			17.0	
Pedestrian Calls (#/hr)		10		10	10		8	8			8	
Act Effct Green (s)	91.9	88.9		76.0	76.0		24.1	24.1		9.0	38.1	
Actuated g/C Ratio	0.66	0.64		0.54	0.54		0.17	0.17		0.06	0.27	
v/c Ratio	0.87	0.56		0.31	1.28		0.48	0.83		1.32	0.39	
Control Delay	72.1	16.4		22.5	161.2		59.8	73.2		219.6	36.9	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay	72.1	16.4		22.5	161.5		59.8	73.2		219.6	36.9	
LOS	E	B		C	F		E	E		F	D	
Approach Delay		22.8			157.3			69.6			145.9	
Approach LOS		C			F			E			F	
Queue Length 50th (m)	25.8	90.7		9.7	~392.3		24.1	66.5		~52.6	37.1	
Queue Length 95th (m)	#81.7	118.7		21.4	#433.1		41.2	95.2		#81.7	57.1	
Internal Link Dist (m)		273.8			159.2			168.4			175.9	
Turn Bay Length (m)	28.8			53.3			15.0			58.1		
Base Capacity (vph)	171	2036		214	1669		238	380		218	552	
Starvation Cap Reductn	0	0		0	155		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.87	0.56		0.31	1.41		0.40	0.70		1.32	0.35	

Intersection Summary

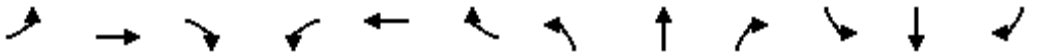
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.32	
Intersection Signal Delay: 108.7	Intersection LOS: F
Intersection Capacity Utilization 114.4%	ICU Level of Service H
Analysis Period (min) 15	

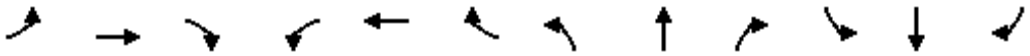
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 148: Mississauga Rd S/Mississauga Rd N & Lakeshore Rd W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	1469	57	115	1900	108	144	110	58	6	0	3
Future Volume (vph)	7	1469	57	115	1900	108	144	110	58	6	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.5	3.5	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	31.2		0.0	80.0		15.2	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.992			0.948			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3473	0	1750	3502	0	1750	1746	0	1785	1597	0
Flt Permitted	0.065			0.125			0.756			0.616		
Satd. Flow (perm)	119	3473	0	230	3502	0	1393	1746	0	1157	1597	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			11			28			48	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		215.5			297.8			103.3			97.1	
Travel Time (s)		15.5			21.4			7.4			7.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	2%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	7	1469	57	115	1900	108	144	110	58	6	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1526	0	115	2008	0	144	168	0	6	3	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.01	1.01	1.03	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		1	2		1	2		2	2	
Detector Template				Left			Left	Thru			Thru	
Leading Detector (m)	15.2	15.2		2.0	15.2		2.0	10.0		15.2	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		2.0	1.8		2.0	0.6		1.8	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4			13.4			9.4		13.4	9.4	
Detector 2 Size(m)	1.8	1.8			1.8			0.6		1.8	0.6	
Detector 2 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	

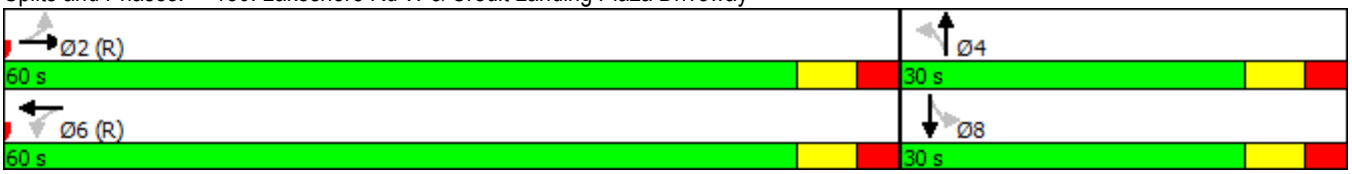


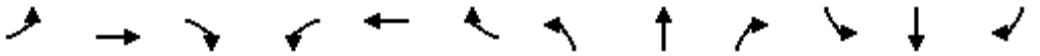
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	30.0	30.0		23.0	23.0		30.0	30.0		26.0	26.0	
Total Split (s)	60.0	60.0		60.0	60.0		30.0	30.0		30.0	30.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	53.0	53.0		53.0	53.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		5.0	5.0		9.0	9.0		5.0	5.0	
Flash Dont Walk (s)	12.0	12.0		11.0	11.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	61.5	61.5		61.5	61.5		14.5	14.5		14.5	14.5	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.16	0.16		0.16	0.16	
v/c Ratio	0.09	0.64		0.74	0.84		0.64	0.55		0.03	0.01	
Control Delay	9.4	10.4		43.7	16.1		47.6	34.7		29.0	0.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.4	10.4		43.7	16.1		47.6	34.7		29.0	0.0	
LOS	A	B		D	B		D	C		C	A	
Approach Delay		10.4			17.6			40.6			19.3	
Approach LOS		B			B			D			B	
Queue Length 50th (m)	0.4	68.0		11.0	117.5		23.5	22.3		0.9	0.0	
Queue Length 95th (m)	2.6	110.3		#48.4	#219.2		39.2	38.5		3.9	0.0	
Internal Link Dist (m)		191.5			273.8			79.3			73.1	
Turn Bay Length (m)	31.2			80.0			20.0					
Base Capacity (vph)	81	2373		156	2394		355	467		295	443	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.64		0.74	0.84		0.41	0.36		0.02	0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 16.6		Intersection LOS: B	

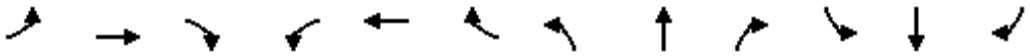
Intersection Capacity Utilization 94.8% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 150: Lakeshore Rd W & Credit Landing Plaza Driveway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	1153	97	1	1971	1	114	86	45	1	0	18
Future Volume (vph)	25	1153	97	1	1971	1	114	86	45	1	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.5	3.5	3.4	3.3	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	25.0		0.0	25.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		1.00				0.98	
Frt		0.988						0.948			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	3412	0	1750	3530	0	1750	1746	0	1785	1573	0
Flt Permitted	0.111			0.162			0.746			0.673		
Satd. Flow (perm)	200	3412	0	298	3530	0	1370	1746	0	1264	1573	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26						43			18	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		207.0			215.5			126.9			141.2	
Travel Time (s)		14.9			15.5			9.1			10.2	
Confl. Peds. (#/hr)	2		3	3		2	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 (%)	2%	2%	2%	2%	0%	0%	2%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	25	1153	97	1	1971	1	114	86	45	1	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	1250	0	1	1972	0	114	131	0	1	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.01	1.01	1.03	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



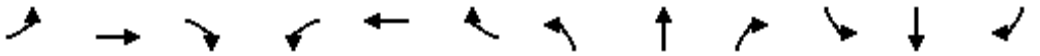
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	35.9	35.9		35.9	35.9		16.1	16.1		16.1	16.1	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.27	0.27		0.27	0.27	
v/c Ratio	0.21	0.61		0.01	0.93		0.31	0.26		0.00	0.04	
Control Delay	10.7	9.0		5.0	21.6		20.5	13.8		16.0	8.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.7	9.0		5.0	21.6		20.5	13.8		16.0	8.7	
LOS	B	A		A	C		C	B		B	A	
Approach Delay		9.0			21.6			16.9			9.1	
Approach LOS		A			C			B			A	
Queue Length 50th (m)	1.1	38.4		0.1	89.5		10.0	7.4		0.1	0.0	
Queue Length 95th (m)	5.1	54.3		0.5	#152.5		21.6	18.8		1.1	3.9	
Internal Link Dist (m)		183.0			191.5			102.9			117.2	
Turn Bay Length (m)	25.0			25.0			20.0			20.0		
Base Capacity (vph)	120	2057		178	2118		367	499		339	434	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.61		0.01	0.93		0.31	0.26		0.00	0.04	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

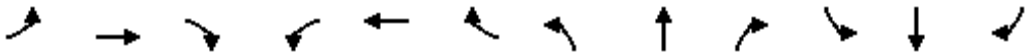
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 16.6	Intersection LOS: B
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 151: Lakeshore Rd W & Benson Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1460	56	5	1674	77	40	12	1	78	0	38
Future Volume (vph)	28	1460	56	5	1674	77	40	12	1	78	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	0.0		0.0	0.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.97			0.96	
Frt		0.995			0.993			0.997			0.956	
Flt Protected		0.999						0.964			0.967	
Satd. Flow (prot)	0	3402	0	0	3428	0	0	1845	0	0	1744	0
Flt Permitted		0.871			0.950			0.732			0.766	
Satd. Flow (perm)	0	2966	0	0	3256	0	0	1364	0	0	1350	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			9			1			33	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		364.0			207.0			311.5			310.5	
Travel Time (s)		26.2			14.9			22.4			22.4	
Confl. Peds. (#/hr)	14		7	7		14	28		23	23		28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	28	1460	56	5	1674	77	40	12	1	78	0	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1544	0	0	1756	0	0	53	0	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	

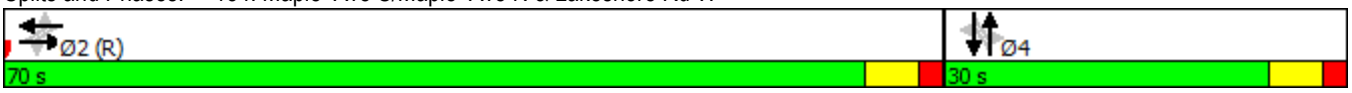


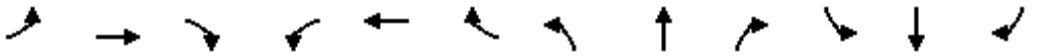
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0	
Total Split (s)	70.0	70.0		70.0	70.0		30.0	30.0		30.0	30.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	64.0	64.0		64.0	64.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	7	7		7	7		17	17		17	17	
Act Effct Green (s)		74.7			74.7			13.3			13.3	
Actuated g/C Ratio		0.75			0.75			0.13			0.13	
v/c Ratio		0.70			0.72			0.29			0.56	
Control Delay		9.7			10.0			40.5			37.9	
Queue Delay		0.0			0.6			0.0			0.0	
Total Delay		9.7			10.6			40.5			37.9	
LOS		A			B			D			D	
Approach Delay		9.7			10.6			40.5			37.9	
Approach LOS		A			B			D			D	
Queue Length 50th (m)		62.6			74.2			9.4			15.4	
Queue Length 95th (m)		116.3			135.0			19.3			30.6	
Internal Link Dist (m)		340.0			183.0			287.5			286.5	
Turn Bay Length (m)												
Base Capacity (vph)		2216			2433			328			349	
Starvation Cap Reductn		0			295			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.70			0.82			0.16			0.33	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 77 (77%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

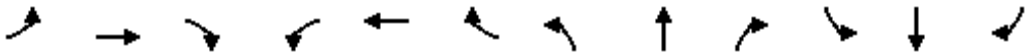
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 154: Maple Ave S/Maple Ave N & Lakeshore Rd W





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	1571	1	8	1709	84	2	0	10	48	0	4
Future Volume (vph)	13	1571	1	8	1709	84	2	0	10	48	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.5	3.5
Storage Length (m)	30.0		0.0	77.2		0.0	6.0		0.0	6.7		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.99	0.97		0.98	0.97	
Frt					0.993			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1694	3427	0	1711	3430	0	1785	1587	0	1785	1557	0
Flt Permitted	0.079			0.118			0.755			0.751		
Satd. Flow (perm)	141	3427	0	212	3430	0	1399	1587	0	1388	1557	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					10			55			55	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		270.9			364.0			85.8			137.2	
Travel Time (s)		19.5			26.2			6.2			9.9	
Confl. Peds. (#/hr)	10		15	15		10	13		16	16		13
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	13	1571	1	8	1709	84	2	0	10	48	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1572	0	8	1793	0	2	10	0	48	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.04	1.04	1.03	1.04	1.01	0.99	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4		13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	



