MEMORANDUM

DATE	September 10, 2021
TO	**City of Mississauga, Transportation and Works Department** **ATTN: Lin Rogers**
SUBJECT	Lakeview Village Transportation Infrastructure Phasing Analysis Update to Analysis Scenario 3 to include 15% of Rangeview Estates Traffic
FROM	TMIG
PROJECT NUMBER	17201

An update to TMIG's previously submitted Infrastructure Phasing Analysis (August 2021) was requested by City Staff on Tuesday, September 7, 2021 during a meeting discussing Staff's progress in reviewing the *Transportation Considerations Report Response to Comments Addendum #2* (TCR RTC Addendum #2) submitted in August 2021. The update was to include a percentage of Rangeview Estates traffic, as a conservative measure, in addition to the Lakeview Village traffic already applied to the existing road network.

Enclosed is an update to Analysis Scenario 3 of the August 2021 Phasing Analysis conducted for the Lakeview Village development on Mississauga's waterfront. The updated analysis maintains all previous analysis assumptions and recommended infrastructure improvements for Analysis Scenario 3; however, analysis has been performed with an additional 15% of the total site traffic estimated to be generated by the Rangeview Estates background development by 2041. The 15% of traffic accounts for blocks of development in the western portion of Rangeview Estates that abut existing transportation infrastructure, namely East Avenue and Rangeview Road, that could in theory be cleared for development by the 2031 horizon.

The conservative addition of Rangeview Estates traffic to the Lakeview Village traffic already considered in Analysis Scenario 3 will be referred to as Analysis Scenario 3B for the purposes of this report. As another conservative measure, the enclosed analysis does not consider the removal of existing Rangeview traffic from the road network as the redevelopment of the Rangeview Estates area progresses.

Analysis Scenario 3B Methodology Summary

Analysis Scenario 3B is based off Analysis Scenario 3, and as such, the majority of the details surrounding Scenario 3 will not be repeated in this memo, as they were discussed previously in the August 2021 Infrastructure Phasing Analysis Memo submitted with TCR RTC Addendum #2. The following process was undertaken to include a portion of Rangeview Estates site traffic to account for any development that may occur prior to the 2031 study horizon:

- Official Plan was reviewed, and the number of residential units allocated to Rangeview Estates identified
- Trip generation for the full 3,700 units was undertaken as per recent analysis submitted to the City (ITE-based, converted to person-trips, and then broken down further by mode; 55.5% auto-driver mode split applied, as per Analysis Scenario 3-specific methodology)
- Of the trips generated by the full Rangeview development, 15% were assigned to the road network (based on the trip distribution used for Lakeview Village Traffic)

- It was assumed that the 15% of Rangeview Estates site traffic would travel to/from the western portion of the development located between East Avenue and Lakefront Promenade
- The Rangeview Estates site traffic was assigned to Lakeshore Road East at the following locations:
  - East Avenue (70%)
  - Lakefront Promenade (10%)
  - Potential RI/RO to Lakeshore Road East located between East Avenue and Lakefront Promenade (20%)
- Signal Timing Plans at Lakeshore Road intersections optimized as needed to better accommodate addition of Rangeview Estates site traffic

As a reminder, for the purposes of the phasing analysis, the southern extensions of Ogden Avenue (Street 'F') and Haig Boulevard (Street 'I') were not included to examine a worst-case scenario in terms of direct access to Lakeshore Road East (i.e., only Hydro Road, Lakefront Promenade, and East Avenue, assumed available for Lakeview Village and Rangeview Estates traffic).

Regarding Rangeview Estates trip generation, **Table 1** summarizes the estimated trip generation of the development at full build-out (by 2041) and the resulting 15% of trips assigned to the 2031 Analysis Scenario 3B road network. Of note, while the City of Mississauga's Official Plan identifies 925 Townhouse units to be developed within Rangeview, these units have been classified as mid-rise units for analysis purposes. This is due to ITE's definition of low-rise residential uses being 2 storeys or less and the Official Plan specifying that the 925 townhouse units include low-rise apartments up to 4 storeys.

Keeping in-line with Analysis Scenario 3, Analysis Scenario 3B also considered the impact of the implementation of the median-running Bus Rapid Transit (BRT) lanes on Lakeshore Road East, as detailed in the City's *Lakeshore Road Transportation Master Plan*. As discussed in the August 2021 Phasing Analysis memo,

> *One of the predicated impacts of the implementation of the BRT is a reduction in the auto-driver mode split within the Lakeview area compared to that of the 2031 "BAU" scenarios (Scenarios 1A, 1B, and 2). Please note that this 2031 BRT modification to the mode split was not implemented in the TCR Addendum as a conservative measure, but we believe it is appropriate to include it now in the phasing analysis, which is meant to be a more detailed analysis of the road network capacity and to better align with the City's proposed delivery timing of the BRT (i.e., Phase 2 implemented by 2031).*

Based on information presented in the Region of Peel's *50% Sustainable Mode Share Target Background Paper* which was produced to inform the Region of Peel's 2019 *Long Range Transportation Plan*, Lakeview Village and the surrounding area fall within a "Rapid Transit Corridor Super-Zone". Table 8 of the Sustainable Mode Paper provides a summary of the modal split targets for 2021, 2031, and 2041. The 2031 modal splits in Table 8 were applied to both the weekday a.m. and p.m. peak hours in Analysis Scenario 3, reducing the auto driver share to 55.5% for analysis purposes.