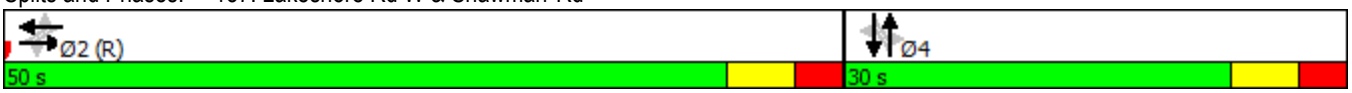
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		30.0	30.0		30.0	30.0	
Total Split (s)	50.0	50.0		50.0	50.0		30.0	30.0		30.0	30.0	
Total Split (%)	62.5%	62.5%		62.5%	62.5%		37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	43.0	43.0		43.0	43.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	9	9		9	9		10	10		10	10	
Act Effct Green (s)	54.7	54.7		54.7	54.7		11.3	11.3		11.3	11.3	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.14	0.14		0.14	0.14	
v/c Ratio	0.14	0.67		0.06	0.76		0.01	0.04		0.24	0.01	
Control Delay	11.4	10.7		7.9	13.1		25.0	0.3		31.2	0.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.4	10.7		7.9	13.1		25.0	0.3		31.2	0.0	
LOS	B	B		A	B		C	A		C	A	
Approach Delay		10.7			13.1			4.4			28.8	
Approach LOS		B			B			A			C	
Queue Length 50th (m)	0.5	52.1		0.3	66.7		0.3	0.0		6.9	0.0	
Queue Length 95th (m)	4.8	132.1		2.7	#188.0		1.8	0.0		13.1	0.0	
Internal Link Dist (m)		246.9			340.0			61.8			113.2	
Turn Bay Length (m)	30.0			77.2			6.0			6.7		
Base Capacity (vph)	96	2342		144	2347		402	495		399	486	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.67		0.06	0.76		0.00	0.02		0.12	0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 157: Lakeshore Rd W & Shawmarr Rd

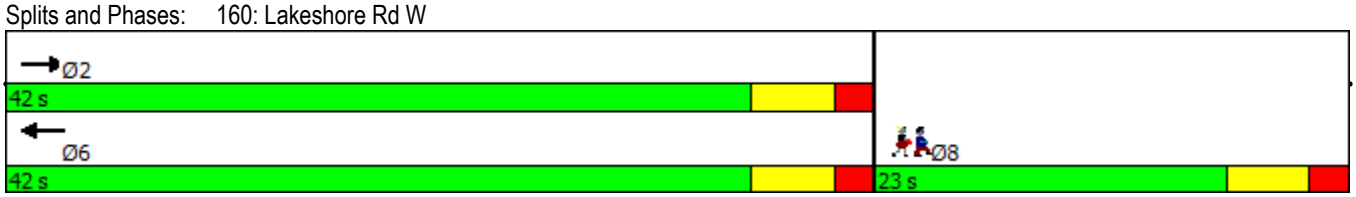


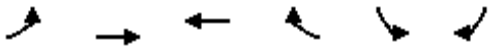
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø8
Lane Configurations							
Traffic Volume (vph)	1322	0	0	1601	0	0	
Future Volume (vph)	1322	0	0	1601	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (m)	3.4	3.3	3.3	3.4	3.5	3.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	3495	0	0	3495	0	0	
Flt Permitted							
Satd. Flow (perm)	3495	0	0	3495	0	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (k/h)	60			60	50		
Link Distance (m)	74.1			269.2	93.0		
Travel Time (s)	4.4			16.2	6.7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	1%	0%	0%	1%	2%	2%	
Adj. Flow (vph)	1322	0	0	1601	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1322	0	0	1601	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(m)	0.0			0.0	0.0		
Link Offset(m)	0.0			0.0	0.0		
Crosswalk Width(m)	4.8			4.8	4.8		
Two way Left Turn Lane							
Headway Factor	1.03	1.04	1.04	1.03	1.01	1.01	
Turning Speed (k/h)		14	24		24	14	
Number of Detectors	2			2			
Detector Template	Thru			Thru			
Leading Detector (m)	10.0			10.0			
Trailing Detector (m)	0.0			0.0			
Detector 1 Position(m)	0.0			0.0			
Detector 1 Size(m)	0.6			0.6			
Detector 1 Type	Cl+Ex			Cl+Ex			
Detector 1 Channel							
Detector 1 Extend (s)	0.0			0.0			
Detector 1 Queue (s)	0.0			0.0			
Detector 1 Delay (s)	0.0			0.0			
Detector 2 Position(m)	9.4			9.4			
Detector 2 Size(m)	0.6			0.6			
Detector 2 Type	Cl+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA			NA			
Protected Phases	2			6			8
Permitted Phases							
Detector Phase	2			6			

Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø8
Switch Phase							
Minimum Initial (s)	8.0			8.0			4.0
Minimum Split (s)	16.0			23.0			23.0
Total Split (s)	42.0			42.0			23.0
Total Split (%)	64.6%			64.6%			35%
Maximum Green (s)	36.0			36.0			17.0
Yellow Time (s)	4.0			4.0			4.0
All-Red Time (s)	2.0			2.0			2.0
Lost Time Adjust (s)	0.0			0.0			
Total Lost Time (s)	6.0			6.0			
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0			3.0			3.0
Recall Mode	None			None			None
Walk Time (s)							8.0
Flash Dont Walk (s)							9.0
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	29.1			29.1			
Actuated g/C Ratio	0.91			0.91			
v/c Ratio	0.42			0.50			
Control Delay	3.6			4.5			
Queue Delay	0.0			0.0			
Total Delay	3.6			4.5			
LOS	A			A			
Approach Delay	3.6			4.5			
Approach LOS	A			A			
Queue Length 50th (m)	0.0			0.0			
Queue Length 95th (m)	74.6			104.4			
Internal Link Dist (m)	50.1			245.2	69.0		
Turn Bay Length (m)							
Base Capacity (vph)	3183			3183			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.42			0.50			

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 32			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 4.1		Intersection LOS: A	
Intersection Capacity Utilization 49.3%		ICU Level of Service A	
Analysis Period (min) 15			

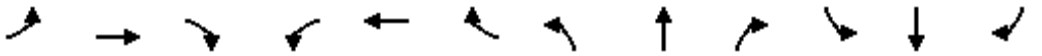
Splits and Phases: 160: Lakeshore Rd W



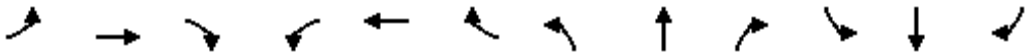


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	21	1280	1461	96	43	11
Future Volume (vph)	21	1280	1461	96	43	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.5	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.991			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	3391	3396	0	1785	1597
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	3391	3396	0	1785	1597
Link Speed (k/h)		60	60		50	
Link Distance (m)		635.6	74.1		98.7	
Travel Time (s)		38.1	4.4		7.1	
Confl. Peds. (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	3%	3%	0%	0%
Adj. Flow (vph)	21	1280	1461	96	43	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1301	1557	0	43	11
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.3	3.3		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.04	1.03	1.03	1.04	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	1124	9	9	1352	144	5	1	5	140	7	110
Future Volume (vph)	138	1124	9	9	1352	144	5	1	5	140	7	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.5	3.3	3.3	3.5	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	50.0		15.0	50.0		20.0	0.0		15.0	0.0		35.0
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00		0.96	1.00	0.98			0.99	0.99
Frt			0.850			0.850		0.875				0.850
Flt Protected	0.950			0.950			0.950				0.955	
Satd. Flow (prot)	1678	3433	1471	1711	3500	1500	1623	1502	0	0	1799	1566
Flt Permitted	0.173			0.230			0.512				0.732	
Satd. Flow (perm)	306	3433	1420	413	3500	1443	874	1502	0	0	1367	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			23			56		5				71
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		676.4			635.6			98.7			487.8	
Travel Time (s)		40.6			38.1			7.1			35.1	
Confl. Peds. (#/hr)	5		4	4		5	1		6	6		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	10%	10%	10%	2%	2%	2%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	138	1124	9	9	1352	144	5	1	5	140	7	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	1124	9	9	1352	144	5	6	0	0	147	110
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.01	1.07	1.04	1.01	1.07	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



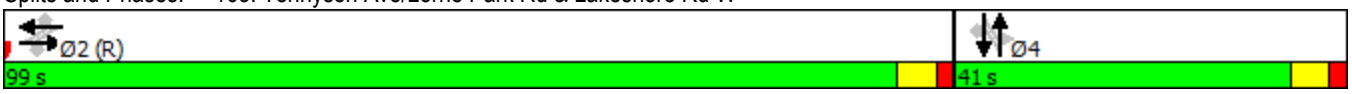
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2		2	4			4		4
Detector Phase	2	2	2	2	2	2	4	4		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	34.0	34.0		34.0	34.0	34.0
Total Split (s)	99.0	99.0	99.0	99.0	99.0	99.0	41.0	41.0		41.0	41.0	41.0
Total Split (%)	70.7%	70.7%	70.7%	70.7%	70.7%	70.7%	29.3%	29.3%		29.3%	29.3%	29.3%
Maximum Green (s)	93.0	93.0	93.0	93.0	93.0	93.0	35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	None
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	11.0	11.0		11.0	11.0	11.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3	3	3		3	3	3
Act Effct Green (s)	107.7	107.7	107.7	107.7	107.7	107.7	20.3	20.3			20.3	20.3
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.77	0.77	0.14	0.14			0.14	0.14
v/c Ratio	0.59	0.43	0.01	0.03	0.50	0.13	0.04	0.03			0.74	0.39
Control Delay	25.6	7.1	0.2	5.4	7.4	3.3	48.0	29.7			78.3	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	25.6	7.1	0.2	5.4	7.4	3.3	48.0	29.7			78.3	24.3
LOS	C	A	A	A	A	A	D	C			E	C
Approach Delay		9.1			7.0			38.0			55.2	
Approach LOS		A			A			D			E	
Queue Length 50th (m)	16.4	93.5	0.0	0.5	64.6	5.2	1.2	0.3			39.5	9.6
Queue Length 95th (m)	58.4	25.5	m0.2	2.4	98.6	13.3	5.0	4.1			59.6	25.7
Internal Link Dist (m)		652.4			611.6			74.7			463.8	
Turn Bay Length (m)	50.0		15.0	50.0		20.0						35.0
Base Capacity (vph)	235	2640	1097	317	2692	1122	218	379			341	439
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	0.59	0.43	0.01	0.03	0.50	0.13	0.02	0.02			0.43	0.25

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 73 (52%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 12.1	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

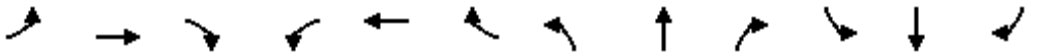
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 163: Tennyson Ave/Lorne Park Rd & Lakeshore Rd W

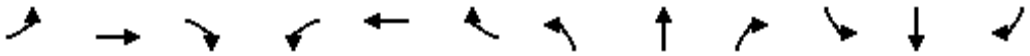


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1334	19	18	1466	13	15
Future Volume (vph)	1334	19	18	1466	13	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.3	3.3	3.5	3.5	3.5
Storage Length (m)		0.0	70.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.998				0.928	
Flt Protected			0.950		0.977	
Satd. Flow (prot)	3459	0	1711	3500	1654	0
Flt Permitted			0.950		0.977	
Satd. Flow (perm)	3459	0	1711	3500	1654	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	410.3			676.4	163.4	
Travel Time (s)	24.6			40.6	11.8	
Confl. Peds. (#/hr)						3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	1334	19	18	1466	13	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1353	0	18	1466	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane	Yes					
Headway Factor	1.01	1.04	1.04	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 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)	69	1055	68	49	1389	75	34	12	15	34	5	40
Future Volume (vph)	69	1055	68	49	1389	75	34	12	15	34	5	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.5	3.3	3.3	3.5	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	40.0		0.0	50.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		0.98	0.99		0.99	0.97	
Frt		0.991			0.992			0.917			0.867	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1694	3426	0	1728	3499	0	1700	1661	0	1767	1598	0
Flt Permitted	0.163			0.242			0.728			0.740		
Satd. Flow (perm)	291	3426	0	439	3499	0	1274	1661	0	1368	1598	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			9			15			40	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		280.4			410.3			279.5			170.0	
Travel Time (s)		16.8			24.6			20.1			12.2	
Confl. Peds. (#/hr)	7		8	8		7	15		4	4		15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	5%	5%	5%	1%	1%	1%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	69	1055	68	49	1389	75	34	12	15	34	5	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	1123	0	49	1464	0	34	27	0	34	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.04	1.01	1.04	1.04	1.01	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

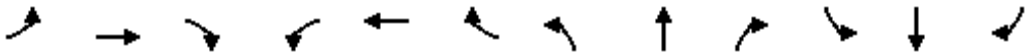


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		33.0	33.0		33.0	33.0	
Total Split (s)	104.0	104.0		104.0	104.0		36.0	36.0		36.0	36.0	
Total Split (%)	74.3%	74.3%		74.3%	74.3%		25.7%	25.7%		25.7%	25.7%	
Maximum Green (s)	98.0	98.0		98.0	98.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	5	5		5	5		7	7		7	7	
Act Effct Green (s)	119.4	119.4		119.4	119.4		12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.85	0.85		0.85	0.85		0.09	0.09		0.09	0.09	
v/c Ratio	0.28	0.38		0.13	0.49		0.30	0.17		0.28	0.25	
Control Delay	15.6	10.3		1.9	3.1		63.1	33.7		62.0	21.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.6	10.3		1.9	3.1		63.1	33.7		62.0	21.1	
LOS	B	B		A	A		E	C		E	C	
Approach Delay		10.6			3.1			50.1			38.7	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	8.2	76.3		0.2	2.7		9.2	3.2		9.2	1.3	
Queue Length 95th (m)	28.7	147.6		5.7	142.2		18.0	11.2		17.9	11.9	
Internal Link Dist (m)		256.4			386.3			255.5			146.0	
Turn Bay Length (m)	40.0			50.0			15.0			15.0		
Base Capacity (vph)	248	2923		374	2985		273	367		293	373	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.28	0.38		0.13	0.49		0.12	0.07		0.12	0.12	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 6 (4%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

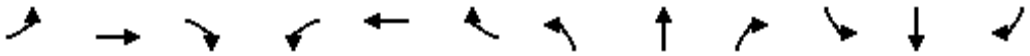
Splits and Phases: 170: Silver Birch Trail & Lakeshore Rd W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1191	5	0	1342	8	1	2	0	10	0	50
Future Volume (vph)	66	1191	5	0	1342	8	1	2	0	10	0	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.5	3.3	3.3	3.5	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	35.0		0.0	60.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.999						0.887	
Flt Protected	0.950							0.984			0.992	
Satd. Flow (prot)	1711	3496	0	1801	3496	0	0	1139	0	0	1690	0
Flt Permitted	0.950							0.984			0.992	
Satd. Flow (perm)	1711	3496	0	1801	3496	0	0	1139	0	0	1690	0
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		444.2			280.4			89.5			152.9	
Travel Time (s)		26.7			16.8			6.4			11.0	
Confl. Peds. (#/hr)	9					9	8		18	18		8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	66%	66%	66%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	66	1191	5	0	1342	8	1	2	0	10	0	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	1196	0	0	1350	0	0	3	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.04	1.01	1.04	1.04	1.01	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.9%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1137	96	41	1356	4	91	7	39	3	2	8
Future Volume (vph)	12	1137	96	41	1356	4	91	7	39	3	2	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		0.0	30.0		0.0	0.0		15.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00				0.98		1.00	
Frt		0.988							0.850		0.917	
Flt Protected	0.950			0.950				0.956			0.989	
Satd. Flow (prot)	1658	3374	0	1691	3499	0	0	1749	1521	0	1742	0
Flt Permitted	0.177			0.207				0.732			0.929	
Satd. Flow (perm)	309	3374	0	368	3499	0	0	1339	1490	0	1634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15							38		8	
Link Speed (k/h)		50			60			40			50	
Link Distance (m)		249.8			444.2			340.2			83.0	
Travel Time (s)		18.0			26.7			30.6			6.0	
Confl. Peds. (#/hr)	5		11	11		5			4	4		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	5%	5%	5%	0%	0%	0%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	12	1137	96	41	1356	4	91	7	39	3	2	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1233	0	41	1360	0	0	98	39	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.06	1.06	1.01	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



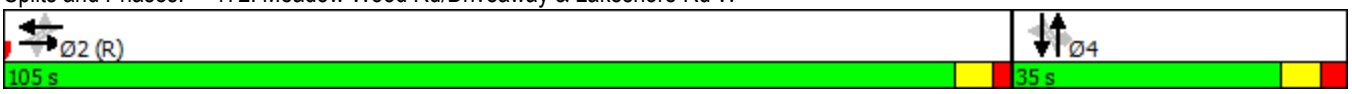
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		26.0	26.0	26.0	26.0	26.0	
Total Split (s)	105.0	105.0		105.0	105.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)	75.0%	75.0%		75.0%	75.0%		25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	99.0	99.0		99.0	99.0		28.0	28.0	28.0	28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			7.0	7.0		7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	6	6		6	6		2	2	2	2	2	
Act Effct Green (s)	111.5	111.5		111.5	111.5			15.5	15.5		15.5	
Actuated g/C Ratio	0.80	0.80		0.80	0.80			0.11	0.11		0.11	
v/c Ratio	0.05	0.46		0.14	0.49			0.66	0.20		0.07	
Control Delay	6.4	7.7		3.7	7.1			79.5	18.3		33.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	6.4	7.8		3.7	7.1			79.5	18.3		33.9	
LOS	A	A		A	A			E	B		C	
Approach Delay		7.8			7.0			62.0			33.9	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	1.2	71.4		3.2	99.3			26.4	0.3		1.3	
Queue Length 95th (m)	m2.1	48.5		m1.4	42.3			43.9	10.7		7.5	
Internal Link Dist (m)		225.8			420.2			316.2			59.0	
Turn Bay Length (m)	15.0			30.0					15.0			
Base Capacity (vph)	245	2689		292	2785			267	328		333	
Starvation Cap Reductn	0	152		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.05	0.49		0.14	0.49			0.37	0.12		0.04	

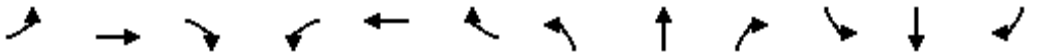
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

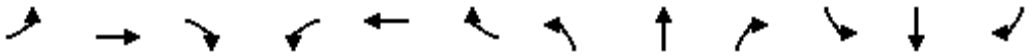
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 172: Meadow Wood Rd/Driveaway & Lakeshore Rd W





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	1196	20	2	1362	39	34	7	4	46	4	258
Future Volume (vph)	243	1196	20	2	1362	39	34	7	4	46	4	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		0.0	25.0		0.0	0.0		0.0	0.0		60.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	1.00			0.99			0.99	0.97
Frt		0.998			0.996			0.988				0.850
Flt Protected	0.950			0.950				0.964			0.956	
Satd. Flow (prot)	1725	3523	0	1725	3373	0	0	1825	0	0	1837	1597
Flt Permitted	0.145			0.231				0.746			0.770	
Satd. Flow (perm)	263	3523	0	414	3373	0	0	1398	0	0	1461	1551
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			4			3				242
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		71.4			249.8			100.5			249.2	
Travel Time (s)		5.1			18.0			7.2			17.9	
Confl. Peds. (#/hr)	8		19	19		8	8		8	8		8
Confl. Bikes (#/hr)							2		2	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 (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Parking (#/hr)					0							
Adj. Flow (vph)	243	1196	20	2	1362	39	34	7	4	46	4	258
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1216	0	2	1401	0	0	45	0	0	50	258
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.06	1.06	1.08	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	



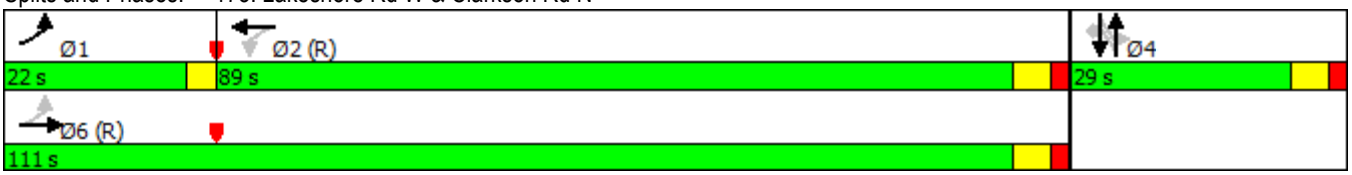
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6			2			4			4	
Permitted Phases	6			2			4			4		4
Detector Phase	1	6		2	2		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	26.0		26.0	26.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	22.0	111.0		89.0	89.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	15.7%	79.3%		63.6%	63.6%		20.7%	20.7%		20.7%	20.7%	20.7%
Maximum Green (s)	19.0	105.0		83.0	83.0		23.0	23.0		23.0	23.0	23.0
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)		8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)		12.0		12.0	12.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		9		9	9		6	6		6	6	6
Act Effct Green (s)	118.5	115.5		99.9	99.9			12.5			12.5	12.5
Actuated g/C Ratio	0.85	0.82		0.71	0.71			0.09			0.09	0.09
v/c Ratio	0.69	0.42		0.01	0.58			0.35			0.38	0.72
Control Delay	22.2	6.8		4.0	6.5			61.9			66.5	20.3
Queue Delay	1.4	1.8		0.0	49.8			0.0			0.0	2.2
Total Delay	23.6	8.6		4.0	56.3			61.9			66.5	22.5
LOS	C	A		A	E			E			E	C
Approach Delay		11.1			56.2			61.9			29.7	
Approach LOS		B			E			E			C	
Queue Length 50th (m)	25.1	32.3		0.1	22.2			11.3			13.5	4.2
Queue Length 95th (m)	m62.7	111.0		m0.1	192.2			22.0			24.6	29.8
Internal Link Dist (m)		47.4			225.8			76.5			225.2	
Turn Bay Length (m)	15.0			25.0								60.0
Base Capacity (vph)	421	2907		295	2407			232			240	457
Starvation Cap Reductn	64	1465		0	16			0			0	0
Spillback Cap Reductn	0	0		0	1365			1			0	97
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.68	0.84		0.01	1.34			0.19			0.21	0.72

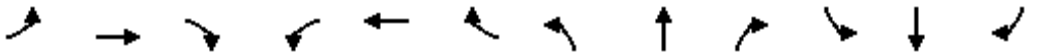
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 78 (56%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 33.3	Intersection LOS: C
Intersection Capacity Utilization 80.9%	ICU Level of Service D
Analysis Period (min) 15	

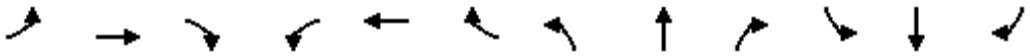
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 173: Lakeshore Rd W & Clarkson Rd N





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	985	75	81	1134	0	130	0	111	157	97	228
Future Volume (vph)	0	985	75	81	1134	0	130	0	111	157	97	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	0.0		0.0	15.0		0.0	0.0		10.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.98			0.98	
Frt		0.989						0.938			0.936	
Flt Protected				0.950				0.974			0.984	
Satd. Flow (prot)	0	3482	0	1708	3535	0	0	1726	0	0	1746	0
Flt Permitted				0.193				0.543			0.797	
Satd. Flow (perm)	0	3482	0	347	3535	0	0	960	0	0	1408	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8						38			40	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.5			71.4			365.2			42.8	
Travel Time (s)		17.5			5.1			26.3			3.1	
Confl. Peds. (#/hr)	10		8	8		10	9		14	14		9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	985	75	81	1134	0	130	0	111	157	97	228
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1060	0	81	1134	0	0	241	0	0	482	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.06	1.06	1.01	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		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	
Detector 1 Size(m)		0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		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	
Detector 1 Queue (s)		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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



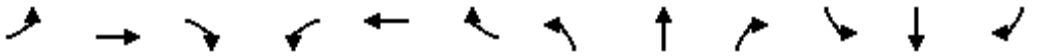
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases				2			4			4		
Detector Phase		2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)		8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)		25.0		25.0	25.0		30.0	30.0		30.0	30.0	
Total Split (s)		74.0		74.0	74.0		66.0	66.0		66.0	66.0	
Total Split (%)		52.9%		52.9%	52.9%		47.1%	47.1%		47.1%	47.1%	
Maximum Green (s)		68.0		68.0	68.0		60.0	60.0		60.0	60.0	
Yellow Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode		C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		8.0		8.0	8.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)		6		6	6		8	8		8	8	
Act Effct Green (s)		77.3		77.3	77.3			50.7			50.7	
Actuated g/C Ratio		0.55		0.55	0.55			0.36			0.36	
v/c Ratio		0.55		0.42	0.58			0.65			0.90	
Control Delay		41.8		45.0	39.4			38.4			58.8	
Queue Delay		0.2		0.8	50.1			0.0			0.1	
Total Delay		42.0		45.9	89.5			38.4			58.9	
LOS		D		D	F			D			E	
Approach Delay		42.0			86.6			38.4			58.9	
Approach LOS		D			F			D			E	
Queue Length 50th (m)		113.4		19.5	152.6			45.9			114.8	
Queue Length 95th (m)		172.2		m40.8	192.7			69.9			151.1	
Internal Link Dist (m)		219.5			47.4			341.2			18.8	
Turn Bay Length (m)				15.0								
Base Capacity (vph)		1925		191	1951			433			626	
Starvation Cap Reductn		0		22	989			0			0	
Spillback Cap Reductn		268		0	0			2			3	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.64		0.48	1.18			0.56			0.77	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	

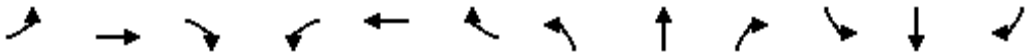
Intersection Signal Delay: 62.5	Intersection LOS: E
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 174: Clarkson Rd S & Lakeshore Rd W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1113	11	28	1331	23	14	0	26	69	2	44
Future Volume (vph)	28	1113	11	28	1331	23	14	0	26	69	2	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00			0.98			0.99	0.97
Frt		0.999			0.997			0.912				0.850
Flt Protected	0.950			0.950				0.983			0.954	
Satd. Flow (prot)	1691	3354	0	1725	3520	0	0	1692	0	0	1833	1581
Flt Permitted	0.184			0.240				0.866			0.804	
Satd. Flow (perm)	328	3354	0	435	3520	0	0	1479	0	0	1522	1527
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			26				44
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		223.8			243.5			82.3			104.4	
Travel Time (s)		16.1			17.5			5.9			7.5	
Confl. Peds. (#/hr)	13		3	3		13	13		9	9		13
Confl. Bikes (#/hr)	1					1						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Parking (#/hr)		0										
Adj. Flow (vph)	28	1113	11	28	1331	23	14	0	26	69	2	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	1124	0	28	1354	0	0	40	0	0	71	44
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.08	1.06	1.06	1.01	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	