Development statistics, infrastructure details, and analysis details (such as trip generation and Synchro settings) that inform Analysis Scenario 3B are summarized in **Table 2**.

Table 1 – Rangeview Estates Trip Generation

Land Use	Parameters	Peak Hour of Trip Generator					
		Weekday AM			Weekday PM		
		In	Out	Total	In	Out	Total
Multifamily Housing (Mid-Rise) LUC 221 *Dense Multi-use Urban Context* 2,775 units	Average Rate	0.2			0.18		
	Distribution	12%	88%	-	72%	28%	-
	Gross Vehicle Site Trips	67	488	555	360	140	500
	Vehicle to Person Trip Conversion Rate	1.9			2.0		
	Total External Person Trips	127	928	1,055	719	280	999
	Mode Split Reduction	-57	-413	-470	-320	-124	-144
	Total Auto Driver Trips	70	515	585	399	156	555
Multifamily Housing (High-Rise) LUC 222 *Dense Multi-use Urban Context* 925 units	Average Rate or Fitted Curve Equation	Ln(T) = 0.84 Ln(X) - 0.65			2.17		
	Distribution	12%	88%	-	70%	30%	-
	Gross Vehicle Site Trips	19	143	162	123	53	176
	Vehicle to Person Trip Conversion Rate	2.81			2.17		
	Total External Person Trips	55	400	455	267	114	381
	Mode Split Reduction	-24	-178	-202	-119	-51	-170
	Total Auto Driver Trips	31	222	253	148	63	211
Total Rangeview Estates Auto Driver Trips		**101**	**737**	**838**	**547**	**219**	**766**
15% of Total Rangeview Estates Auto Driver Trips		*15*	*111*	*126*	*82*	*33*	*115*

15 inbound and 111 outbound Rangeview Estates site trips were added to the weekday a.m. peak hour analysis. During the weekday p.m. peak hour, 82 inbound and 33 outbound trips were added to the analysis to account for Rangeview Estates site traffic.

Table 2 – Analysis Scenario 3B Details

Analysis Scenario Number	Development Statistics	Infrastructure Details	Analysis Details
3B	LAKEVIEW VILLAGE: • 8,050 residential units (374 townhouse, 5,287 mid-rise, and 2,389 high-rise) • Elementary School (850 Students) • Day Care Center (39 Students) • At-grade Retail associated with residential buildings (133,160 ft² GFA) • Office (745,315 ft² GFA) • Research & Development (745,315 ft² GFA) RANGEVIEW ESTATES: • Traffic volumes based on 15% of total traffic generated by 2,775 mid-rise and 925 high-rise residential units (3,700 units total, as per Official Plan).	• Bus Rapid Transit • Assumes the median-running bus rapid transit (BRT) lanes and multi-modal infrastructure improvements on Lakeshore Road have been implemented, as per the City's *Lakeshore Road Transportation Master Plan* • Maintained addition of dedicated westbound right-turn lanes at Cawthra Road and Dixie Road on Lakeshore Road East applied to Analysis Scenario 1B • Addition of dedicated eastbound right-turn lanes at Hydro Road and Lakefront Promenade on Lakeshore Road East • Southern extensions planned for Ogden Avenue and Haig Boulevard were assumed to NOT be constructed for the purposes of the phasing analysis.	• Trip Generation, Trip Distribution, and Trip Assignment as per TCR Addendum • Mode split percentages used in trip generation were modified to match 2031 modal slit targets for Rapid Transit Corridor "Super-zones", as per Table 8 of the Region of Peel's *50% Sustainable Mode Share Target Background Paper* which was included in the Region's *Long Range Transportation Plan* (2019) • Default Saturation Flow of 1,900vph used in Synchro • Default Lost Time Adjustment (LTA) of 0 seconds applied to all movements with the exception of -1 seconds applied to protected left-turn phases • Lakeshore Road signal timings modified and optimized to reflect BRT median lane operations, such as protected-only westbound and eastbound left-turn phases

Scenario 3B Analysis Results

Based on Synchro capacity analysis, The BRT road network analyzed in Scenario 3 / 3B can accommodate the site trips generated by both the Lakeview Village and Rangeview Estates development levels specified in **Table 2**. No individual movement at a signalized intersection exceeds a v/c ratio of 1.0 during either the weekday a.m. or p.m. peak hour.