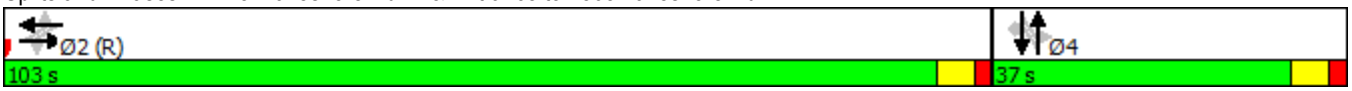
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Detector Phase	2	2		2	2		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		25.0	25.0		30.0	30.0		30.0	30.0	30.0
Total Split (s)	103.0	103.0		103.0	103.0		37.0	37.0		37.0	37.0	37.0
Total Split (%)	73.6%	73.6%		73.6%	73.6%		26.4%	26.4%		26.4%	26.4%	26.4%
Maximum Green (s)	97.0	97.0		97.0	97.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	6	6		6	6		8	8		8	8	8
Act Effct Green (s)	117.9	117.9		117.9	117.9			14.1			14.1	14.1
Actuated g/C Ratio	0.84	0.84		0.84	0.84			0.10			0.10	0.10
v/c Ratio	0.10	0.40		0.08	0.46			0.23			0.46	0.23
Control Delay	3.1	3.7		9.4	14.7			29.6			67.5	17.0
Queue Delay	0.0	0.3		0.0	0.4			0.0			0.0	0.0
Total Delay	3.1	3.9		9.4	15.1			29.6			67.5	17.0
LOS	A	A		A	B			C			E	B
Approach Delay		3.9			15.0			29.6			48.2	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	0.3	5.6		3.1	128.7			3.6			19.1	0.0
Queue Length 95th (m)	m3.4	120.0		m7.1	179.5			14.0			32.2	10.8
Internal Link Dist (m)		199.8			219.5			58.3			80.4	
Turn Bay Length (m)	25.0			25.0								
Base Capacity (vph)	276	2825		366	2965			347			337	372
Starvation Cap Reductn	0	928		0	940			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.10	0.59		0.08	0.67			0.12			0.21	0.12

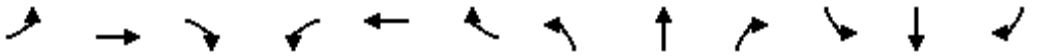
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 2:EBWB, Start of Green	

Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

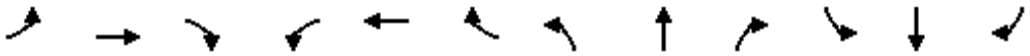
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 175: Lakeshore Rd W & Entrance to 1865 Lakeshore Rd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	1400	165	16	1305	9	115	31	19	7	3	50
Future Volume (vph)	142	1400	165	16	1305	9	115	31	19	7	3	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.2	3.2	3.5	3.2	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	35.0		0.0	40.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00		0.97	0.99		0.99	0.95	
Frt		0.984			0.999			0.943			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	3363	0	1643	3395	0	1684	1693	0	1684	1484	0
Flt Permitted	0.177			0.124			0.722			0.724		
Satd. Flow (perm)	308	3363	0	214	3395	0	1236	1693	0	1268	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			1			19			50	
Link Speed (k/h)		60			50			40			50	
Link Distance (m)		231.1			223.8			197.7			136.3	
Travel Time (s)		13.9			16.1			17.8			9.8	
Confl. Peds. (#/hr)	11		10	10		11	31		11	11		31
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	6%	6%	6%	6%	6%	6%
Bus Blockages (#/hr)	0	0	5	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	142	1400	165	16	1305	9	115	31	19	7	3	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	1565	0	16	1314	0	115	50	0	7	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.06	1.06	1.01	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



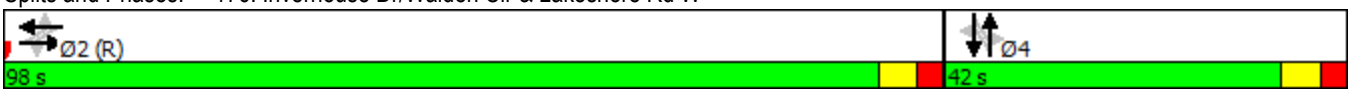
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		42.0	42.0		42.0	42.0	
Total Split (s)	98.0	98.0		98.0	98.0		42.0	42.0		42.0	42.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	91.0	91.0		91.0	91.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		21.0	21.0		21.0	21.0	
Pedestrian Calls (#/hr)	7	7		7	7		14	14		14	14	
Act Effct Green (s)	103.2	103.2		103.2	103.2		22.8	22.8		22.8	22.8	
Actuated g/C Ratio	0.74	0.74		0.74	0.74		0.16	0.16		0.16	0.16	
v/c Ratio	0.63	0.63		0.10	0.52		0.57	0.17		0.03	0.19	
Control Delay	10.8	2.8		10.3	7.9		62.8	31.5		42.3	13.1	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	10.8	2.8		10.3	8.0		62.8	31.5		42.3	13.1	
LOS	B	A		B	A		E	C		D	B	
Approach Delay		3.5			8.0			53.3			16.5	
Approach LOS		A			A			D			B	
Queue Length 50th (m)	2.9	15.6		0.7	35.2		30.9	7.7		1.7	0.7	
Queue Length 95th (m)	m4.6	m25.0		m4.1	96.1		45.2	17.3		5.6	11.5	
Internal Link Dist (m)		207.1			199.8			173.7			112.3	
Turn Bay Length (m)	35.0			40.0			50.0			50.0		
Base Capacity (vph)	227	2483		157	2503		309	437		317	408	
Starvation Cap Reductn	0	0		0	164		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.63	0.63		0.10	0.56		0.37	0.11		0.02	0.13	

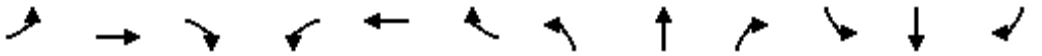
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 13 (9%), Referenced to phase 2:EBWB, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 89.4%	ICU Level of Service E
Analysis Period (min) 15	

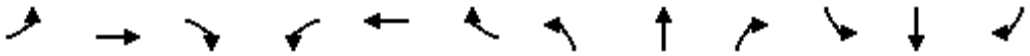
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 176: Inverhouse Dr/Walden Cir & Lakeshore Rd W





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	549	1235	93	274	996	407	185	589	133	362	621	402
Future Volume (vph)	549	1235	93	274	996	407	185	589	133	362	621	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	105.0		30.0	65.0		100.0	50.0		100.0	60.0		60.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.90	0.99	0.98		0.99		0.98	1.00		0.95
Frt			0.850		0.956				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3583	1551	1716	4799	0	1668	3411	1493	1668	3411	1493
Flt Permitted	0.100			0.108			0.277			0.179		
Satd. Flow (perm)	182	3583	1390	193	4799	0	480	3411	1463	314	3411	1423
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		71				133			382
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		425.7			121.9			674.8			534.4	
Travel Time (s)		25.5			7.3			40.5			32.1	
Confl. Peds. (#/hr)	26		58	58		26	26		6	6		26
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	549	1235	93	274	996	407	185	589	133	362	621	402
Shared Lane Traffic (%)												
Lane Group Flow (vph)	549	1235	93	274	1403	0	185	589	133	362	621	402
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	8.0	34.0	34.0	8.0	34.0		8.0	39.0	39.0	8.0	39.0	39.0
Total Split (s)	36.0	61.0	61.0	20.0	45.0		14.0	39.0	39.0	20.0	45.0	45.0
Total Split (%)	25.7%	43.6%	43.6%	14.3%	32.1%		10.0%	27.9%	27.9%	14.3%	32.1%	32.1%
Maximum Green (s)	33.0	53.0	53.0	17.0	37.0		11.0	31.0	31.0	17.0	37.0	37.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.0	3.0	3.0	0.0	3.0		0.0	3.0	3.0	0.0	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	0.0
Total Lost Time (s)	3.0	8.0	8.0	3.0	8.0		3.0	8.0	8.0	3.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Walk Time (s)		11.0	11.0		11.0			13.0	13.0		13.0	13.0
Flash Dont Walk (s)		15.0	15.0		15.0			18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		9	9		9			9	9		9	9
Act Effct Green (s)	80.7	53.0	53.0	61.7	37.0		44.3	28.3	28.3	53.3	34.3	34.3
Actuated g/C Ratio	0.58	0.38	0.38	0.44	0.26		0.32	0.20	0.20	0.38	0.24	0.24
v/c Ratio	1.10	0.91	0.16	0.92	1.06		0.76	0.85	0.33	1.27	0.74	0.63
Control Delay	108.0	52.2	4.0	68.5	85.6		52.0	66.6	9.3	179.4	54.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.0	52.2	4.0	68.5	85.6		52.0	66.6	9.3	179.4	54.6	9.9
LOS	F	D	A	E	F		D	E	A	F	D	A
Approach Delay		66.1			82.8			55.2			74.2	
Approach LOS		E			F			E			E	
Queue Length 50th (m)	~161.0	169.6	0.0	60.3	~150.1		34.7	82.3	0.0	~100.7	82.6	4.2
Queue Length 95th (m)	#235.2	#205.4	8.3	#121.7	#177.4		#57.1	102.9	16.7	#161.8	102.8	34.1
Internal Link Dist (m)		401.7			97.9			650.8			510.4	
Turn Bay Length (m)	105.0		30.0	65.0			50.0		100.0	60.0		60.0
Base Capacity (vph)	500	1356	593	299	1320		245	755	427	284	901	657
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.91	0.16	0.92	1.06		0.76	0.78	0.31	1.27	0.69	0.61

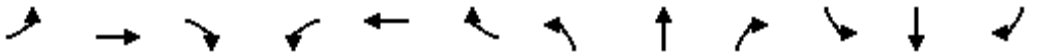
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 18 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	

Intersection Signal Delay: 71.2	Intersection LOS: E
Intersection Capacity Utilization 117.5%	ICU Level of Service H
Analysis Period (min) 15	

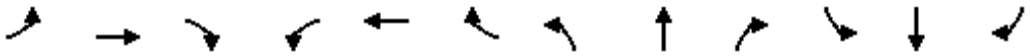
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 178: Southdown Rd & Royal Windsor Dr/Lakeshore Rd W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	971	72	209	1272	37	77	12	83	205	18	369
Future Volume (vph)	61	971	72	209	1272	37	77	12	83	205	18	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	30.0		30.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97			0.97	0.99	0.99		1.00	0.97	
Frt			0.850			0.850		0.869			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3481	1537	1785	3481	1565	1785	1555	0	1785	1602	0
Flt Permitted	0.130			0.186			0.270			0.578		
Satd. Flow (perm)	244	3481	1492	349	3481	1525	503	1555	0	1085	1602	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			196			164		83			152	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		408.5			425.7			154.8			127.0	
Travel Time (s)		24.5			25.5			11.1			9.1	
Confl. Peds. (#/hr)	2		3	3		2	12		1	1		12
Confl. Bikes (#/hr)	1		2	2		1						
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%	6%	1%	0%	6%	0%	0%	0%	7%	0%	0%	0%
Bus Blockages (#/hr)	0	0	7	0	0	5	0	0	0	0	0	0
Adj. Flow (vph)	61	971	72	209	1272	37	77	12	83	205	18	369
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	971	72	209	1272	37	77	95	0	205	387	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.05	1.01	0.97	1.04	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	



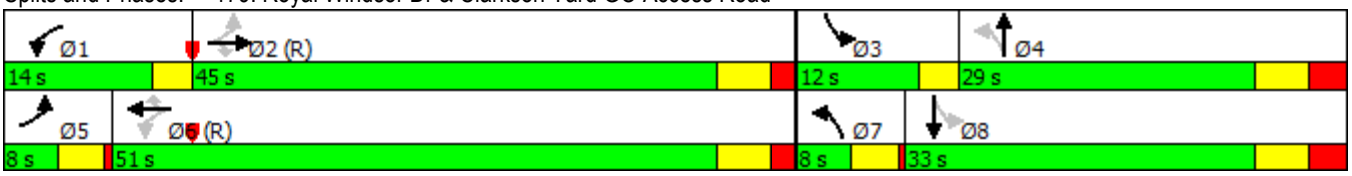
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	8.0	8.0	5.0	8.0	8.0	4.0	8.0		5.0	8.0	
Minimum Split (s)	8.0	26.0	26.0	8.0	26.0	26.0	8.0	29.0		8.0	29.0	
Total Split (s)	8.0	45.0	45.0	14.0	51.0	51.0	8.0	29.0		12.0	33.0	
Total Split (%)	8.0%	45.0%	45.0%	14.0%	51.0%	51.0%	8.0%	29.0%		12.0%	33.0%	
Maximum Green (s)	4.0	39.0	39.0	11.0	45.0	45.0	4.0	22.0		9.0	26.0	
Yellow Time (s)	3.5	4.0	4.0	3.0	4.0	4.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	0.5	2.0	2.0	0.0	2.0	2.0	0.5	3.0		0.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-3.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	3.0	6.0	6.0	1.0	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		8.0	8.0		8.0	8.0		9.0			9.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		13.0			13.0	
Pedestrian Calls (#/hr)		4	4		4	4		1			1	
Act Effct Green (s)	55.1	47.6	47.6	63.2	52.9	52.9	26.5	16.3		30.6	20.2	
Actuated g/C Ratio	0.55	0.48	0.48	0.63	0.53	0.53	0.26	0.16		0.31	0.20	
v/c Ratio	0.28	0.59	0.09	0.58	0.69	0.04	0.35	0.29		0.51	0.87	
Control Delay	13.6	23.0	0.2	15.9	22.5	0.1	25.6	12.0		30.3	43.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	13.6	23.0	0.2	15.9	22.5	0.1	25.6	12.0		30.3	43.1	
LOS	B	C	A	B	C	A	C	B		C	D	
Approach Delay		21.0			21.1			18.1			38.7	
Approach LOS		C			C			B			D	
Queue Length 50th (m)	4.6	74.8	0.0	16.7	105.2	0.0	10.0	2.0		29.7	45.1	
Queue Length 95th (m)	11.0	105.2	0.0	31.0	137.3	0.0	18.4	14.4		44.6	76.2	
Internal Link Dist (m)		384.5			401.7			130.8			103.0	
Turn Bay Length (m)	30.0		30.0	15.0								
Base Capacity (vph)	218	1657	813	381	1840	883	223	406		403	529	
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	0.28	0.59	0.09	0.55	0.69	0.04	0.35	0.23		0.51	0.73	

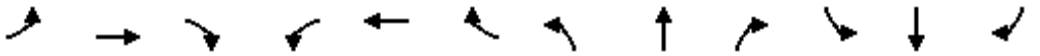
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80

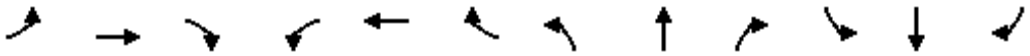
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 179: Royal Windsor Dr & Clarkson Yard GO Access Road





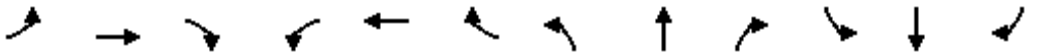
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1279	40	32	1741	0	92	6	49	0	0	14
Future Volume (vph)	0	1279	40	32	1741	0	92	6	49	0	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	15.0		0.0	40.0		0.0	0.0		50.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995						0.866			0.865	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1807	3531	0	1733	3583	0	1653	1540	0	0	1662	0
Flt Permitted				0.176			0.748					
Satd. Flow (perm)	1807	3531	0	321	3583	0	1301	1540	0	0	1662	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						42			48	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1225.8			408.5			421.9			81.0	
Travel Time (s)		73.5			24.5			30.4			5.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	8%	8%	8%	0%	0%	0%
Adj. Flow (vph)	0	1279	40	32	1741	0	92	6	49	0	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1319	0	32	1741	0	92	55	0	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	



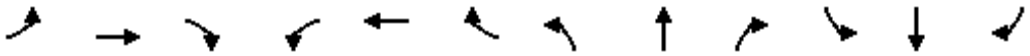
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	36.0	36.0		36.0	36.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	43.0	43.0		43.0	43.0		35.5	35.5		35.5	35.5	
Total Split (s)	54.5	54.5		54.5	54.5		35.5	35.5		35.5	35.5	
Total Split (%)	60.6%	60.6%		60.6%	60.6%		39.4%	39.4%		39.4%	39.4%	
Maximum Green (s)	47.5	47.5		47.5	47.5		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.5	7.5			7.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		50.6		50.6	50.6		10.8	10.8			10.8	
Actuated g/C Ratio		0.72		0.72	0.72		0.15	0.15			0.15	
v/c Ratio		0.52		0.14	0.68		0.46	0.20			0.05	
Control Delay		7.6		7.6	10.0		36.3	13.9			0.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		7.6		7.6	10.0		36.3	13.9			0.3	
LOS		A		A	A		D	B			A	
Approach Delay		7.6			9.9			27.9			0.3	
Approach LOS		A			A			C			A	
Queue Length 50th (m)		44.0		1.4	71.3		11.7	1.6			0.0	
Queue Length 95th (m)		72.6		5.9	117.4		24.7	10.3			0.3	
Internal Link Dist (m)		1201.8			384.5			397.9			57.0	
Turn Bay Length (m)				40.0								
Base Capacity (vph)		2533		230	2569		522	643			696	
Starvation Cap Reductn		0		0	0		0	0			0	
Spillback Cap Reductn		0		0	0		0	0			0	
Storage Cap Reductn		0		0	0		0	0			0	
Reduced v/c Ratio		0.52		0.14	0.68		0.18	0.09			0.02	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 70.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 72.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 180: Avonhead Rd & Royal Windsor Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	786	57	258	1286	402	276	516	171	274	361	185
Future Volume (vph)	188	786	57	258	1286	402	276	516	171	274	361	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	80.0		0.0	55.0		190.0	70.0		40.0	45.0		55.0
Storage Lanes	1		0	1		1	1		2	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00				0.99			0.98	1.00		0.99
Frt		0.990				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3451	0	1733	3583	1531	1716	3579	1581	3395	3544	1551
Flt Permitted	0.088			0.195			0.536			0.950		
Satd. Flow (perm)	164	3451	0	356	3583	1511	968	3579	1552	3391	3544	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				322			164			180
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		503.0			1225.8			946.2			558.5	
Travel Time (s)		30.2			73.5			56.8			33.5	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)	2		1	1		2	1		5	5		1
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%	4%	30%	3%	3%	1%	4%	2%	1%	2%	3%	3%
Bus Blockages (#/hr)	0	0	3	0	0	8	0	0	0	0	0	0
Adj. Flow (vph)	188	786	57	258	1286	402	276	516	171	274	361	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	843	0	258	1286	402	276	516	171	274	361	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	1.06	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		2	4		4			8
Detector Phase	1	6		5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	35.0		9.0	35.0	35.0	9.0	34.0	34.0	13.0	45.0	45.0
Total Split (s)	11.0	44.0		21.0	54.0	54.0	10.0	35.0	35.0	20.0	45.0	45.0
Total Split (%)	9.2%	36.7%		17.5%	45.0%	45.0%	8.3%	29.2%	29.2%	16.7%	37.5%	37.5%
Maximum Green (s)	8.0	37.0		18.0	47.0	47.0	7.0	27.0	27.0	15.0	37.0	37.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	0.0	4.0	4.0	2.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		3.0	7.0	7.0	3.0	8.0	8.0	5.0	8.0	8.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Min	Min	None	Min	Min
Walk Time (s)		11.0			11.0	11.0		11.0	11.0		14.0	14.0
Flash Dont Walk (s)		17.0			17.0	17.0		15.0	15.0		23.0	23.0
Pedestrian Calls (#/hr)		0			0	0		1	1		0	0
Act Effct Green (s)	61.3	45.6		64.9	48.5	48.5	34.5	22.5	22.5	13.8	31.3	31.3
Actuated g/C Ratio	0.51	0.38		0.54	0.40	0.40	0.29	0.19	0.19	0.12	0.26	0.26
v/c Ratio	0.76	0.64		0.71	0.89	0.50	0.86	0.77	0.40	0.70	0.39	0.35
Control Delay	48.2	34.8		26.1	42.5	8.1	59.2	54.3	9.7	61.2	37.0	6.8
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	48.2	34.8		26.1	42.5	8.1	59.2	54.3	9.7	61.2	37.0	6.8
LOS	D	C		C	D	A	E	D	A	E	D	A
Approach Delay		37.2			33.2			47.8			38.3	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	26.5	86.2		30.4	149.4	11.9	46.3	61.3	1.4	32.1	36.4	0.9
Queue Length 95th (m)	#81.8	118.8		51.2	#192.4	37.8	#72.0	76.6	18.8	46.2	47.4	16.9
Internal Link Dist (m)		479.0			1201.8			922.2			534.5	
Turn Bay Length (m)	80.0			55.0		190.0	70.0		40.0	45.0		55.0
Base Capacity (vph)	246	1315		410	1448	802	321	805	476	424	1092	596
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	0.76	0.64		0.63	0.89	0.50	0.86	0.64	0.36	0.65	0.33	0.31

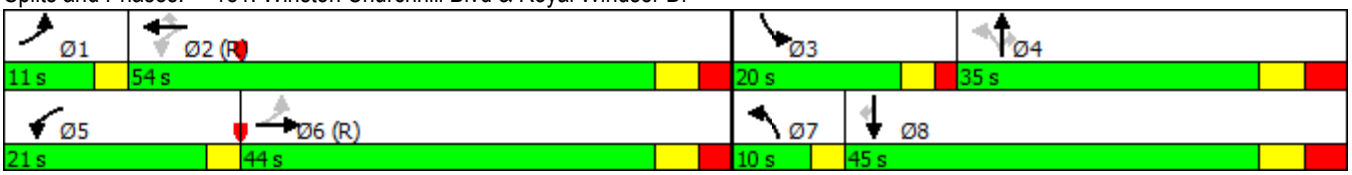
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 100

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 37.9	Intersection LOS: D
Intersection Capacity Utilization 90.4%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 181: Winston Churchhill Blvd & Royal Windsor Dr



Appendix B

Future Condition VISSIM Outputs AM and PM:

Traffic and Transit Operations Results

Appendix B - AM VISSIM Outputs

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Lakeshore Road W & Mississauga Road	WBL	25	51	E	F	F	F	79	272	374	352	20	77	119	82	2	24	35	31						
	WBT	646	1202	C	D	D	D	26	41	42	40	110	214	216	217	19	106	109	106	70	68	52	11	12	7
	WBR	132	348	B	D	D	D	14	46	50	46	111	214	216	218	18	106	109	106						
	EBL	147	199	B	E	E	F	16	75	72	95	267	293	299	345	30	40	40	68						
	EBT	1635	1713	B	C	C	C	13	25	27	26	267	439	463	448	30	154	187	182	38	44	34	8	10	5
	EBR	22	27	A	C	C	C	8	28	30	26	268	439	463	448	30	154	188	182						
	NBL	48	51	D	D	E	E	50	54	56	61	27	30	30	31	4	4	4	5						
	NBT	66	99	D	E	E	E	55	57	58	65	49	73	71	79	8	13	14	16						
	NBR	55	60	C	D	D	D	30	39	44	48	47	70	69	76	6	11	12	14						
	SBL	621	691	F	F	F	F	114	117	121	106	372	348	348	423	205	264	267	321						
	SBT	129	212	E	D	D	D	75	53	54	51	179	343	246	383	9	28	21	140						
	SBR	39	48	E	D	D	D	70	47	49	39	180	343	246	384	9	28	21	141						
Lakeshore Road W & John Street	WBL	34	17	C	D	D	D	35	45	37	42	13	12	10	13	1	0	0	0						
	WBT	761	1562	A	D	D	D	3	42	45	40	58	396	402	378	2	206	226	199	44	50	46	12	15	15
	WBR	2	2	A	D	E	D	0	35	57	46	56	394	399	375	2	204	224	197						
	EBL	14	15	B	C	C	C	11	26	25	31	208	11	10	12	7	0	0	0						
	EBT	2149	2288	A	B	B	B	3	10	12	10	208	208	212	208	7	30	35	30	10	11	7	4	4	3
	EBR	10	11	A	B	B	B	2	11	10	11	209	206	209	206	6	29	34	29						
	NBL	9	13	E	E	E	E	58	56	58	59	13	13	13	13	1	1	1	1						
	NBT	5	4	D	D	D	D	54	45	45	44	19	14	14	15	1	0	0	0						
	NBR	20	16	C	B	B	B	24	15	17	15	18	13	14	14	1	0	0	0						
	SBL	65	56	A	E	E	E	0	56	57	57	0	37	35	39	0	5	5	5						
	SBT	4	3	A	C	B	B	1	23	18	15	5	20	20	20	0	1	1	1						
	SBR	17	26	A	D	D	D	6	41	41	37	3	20	20	20	0	2	2	2						
Lakeshore Road E & Stavebank Rd	WBL	16	37	C	E	E	E	34	74	68	61	58	130	128	131	5	45	43	39						
	WBT	747	1221	A	C	C	C	8	33	34	30	58	130	128	131	5	45	43	39	30	37	26	12	18	20
	WBR	13	41	B	C	C	C	17	23	23	22	58	131	129	133	5	45	44	40						
	EBT	2166	2170	A	B	B	B	5	10	11	11	197	331	334	334	8	44	68	57	17	19	20	3	4	2
	EBR	136	199	A	B	B	B	3	12	13	12	197	331	334	334	8	44	68	57						
	NBL	28	44	E	E	F	E	59	77	83	78	45	39	46	40	8	5	6	5						
	NBT	38	62	D	E	E	E	46	59	60	59	45	48	49	49	8	8	8	8						
	NBR	20	19	E	C	D	C	73	34	36	34	45	50	51	50	8	8	8	8						
	SBL	6	13	E	F	F	F	59	167	174	162	44	319	319	320	4	242	247	237						
	SBT	15	40	B	F	F	F	19	219	228	212	44	319	319	320	4	242	247	237						
	SBR	158	316	B	F	F	F	13	179	184	173	44	320	320	320	4	242	247	237						
Lakeshore Road E &	WBL	6	3	E	D	D	E	55	41	48	56	63	124	127	123	8	30	30	27						
	WBT	687	1100	A	C	C	C	10	25	25	23	63	124	127	123	8	30	30	27	19	25	28	14	11	12
	WBR	12	27	B	C	C	C	11	31	28	25	63	124	127	123	8	30	30	27						
	EBL	3	25	A	B	B	B	0	17	15	16	146	128	130	123	8	11	11	11						
	EBT	2181	2163	A	A	A	A	7	6	6	6	146	128	130	123	8	11	11	11	4	5	4	3	3	3
	EBR	8	14	B	A	A	A	11	7	6	6	147	128	130	123	7	10	10	10						