A traffic volume figure that shows the assignment of Rangeview Estates site traffic at Lakeshore Road East and a capacity summary table of key intersections are provided in **Appendix A**. Synchro HCM 2000 capacity results are provided in **Appendix B**.

As noted previously, existing Rangeview traffic that will be removed from the study area network and replaced by the redevelopment of the Rangeview Estates area was not removed from the road network as a conservative measure. In addition to the eventual removal of existing Rangeview traffic due to redevelopment, it is also expected that Lakeshore Road may see a reduction in existing eastbound and westbound through traffic upon construction of the

median-running bus rapid transit lanes. This potential reduction in site traffic was also not considered as a conservative measure. In summary, although individual movements are expected to operate at, or approach theoretical capacity, it is possible that changes to existing traffic volumes and travel patterns may allow for "hidden" reserve capacity to become available that is not captured as part of the enclosed analysis.

Summary of Recommendations:

Based on the results of the modified 2031 phasing analysis to include 15% of the predicted Rangeview Estates total future site traffic (Scenario 3B), the following modifications and improvements continue to be recommended to accommodate the development of Lakeview Village and Rangeview Estates and their associated traffic ***prior*** to full build-out. The following phasing analysis recommendations correspond to Analysis Scenario 3/3B, which assume implementation of the Lakeshore Road median-running BRT lanes and associated infrastructure. As stated previously, please note that it was assumed the southern legs of Ogden Avenue and Haig Boulevard would ***not*** be constructed in 2031 as a conservative measure.

- Construction of westbound right-turn lane at Cawthra Road and Lakeshore Road East
- Construction of westbound right-turn lane at Dixie Road and Lakeshore Road East
- Construction of eastbound right-turn lane at Lakefront Promenade and Lakeshore Road East
- Northbound lanes reconfigured at Lakefront Promenade and Lakeshore Road East to include a dedicated left-turn lane and a shared through/right lane
- Construction of eastbound right-turn lane at Hydro Road and Lakeshore Road East
- Northbound lanes reconfigured at Hydro Road and Lakeshore Road East to include a dedicated left-turn lane and a shared left/through/right lane
- Signalization of Hydro Road and Lakeshore Road East intersection, as per Lakeshore Connecting Communities BRT roll plan drawings
- Lakeshore Road East Signal timing plans assumed 130 second cycle lengths during the weekday a.m. peak hour and 140 second cycle lengths during the p.m. peak hour