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Elizabeth Street	NBL	22	41	D	F	F	F	45	179	200	163	43	82	80	79	6	29	28	24						
	NBT	52	44	D	F	F	F	50	156	164	124	43	82	80	79	6	29	28	24						
	NBR	17	5	C	F	D	F	35	105	54	86	44	82	80	80	6	28	27	23						
	SBL	40	16	E	F	F	F	62	111	125	117	29	139	166	175	3	29	29	33						
	SBT	8	5	D	E	F	F	37	72	99	97	23	181	191	178	0	49	48	47						
	SBR	67	158	A	F	F	F	0	95	88	81	24	182	192	178	1	50	49	47						
Lakeshore Road E & Hurontario Street	WBL	36	183	C	F	F	F	30	133	142	123	14	158	163	151	1	48	56	44						
	WBT	619	953	B	C	C	C	13	22	22	21	86	172	167	164	8	46	50	41	30	31	22	10	7	7
	WBR	174	222	A	C	C	B	8	21	21	19	86	172	167	164	7	46	50	41						
	EBL	327	229	B	C	C	C	11	24	25	24	76	77	76	78	10	19	19	19						
	EBT	1197	1756	A	A	A	A	4	9	10	9	76	77	76	78	10	19	19	19	12	9	9	9	5	7
	EBR	5	14	A	A	A	A	3	7	8	7	76	78	77	79	8	18	18	18						
	NBL	6	17	B	E	E	D	20	57	55	55	6	15	15	16	0	1	1	1						
	NBT	61	114	D	D	D	D	43	51	51	51	32	71	74	76	5	14	14	14						
	NBR	18	69	C	D	D	D	30	38	37	37	33	72	74	77	5	14	14	14						
	SBL	194	203	D	F	F	F	46	84	86	94	36	167	161	165	4	38	39	42						
	SBT	83	168	C	E	E	E	31	60	60	64	58	155	147	156	7	26	26	25						
	SBR	224	176	A	B	A	A	9	11	9	10	58	154	147	156	6	25	25	25						
Lakeshore Road E & Elmwood Avenue	WBL	1	2	A	D	E	C	0	36	72	27	78	122	197	128	4	18	30	18						
	WBT	658	1326	A	B	B	B	6	10	13	10	78	122	197	128	4	18	30	18	11	15	11	7	9	8
	WBR	12	16	A	A	A	A	1	7	7	6	79	122	197	128	4	18	30	18						
	EBL	25	21	B	B	C	C	13	13	22	20	41	113	112	110	3	19	21	21						
	EBT	1337	1991	A	A	A	A	2	9	10	10	41	113	112	110	3	19	21	21	8	9	10	6	6	9
	EBR	17	16	A	A	A	A	2	7	7	6	42	115	113	112	3	19	22	22						
	NBL	21	21	E	E	E	E	58	59	62	62	24	25	28	26	2	2	3	2						
	NBR	8	8	B	C	C	C	17	25	27	31	24	26	29	26	1	1	2	1						
	SBL	7	7	E	D	D	D	56	54	53	53	20	15	16	14	2	1	1	1						
	SBR	11	11	A	B	B	B	0	13	19	13	20	16	17	15	1	0	1	0						
Lakeshore Road E & Cumberland Drive	WBL	8	0	A	A	A	A	6	0	0	0	5	0	0	0	0	0	0	0						
	WBT	642	1299	A	A	A	A	4	5	5	5	50	86	121	100	3	8	6	8	5	3	4	9	2	4
	EBT	1316	1812	A	B	B	B	1	13	11	13	60	236	209	221	2	39	34	43	20	21	22	5	10	9
	EBR	36	44	A	B	B	B	3	13	11	14	60	236	210	221	1	39	34	42						
	NBL	29	45	E	E	E	E	69	55	56	64	20	30	30	33	3	4	4	5						
	NBR	14	0	A	A	A	A	5	0	0	0	7	0	0	0	0	0	0	0						
	WBL	15	19	B	C	C	C	14	29	29	31	6	13	15	23	0	0	0	2						
	WBT	586	1240	A	B	A	B	6	10	9	11	70	123	129	136	3	14	11	15	9	6	8	6	3	7
	WBR	15	18	A	A	A	A	2	8	9	9	68	121	127	134	3	13	10	14						
	EBL	11	10	A	C	C	C	5	24	24	20	6	8	7	8	0	0	0	0						
	EBT	1276	1793	A	C	B	C	1	20	18	21	58	229	208	232	1	58	51	63	18	17	17	6	8	11
Lakeshore Road E &	EBR	10	9	A	B	B	B	1	16	18	18	57	227	206	230	1	57	50	62						

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Mohawk Avenue	NBL	44	48	D	D	D	D	51	53	50	50	32	32	32	49	3	4	4	7						
	NBT	5	3	C	D	D	D	24	51	50	48	14	16	14	13	0	0	0	0						
	NBR	22	20	A	B	B	B	6	17	14	16	12	14	11	11	0	0	0	0						
	SBL	112	113	D	E	E	E	53	79	69	68	19	76	69	82	3	16	13	18						
	SBT	9	6	A	C	C	B	5	34	22	15	14	34	24	25	0	1	0	0						
	SBR	9	11	E	E	D	E	56	76	55	60	13	37	27	28	1	2	1	1						
Lakeshore Road E & Shaw Drive	WBL	29	34	C	C	C	C	26	27	27	30	24	99	100	94	1	7	7	6						
	WBT	655	1380	A	A	A	A	4	5	5	4	49	99	100	94	1	7	7	6	8	8	8	4	2	2
	WBR	27	37	A	A	A	A	4	6	6	4	48	100	101	95	1	7	7	6						
	EBL	34	39	B	C	C	C	12	31	29	24	18	14	15	15	0	0	0	0						
	EBT	1600	2067	A	C	C	C	8	29	26	28	109	234	233	233	10	110	94	107	33	30	34	9	10	15
	EBR	10	10	B	C	C	C	12	24	22	22	107	233	232	233	9	110	94	107						
	NBL	7	9	B	D	E	E	16	55	57	56	7	9	9	9	0	1	1	1						
	NBT	9	8	D	D	E	D	51	53	56	51	20	21	23	22	1	1	1	1						
	NBR	28	27	B	C	C	C	13	28	26	27	20	21	22	22	1	1	1	1						
	SBL	66	37	E	E	E	E	55	67	65	59	33	27	27	26	5	4	4	3						
	SBT	25	20	E	D	D	D	57	54	54	52	64	49	49	52	5	5	5	5						
	SBR	89	122	C	B	B	B	21	19	19	18	61	48	47	50	4	4	4	4						
Lakeshore Road & Lagoon Street	WBL	7	11	B	A	A	D	11	3	4	36	18	6	5	9	0	0	0	0						
	WBT	665	1461	A	A	A	A	0	4	4	4	0	104	97	98	0	4	4	4	4	7	3	2	3	1
	WBR	3	10	A	A	A	A	1	4	5	4	12	106	97	101	0	4	4	4						
	EBL	40	34	A	C	D	C	3	28	36	34	19	11	12	24	0	0	0	0						
	EBT	1646	2108	A	D	D	C	0	37	37	35	0	190	195	193	0	92	91	94	36	35	32	8		13
	EBR	8	5	A	C	C	C	1	22	23	22	0	191	195	194	0	92	91	94						
	NBL	13	10	A	C	D	D	7	34	37	39	11	11	14	13	0	1	1	1						
	NBT	5	6	B	D	D	D	16	50	48	47	11	28	28	26	0	3	2	2						
	NBR	64	37	A	D	D	D	0	46	48	40	12	31	31	26	0	4	4	3						
	SBL	19	24	B	D	E	E	10	52	58	56	18	29	28	31	0	2	2	4						
	SBT	3	2	B	E	E	E	12	59	59	56	18	29	28	31	0	2	2	4						
	SBR	33	29	A	B	B	D	6	14	16	47	18	29	28	31	0	2	3	4						
Lakeshore Road E & Cawthra Road	WBT	430	1062	C	D	D	D	21	40	39	44	66	146	144	144	11	70	67	74	43	34	33	12	9	10
	WBR	100	447	B	D	D	D	13	41	41	46	65	145	143	143	11	70	67	74						
	EBL	420	642	B	D	D	D	16	44	44	43	103	105	105	108	7	57	57	55						
	EBT	1309	1527	A	A	A	A	9	6	7	6	130	101	102	103	10	13	13	12	7	6	4	4	3	2
	SBL	305	524	D	E	E	E	41	69	69	74	57	131	128	147	13	40	40	42						
	SBR	245	403	A	C	C	C	9	27	27	26	60	131	128	147	14	39	40	42						
	WBL	43	66	C	F	F	F	21	97	94	105	16	42	43	43	1	10	10	11						
	WBT	504	1359	A	C	C	D	7	35	30	36	48	347	311	326	3	95	78	87	32	0	0	14	0	0
	WBR	8	11	A	C	C	C	2	27	25	28	48	347	311	326	3	95	78	87						
	EBL	27	27	B	F	F	F	16	92	82	85	14	116	19	21	0	4	3	3						
	EBT	1541	1924	A	B	B	B	9	17	17	18	150	237	238	237	12	45	46	45	21	0	0	5	0	0

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Lakeshore Road E & East Avenue	EBR	112	161	A	B	B	B	5	18	19	18	151	239	238	237	12	46	46	45						
	NBL	16	139	C	E	D	E	30	65	54	64	13	82	77	73	1	16	14	16						
	NBT	8	5	E	D	D	D	59	43	42	44	20	21	26	20	1	1	1	1						
	NBR	48	55	A	B	A	B	6	12	9	11	20	21	25	20	1	1	1	1						
	SBL	15	15	D	D	D	D	46	36	39	38	26	14	13	12	1	1	1	1						
	SBT	10	6	D	D	D	C	44	44	42	34	12	12	10	11	0	0	0	0						
	SBR	6	10	A	B	B	B	7	14	14	15	11	11	11	12	0	0	1	1						
Lakeshore Road E & Lakefront Promenade	WBL	18	132	C	E	E	F	21	79	77	81	7	162	176	178	0	20	20	22						
	WBT	543	1412	A	B	B	B	10	17	13	14	78	237	202	214	6	31	22	23	20	0	0	8	0	0
	WBR	1	2	F	B	A	B	112	13	8	11	76	235	200	212	6	30	21	22						
	EBL	8	10	A	E	E	E	8	69	72	71	70	266	274	268	3	42	40	41						
	EBT	1530	1876	A	B	B	B	2	17	16	16	70	266	274	268	3	42	40	41	19	0	0	8	0	0
	EBR	51	202	A	B	B	B	1	18	17	17	70	278	274	268	3	49	39	41						
	NBL	43	174	D	E	D	D	49	61	53	54	21	124	111	120	3	24	26	26						
	NBT	12	9	D	C	B	B	37	35	13	13	13	0	29	26	1	0	0	0						
	NBR	18	110	E	E	B	B	58	68	16	16	13	116	52	52	1	17	4	4						
Lakeshore Road E & Ogden Avenue	WBL	2	132	B	E	E	F	12	69	69	82	7	207	203	204	0	45	40	45						
	WBT	501	1265	A	C	C	C	4	23	21	22	43	207	203	204	3	45	40	45	23	0	0	8	0	0
	WBR	43	19	A	B	B	B	2	20	19	20	41	207	203	204	2	42	37	42						
	EBL	73	142	A	E	E	E	8	57	65	64	14	54	263	262	0	11	54	46						
	EBT	1467	1683	A	C	C	B	7	24	23	20	173	267	263	262	7	51	54	46	26	0	0	8	0	0
	EBR	8	161	B	C	C	C	12	26	24	21	171	267	261	259	6	51	51	43						
	NBL	5	139	C	F	F	F	33	108	129	159	12	170	187	188	0	39	63	81						
	NBT	4	199	D	E	F	F	43	79	87	99	12	178	196	198	0	59	42	64						
	NBR	3	110	A	E	F	F	5	66	125	131	13	179	281	277	0	60	162	171						
	SBL	55	119	D	F	F	F	45	104	125	131	41	247	281	277	7	107	162	171						
	SBT	9	204	D	F	F	F	41	92	108	114	41	247	281	277	7	107	162	171						
	SBR	56	142	B	F	F	F	15	81	96	102	42	247	281	278	7	108	162	171						
Lakeshore Road E & Hydro Road	WBL	54	165	C	D	E	E	25	55	56	57	34	96	108	91	2	14	14	14						
	WBT	531	1257	A	B	B	B	0	17	15	15	0	192	184	176	0	25	20	20	18	0	0	4	0	0
	WBR	1	16	A	B	B	B	0	16	14	13	27	193	185	177	0	25	21	21						
	EBL	6	57	A	D	E	D	8	54	55	54	9	29	29	43	0	3	3	4						
	EBT	1496	1694	A	C	C	C	1	24	23	22	0	227	227	222	0	50	46	44	24	0	0	4	0	0
	EBR	23	161	A	C	C	C	1	26	23	22	0	228	229	223	0	51	47	45						
	NBL	5	139	C	D	D	D	26	37	36	39	11	71	69	82	0	10	8	10						
	NBT	0	5	A	C	C	C	0	33	29	30	0	55	56	47	0	2	2	2						
	NBR	19	138	B	B	B	B	13	15	13	14	13	56	56	46	0	3	3	2						
	SBL	2	20	B	C	C	C	11	29	29	30	14	30	31	34	0	2	2	2						
	SBT	0	10	A	C	C	C	0	35	31	34	0	30	31	34	0	2	2	2						
	SBR	10	20	A	B	B	B	5	12	13	12	14	33	32	35	0	2	2	2						
	WBL	0	165	A	D	D	D	3	46	52	50	39	65	73	64	1	13	15	14						

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Lakeshore Road E & Haig Boulevard	WBT	549	1321	A	B	B	B	2	15	13	14	37	197	172	195	1	23	17	22	15	0	0	5	0	0
	WBR	35	8	A	B	B	B	4	12	16	13	38	197	172	195	1	23	17	21						
	EBL	21	43	A	D	D	D	5	46	44	44	10	23	23	22	0	2	2	2						
	EBT	1496	1688	A	B	B	B	2	17	18	17	34	186	183	186	2	32	31	29	17	0	0	4	0	0
	EBR	0	121	A	B	B	B	3	17	18	18	39	187	185	187	1	32	31	30						
	NBL	0	104	A	D	D	D	3	37	37	39	39	62	66	67	1	10	13	15						
	NBT	0	82	A	C	C	C	3	29	32	33	39	62	80	81	1	10	5	6						
	NBR	0	138	A	B	B	C	3	20	19	20	39	72	69	71	1	14	13	15						
	SBL	47	38	D	C	C	C	40	34	34	32	27	41	42	42	5	6	6	6						
	SBT	23	69	D	C	C	C	38	32	30	31	27	41	43	43	5	6	6	6						
	SBR	37	13	A	B	A	A	4	10	4	4	12	10	10	9	0	0	0	0						
Lakeshore Road E & Dixie Road	WBL	1	1	A	A	A	A	3	0	0	0	0	9	9	9	0	6	6	6						
	WBT	540	1064	A	D	D	D	8	36	36	48	52	271	237	354	5	62	59	122	37	0	0	11	0	0
	WBR	149	276	A	D	D	E	7	38	41	57	39	273	237	354	2	62	59	121						
	EBL	360	619	A	D	D	D	9	49	49	42	62	202	203	205	2	60	55	46						
	EBT	935	1163	A	A	A	A	3	7	7	7	62	202	203	205	1	60	55	46	7	0	0	3	0	0
	EBR	1	1	A	A	A	A	2	0	0	0	61	199	202	203	1	38	35	31						
	NBT	3	3	C	D	E	E	21	55	55	59	7	8	10	10	0	0	0	0						
	NBR	3	2	A	A	A	A	6	7	7	6	7	5	5	5	0	0	0	0						
	SBL	158	250	D	E	E	E	49	62	62	66	63	106	106	112	13	29	29	31						
	SBT	4	5	E	E	E	E	62	69	68	75	63	106	106	112	13	29	29	31						
	SBR	147	377	A	B	B	B	6	15	12	12	66	109	108	114	14	31	30	32						

Appendix B - PM VISSIM Outputs

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Lakeshore Road W & Mississauga Road	WBL	22	66	D	D	D	D	40	49	44	43	16	34	47	35	1	4	5	3						
	WBT	1390	1246	C	C	C	C	34	33	33	32	209	213	214	216	69	96	97	94	45	48	41	4	10	6
	WBR	255	528	C	D	D	D	31	42	42	39	209	213	214	216	69	97	98	94						
	EBL	164	148	D	D	E	E	54	51	65	71	86	104	81	91	12	13	14	17						
	EBT	889	1113	B	D	D	C	15	43	52	34	138	421	479	379	13	146	187	94	57	68	45	22	30	16
	EBR	25	32	B	D	D	C	17	39	47	33	138	421	480	380	13	146	187	95						
	NBL	50	96	D	F	F	E	38	85	84	66	34	43	86	52	3	8	12	8						
	NBT	70	163	C	F	F	F	30	116	116	87	45	369	327	237	5	109	102	52						
	NBR	20	103	C	F	F	E	29	111	108	77	45	367	325	235	5	107	100	50						
	SBL	233	287	D	F	F	F	45	265	267	234	52	347	347	349	13	200	199	180						
	SBT	134	110	C	F	F	E	28	87	88	75	86	99	92	101	9	5	10	6						
	SBR	133	84	B	F	F	E	18	81	86	72	87	99	93	102	9	5	10	6						
Lakeshore Road W & John Street	WBL	21	21	B	C	C	C	11	28	31	28	10	10	11	9	0	0	0	0						
	WBT	1377	1818	B	C	C	C	14	32	32	30	110	401	402	404	29	194	200	185	37	36	34	10	8	6
	WBR	7	7	A	D	C	C	0	42	35	32	108	399	400	402	28	192	199	183						
	EBL	17	18	A	D	D	D	0	40	40	37	0	13	13	14	0	0	0	0						
	EBT	984	1480	A	D	D	C	6	37	41	30	55	217	216	215	6	85	95	70	36	44	31	15	20	10
	EBR	5	5	B	C	D	C	10	23	40	26	53	214	214	213	5	83	94	69						
	NBL	7	7	C	E	E	D	26	56	61	54	14	8	7	8	0	0	1	0						
	NBT	2	1	A	C	C	B	0	21	21	18	7	13	14	12	0	0	0	0						
	NBR	17	17	A	C	C	B	6	29	31	20	6	12	13	11	0	0	0	0						
	SBL	18	18	A	D	D	D	0	44	44	46	0	15	15	15	0	1	1	1						
	SBT	1	1	A	C	C	C	0	26	22	32	0	12	13	13	0	0	0	0						
	SBR	15	15	A	C	C	C	0	34	33	33	0	14	15	14	0	1	1	1						
Lakeshore Road E & Stavebank Rd	WBL	43	31	B	D	D	C	18	44	40	27	124	134	132	132	20	52	52	45						
	WBT	1284	1664	B	D	C	C	17	35	35	29	124	134	132	132	20	52	52	45	35	41	28	10	19	11
	WBR	17	18	A	C	C	C	0	32	28	26	124	136	134	133	20	53	53	45						
	EBL	115	152	C	F	F	F	25	110	126	97	141	395	395	395	13	250	260	224						
	EBT	842	1359	B	D	D	D	12	50	51	44	141	395	395	395	13	250	260	224	44	46	28	9	8	7
	EBR	103	203	A	C	C	C	5	29	31	26	141	396	396	395	12	250	260	224						
	NBL	71	198	D	F	F	F	53	81	84	87	53	117	117	116	8	32	34	36						
	NBT	9	25	A	D	E	E	0	54	58	68	54	83	101	101	7	7	8	10						
	NBR	36	101	C	D	D	D	34	36	39	44	54	84	103	103	7	8	9	11						
	SBL	19	32	D	F	F	F	36	84	83	90	60	277	249	309	8	96	89	119						
	SBT	9	15	C	F	F	F	28	124	115	129	60	277	249	309	9	96	89	119						
	SBR	216	284	C	F	F	F	22	99	93	105	60	277	250	310	9	97	90	119						
	WBL	21	22	C	D	D	C	21	40	39	32	61	135	136	132	7	49	48	37						
	WBT	1180	1398	A	C	C	C	7	32	31	24	61	135	136	132	7	49	48	37	38	33	29	14	15	13
	WBR	51	43	A	C	C	C	0	29	30	22	61	136	137	132	7	50	48	38						
	EBL	23	69	A	C	C	C	0	29	27	22	93	76	92	80	6	8	8	5						
	EBT	855	1358	A	A	A	A	8	6	6	4	93	76	92	80	6	8	8	5	4	2	4	5	3	4

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Lakeshore Road E & Elizabeth Street	EBR	19	65	B	A	A	A	12	4	4	4	94	76	92	80	6	8	7	4						
	NBL	59	51	C	F	F	F	34	108	91	116	25	79	76	79	3	17	14	17						
	NBT	31	28	C	F	E	F	32	85	80	89	25	79	76	79	3	17	14	17						
	NBR	28	18	B	F	E	F	14	87	66	87	25	79	76	79	2	16	14	16						
	SBL	48	71	C	F	F	F	23	135	138	146	28	250	261	260	2	134	152	135						
	SBT	15	32	C	F	F	F	33	176	175	165	32	250	260	260	2	152	164	154		sit Tota				
	SBR	105	264	A	F	F	F	0	151	155	147	33	251	261	260	2	153	164	154						
Lakeshore Road E & Hurontario Street	WBL	41	132	D	D	D	D	39	43	47	40	22	38	87	81	2	4	8	6						
	WBT	877	1183	D	D	D	D	38	46	46	37	162	176	176	176	41	76	77	66	58	50	40	15	13	8
	WBR	275	207	C	D	D	D	24	50	48	39	161	176	176	177	41	77	77	66						
	EBL	250	224	C	D	E	E	25	53	62	65	91	77	77	79	15	29	32	32						
	EBT	532	1143	B	B	B	B	14	16	16	12	91	77	77	79	15	29	32	32	19	20	18	8	7	6
	EBR	7	18	A	B	B	A	3	16	18	4	93	77	78	80	13	29	29	25						
	NBL	15	43	C	D	D	D	27	44	43	51	19	46	29	37	1	2	2	3						
	NBT	107	216	C	D	D	D	24	41	42	48	38	136	139	155	4	25	28	32						
	NBR	45	159	B	C	C	D	13	33	33	39	38	136	139	155	3	25	28	32						
	SBL	257	300	C	F	F	F	30	82	87	138	90	206	223	236	13	73	81	146						
	SBT	95	198	B	D	D	F	13	53	54	90	79	200	220	235	5	51	59	103						
	SBR	357	272	A	C	C	D	9	24	24	38	80	200	220	235	5	51	59	103						
Lakeshore Road E & Elmwood Avenue	WBL	6	7	A	D	D	C	6	46	36	27	48	256	245	229	3	89	75	38						
	WBT	1160	1497	A	C	C	B	2	29	26	18	48	256	245	229	3	89	75	38	28	27	14	12	10	8
	WBR	22	25	A	C	C	B	0	25	22	16	49	256	245	229	3	89	75	38						
	EBL	27	24	A	C	C	C	8	23	24	22	51	110	107	109	4	19	15	11						
	EBT	772	1560	A	A	A	A	5	10	8	7	51	110	107	109	4	19	15	11	9	9	4	6	4	4
	EBR	19	18	A	A	A	A	3	7	6	7	53	111	109	111	4	20	15	12						
	NBL	10	8	A	D	D	D	9	39	40	39	8	20	14	13	0	3	1	1						
	NBT	1	1	A	D	C	C	6	37	31	33	8	20	14	13	0	3	1	1						
	NBR	27	9	A	A	B	A	7	10	10	10	9	21	15	14	0	2	0	0						
	SBL	11	15	A	D	D	D	7	41	39	40	6	42	31	20	0	9	5	1						
	SBT	1	1	A	C	C	C	3	20	20	21	6	42	31	20	0	9	5	1						
	SBR	21	17	A	C	B	B	7	21	20	17	8	43	31	20	0	9	5	1						
Lakeshore Road E & Cumberland Drive	WBL	18	5	B	C	B	B	10	24	19	15	10	8	8	7	0	0	0	0						
	WBT	1131	1677	A	C	B	B	3	20	16	11	55	241	224	199	3	64	51	24	24	20	19	11	9	5
	EBT	768	1529	A	A	A	A	4	7	7	6	43	117	101	115	4	12	9	9	17	15	14	4	4	3
	EBR	42	55	A	A	A	A	6	9	8	7	43	117	101	115	3	12	9	9						
	NBL	57	73	C	D	D	D	28	46	42	40	24	57	51	38	3	13	11	5						
	NBT	0	0	A	B	B	A	4	15	12	9	55	245	228	200	2	17	13	8						
	NBR	21	8	A	A	A	A	4	7	5	6	13	9	8	8	0	0	0	0						
	WBL	24	13	B	C	B	B	13	22	18	17	13	10	7	10	0	0	0	0						
	WBT	1285	1593	A	B	B	B	10	18	17	10	191	231	228	192	13	63	55	21	20	20	11	9	12	5

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Lakeshore Road E & Mohawk Avenue	WBR	18	11	A	B	B	A	9	18	14	9	188	229	226	189	12	62	54	20						
	EBL	17	27	A	C	C	C	0	32	29	31	0	16	19	14	0	1	2	1						
	EBT	798	1465	A	A	A	A	4	9	8	8	38	110	108	113	3	13	10	10	15	10	8	22	3	4
	EBR	31	45	A	A	A	A	5	9	9	8	37	108	106	111	2	12	9	9						
	NBL	45	60	C	D	D	C	29	36	36	35	13	47	47	30	1	10	8	3						
	NBT	8	5	C	C	D	D	24	32	39	36	21	12	14	13	0	0	1	0						
	NBR	30	21	A	A	A	A	7	6	6	6	19	10	11	11	0	0	0	0						
	SBL	65	57	C	C	C	C	30	32	32	34	19	28	42	24	1	3	7	1						
	SBT	11	7	A	A	B	B	0	8	11	18	0	39	37	32	0	5	5	2						
	SBR	17	29	D	D	D	D	51	36	35	35	7	39	37	32	0	6	6	3						
Lakeshore Road E & Shaw Drive	WBL	104	77	B	C	C	C	14	21	22	23	19	109	108	109	1	24	19	13						
	WBT	1445	1655	A	B	A	A	9	11	8	7	177	109	108	109	10	24	19	13	13	11	6	6	7	4
	WBR	37	28	A	B	A	A	9	11	8	7	175	109	109	110	9	24	19	13						
	EBL	53	84	C	C	C	C	30	24	28	24	26	49	48	31	2	9	7	1						
	EBT	795	1523	A	A	B	B	2	8	11	10	20	153	170	163	0	18	23	18	9	11	8	6	5	4
	EBR	45	74	A	A	A	A	2	8	10	9	20	152	170	162	0	18	23	17						
	NBL	76	96	C	E	E	E	34	67	58	58	55	55	55	57	4	13	11	9						
	NBT	37	27	C	D	D	D	33	54	53	55	26	46	45	45	1	4	4	4						
	NBR	72	62	A	C	C	C	6	23	22	24	25	45	45	44	1	4	4	4						
	SBL	75	97	D	D	E	E	40	54	56	60	39	52	52	52	7	8	9	10						
	SBT	21	22	D	E	E	E	43	67	67	65	15	73	76	60	1	14	13	6						
	SBR	53	101	B	C	C	C	10	31	26	25	12	71	74	58	0	13	12	5						
Lakeshore Road & Lagoon Street	WBL	10	9	A	B	A	B	5	11	10	12	27	6	7	8	0	0	0	0						
	WBT	1470	1703	A	B	B	B	1	15	12	12	27	199	187	189	0	38	29	20	13	13	7	6	7	3
	WBR	53	50	A	B	B	B	1	14	12	11	27	204	192	194	0	41	31	21						
	EBL	108	125	C	C	C	D	22	32	32	39	54	104	113	147	1	6	8	10						
	EBT	823	1594	A	C	C	B	1	20	21	12	54	169	172	189	1	36	36	20	18	20	7	9	0	0
	EBR	11	13	A	B	B	B	1	15	15	18	54	170	172	185	1	36	36	47						
	NBL	10	10	A	D	D	C	7	36	36	34	20	13	14	15	0	1	1	1						
	NBT	6	4	A	C	D	D	0	34	38	40	20	17	18	17	0	1	1	1						
	NBR	10	12	B	B	D	D	19	12	42	50	20	17	18	17	0	1	1	1						
	SBL	40	52	C	E	E	F	31	67	73	351	53	100	103	182	6	26	26	131						
	SBT	5	4	A	E	E	F	0	64	73	364	53	100	103	182	6	26	26	131						
	SBR	106	117	C	E	E	F	20	66	72	345	53	100	103	182	6	26	26	131						
Lakeshore Road E & Cawthra Road	WBT	1273	1281	B	C	C	C	14	29	28	25	175	142	143	142	27	59	55	48	39	21	16	12	8	6
	WBR	250	480	C	C	C	C	23	33	32	29	174	141	142	141	26	59	55	47						
	EBL	265	517	E	D	D	D	57	51	51	53	121	105	106	106	28	55	55	58						
	EBT	608	1091	A	A	A	A	9	6	6	7	69	100	102	104	5	9	12	18	4	5	14	5	3	4
	SBL	150	463	D	E	E	E	40	68	67	73	55	237	232	229	8	100	89	99						
	SBT	0	0	A	A	A	A	0	0	0	0	55	237	232	229	8	100	89	99						
	SBR	260	465	B	E	E	E	14	72	66	74	57	237	231	229	9	100	88	98						

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
Lakeshore Road E & East Avenue	WBL	30	79	A	D	D	D	9	44	41	46	12	35	35	40	0	5	5	5						
	WBT	1440	1662	A	C	C	B	8	24	24	18	142	307	345	290	10	79	82	42	24	0	0	5	0	0
	WBR	28	28	A	C	B	B	6	23	19	14	143	308	345	290	10	79	83	43						
	EBL	25	33	C	D	D	D	32	54	54	54	18	62	19	20	1	3	2	2						
	EBT	701	1374	A	C	B	B	8	20	20	16	69	192	184	193	5	31	27	24	20	0	0	4	0	0
	EBR	23	128	A	B	C	B	8	20	20	17	70	194	184	193	6	32	27	23						
	NBL	109	136	C	C	C	D	34	32	31	42	38	69	66	62	5	11	11	11						
	NBT	37	29	D	C	C	C	40	24	25	33	26	33	34	40	3	1	2	3						
	NBR	26	76	B	B	A	B	11	10	9	11	27	34	33	39	2	1	1	2						
	SBL	10	12	D	C	C	C	41	26	28	33	7	13	11	12	0	0	0	1						
	SBT	4	3	A	C	C	C	0	21	27	34	12	17	12	11	0	2	0	0						
	SBR	14	13	B	B	B	B	10	12	14	12	11	16	13	12	0	2	1	0						
Lakeshore Road E & Lakefront Promenade	WBL	13	159	A	D	D	D	3	49	49	48	0	109	126	128	0	12	13	13						
	WBT	1433	1599	A	B	B	B	10	15	13	11	163	247	243	227	17	39	31	20	15	0	0	8	0	0
	WBR	2	7	F	B	B	A	99	17	14	9	161	245	241	225	16	38	30	19						
	EBL	3	5	A	D	D	D	0	51	52	45	73	192	176	220	3	34	31	32						
	EBT	689	1297	A	C	C	C	5	23	22	21	73	192	176	220	3	34	31	32	22	0	0	5	0	0
	EBR	27	160	A	C	C	C	3	23	23	22	73	205	176	220	3	41	31	32						
	NBL	78	170	D	C	C	C	53	30	32	29	65	91	92	77	9	12	18	12						
	NBT	11	9	A	B	A	A	0	16	6	7	20	0	25	28	1	0	0	0						
	NBR	48	166	D	D	B	A	43	41	10	9	20	83	57	41	2	12	4	3						
Lakeshore Road E & Ogden Avenue	WBL	43	159	A	E	E	E	5	67	68	73	9	222	210	223	0	56	58	52						
	WBT	1388	1518	A	C	C	C	4	21	23	20	67	222	210	223	6	56	58	52	19	0	0	7	0	0
	WBR	28	31	A	C	C	C	8	21	24	21	65	223	211	223	5	52	55	49						
	EBL	28	110	C	F	F	F	22	94	103	98	12	64	259	248	0	17	75	64						
	EBT	707	1375	A	C	C	C	3	31	32	28	35	256	259	248	2	67	75	64	35	0	0	7	0	0
	EBR	2	128	A	C	C	C	4	32	30	26	33	256	256	245	1	66	72	61						
	NBL	2	136	C	F	F	F	28	83	109	126	7	154	181	181	0	26	49	60						
	NBT	0	235	C	E	E	F	31	71	72	84	7	177	196	197	0	79	34	56						
	NBR	3	166	A	E	D	D	4	61	51	55	7	178	185	182	0	80	45	45						
	SBL	48	19	D	D	D	D	51	48	51	55	27	173	185	182	4	40	45	45						
	SBT	8	263	A	D	E	E	0	50	56	59	27	173	185	182	4	40	45	45						
	SBR	58	111	A	D	D	D	7	42	46	51	27	173	185	182	5	41	45	45						
Lakeshore Road E & Hydro Road	WBL	14	199	A	F	F	F	4	90	96	121	9	191	193	196	0	38	42	56						
	WBT	1441	1552	A	C	C	C	1	22	23	22	0	197	195	196	0	52	52	49	28	0	0	6	0	0
	WBR	4	20	A	C	C	B	2	24	25	18	41	198	196	197	0	52	53	49						
	EBL	2	64	A	F	F	F	0	93	94	92	0	101	76	66	0	9	9	9						
	EBT	751	1368	A	C	C	C	0	28	26	27	0	223	216	224	0	48	41	45	31	0	0	14	0	0
	EBR	5	128	A	C	C	C	1	28	24	25	26	225	217	226	0	49	42	46						
	NBL	14	136	B	D	D	D	16	48	54	52	17	112	126	126	0	16	20	15						
	NBT	1	5	A	D	D	D	9	48	48	41	19	95	105	106	1	10	8	7						

Intersection	Direction	Balanced Volume		LOS				Auto Delay (s)				Max Queue (m)				Average Queue (m)				BRT Delay (s)			BRT Delay Variability		
		Existing	Future	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc0	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3	Sc1	Sc2	Sc3
	NBR	56	207	A	C	C	C	7	22	27	23	17	96	104	106	0	11	8	8						
	SBL	1	20	C	D	D	D	26	39	39	42	7	31	34	33	0	3	3	3						
	SBT	0	10	A	D	D	D	0	42	44	42	7	31	34	33	0	3	3	3						
	SBR	4	20	A	B	B	B	0	17	17	20	7	34	35	35	0	4	3	3						
Lakeshore Road E & Haig Boulevard	WBL	0	199	A	D	D	E	4	46	49	59	77	80	79	94	2	15	16	20						
	WBT	1412	1616	A	C	C	C	3	26	28	31	77	344	360	392	3	98	109	115	25	0	0	9	0	0
	WBR	44	7	A	B	C	C	4	19	25	25	77	344	360	392	3	98	108	115						
	EBL	45	105	C	E	E	E	22	68	59	59	22	64	50	49	1	11	9	9						
	EBT	763	1394	A	B	B	B	2	19	19	19	28	192	189	190	2	32	32	31	16	0	0	5	0	0
	EBR	0	96	A	B	B	B	4	18	19	19	77	192	191	192	2	32	32	32						
	NBL	0	102	A	E	E	F	4	64	71	87	77	103	112	111	2	22	30	31						
	NBT	0	115	A	D	D	D	4	37	45	49	77	103	126	125	2	22	19	22						
	NBR	0	207	A	C	C	C	4	26	32	32	77	112	116	115	2	28	31	33						
	SBL	33	33	D	E	D	D	43	60	39	43	20	82	71	62	3	17	11	11						
	SBT	14	120	E	D	D	D	56	51	39	42	20	82	73	63	3	17	12	12						
	SBR	47	53	A	C	A	A	7	22	7	9	15	25	21	18	1	2	1	1						
Lakeshore Road E & Dixie Road	WBT	1033	1365	B	D	D	D	19	36	38	41	158	376	439	445	21	118	140	151	37	0	0	11	0	0
	WBR	191	248	B	D	D	D	19	40	44	50	145	377	439	445	15	118	140	151						
	EBL	328	388	E	E	E	E	66	72	72	63	135	166	163	156	32	50	47	41						
	EBT	723	1261	A	A	A	A	5	10	9	8	114	166	163	156	2	50	47	41	13	0	0	6	0	0
	NBT	3	3	B	D	D	D	16	46	46	46	5	7	9	10	0	0	0	0						
	NBR	2	3	A	A	A	A	8	7	6	6	7	7	8	8	0	0	0	0						
	SBL	181	367	D	E	E	E	48	56	57	73	75	165	156	192	14	47	43	58						
	SBT	1	1	A	E	F	E	0	80	80	77	75	165	156	192	14	47	43	58						
	SBR	282	456	A	C	C	C	9	27	20	24	78	168	158	194	15	50	44	59						