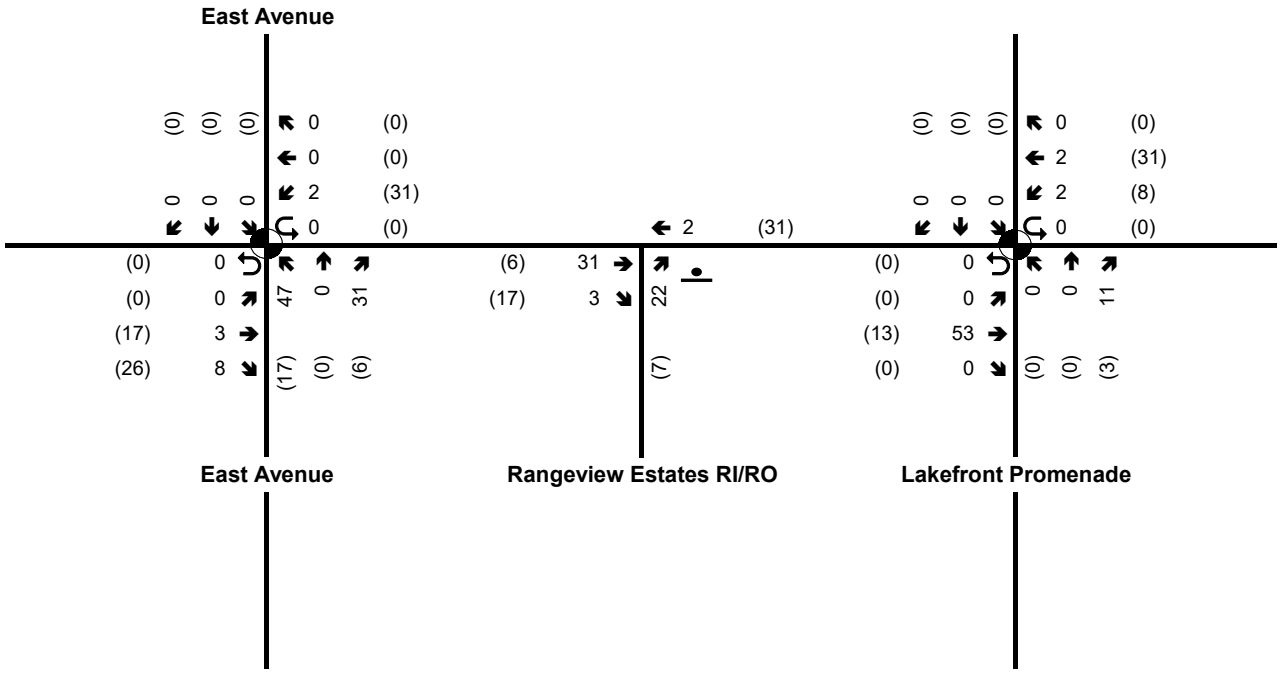
Conclusion

Analysis Scenario 3B, with the infrastructure improvements listed above (consistent with Analysis Scenario 3), can accommodate Lakeview Village site traffic from 8,050 residential units, the school block, select at-grade retail (approximately 133,160 ft^2 GFA), 745,315 ft^2 GFA of Office, and 745,315 ft^2 GFA of Research and Development in addition to 15% of the total traffic predicted to be generated by Rangeview Estates by 2041.

Assuming implementation of the intersection improvements outlined in the foregoing and the planned roll-out of the BRT by the 2031 horizon, development of a portion of Rangeview Estates in addition to all 8,050 residential units, plus all the Innovation Corridor, plus a substantial amount of other non-residential uses within Lakeview Village can be accommodated by the study area road network prior to the southerly extensions of Ogden Avenue and Haig Boulevard into Lakeview Village.

APPENDIX A

Rangeview Estates Traffic Volume Figure (at Lakeshore Road East) and Analysis Scenario 3B Capacity Summary Table



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LEGEND

XX AM Peak Hour Volumes
(XX) PM Peak Hour Volumes
Signalized Intersection
Stop Control
Railroad Crossing

NOT TO SCALE

Figure A-1: Phasing Analysis Scenario 3B
2031 Rangeview Estates Site Traffic Volumes

TABLE A-1: Scenario 3B (2031 BRT) Lakeshore Road Signalized Intersection Capacity Analysis Summary

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Signalized							
Commercial Access/Cawthra Road & Lakeshore Road East	*Overall*	*0.80*	24	C	*0.90*	36	D
	EBL	0.86	40	D	0.87	64	E
	EBTR	0.59	13	B	0.46	16	B
	WBL	0.02	19	B	0.00	0	0
	WBT	0.67	27	C	0.94	37	D
	WBR	0.62	10	A	0.53	33	C
	NBLTR	0.00	0	0	0.33	80	E
	SBL	0.76	49	D	0.83	55	E
	SBR	0.39	22	C	0.54	31	C
East Avenue & Lakeshore Road East	*Overall*	*0.94*	*32*	*C*	*0.78*	*17*	*B*
	EBLU	0.47	68	E	0.48	74	E
	EBTR	0.97	34	C	0.76	10	B
	WBLU	0.78	79	E	0.55	68	E
	WBTR	0.70	16	B	0.79	14	B
	NBL	0.89	79	E	0.79	75	E
	NBTR	0.06	42	D	0.07	50	D
	SBL	0.12	43	D	0.11	51	D
	SBTR	0.01	42	D	0.01	50	D
Lakefront Promenade & Lakeshore Road East	*Overall*	*0.88*	*37*	*D*	*0.81*	*31*	*C*
	EBLU	0.55	68	E	0.41	64	E
	EBT	0.86	30	C	0.74	31	C
	EBR	0.41	21	C	0.42	24	C
	WBLU	0.77	74	E	0.87	79	E
	WBT	0.54	21	C	0.64	5	A
	NBL	0.75	50	D	0.86	72	E
	NBTR	0.92	70	E	0.23	46	D
Street F/Ogden Avenue & Lakeshore Road East	*Overall*	*0.71*	*12*	*B*	*0.80*	*22*	*C*
	EBLU	0.72	58	E	0.72	53	D
	EBTR	0.69	5	A	0.52	14	B
	WBLU	0.26	80	E	-	-	-
	WBTR	0.56	8	A	0.85	20	C
	NBL	0.01	60	E	0.02	50	D
	NBTR	0.00	64	E	0.00	51	D
	SBL	0.50	55	E	0.72	74	E
	SBTR	0.05	55	D	0.07	55	E

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Signalized							
Hydro Road/Laneway & Lakeshore Road East	*Overall*	*0.96*	*46*	*D*	*0.84*	*49*	*D*
	EBLU	0.12	74	E	0.15	**88**	**F**
	EBT	**1.00**	50	D	0.83	54	D
	EBR	0.37	17	B	0.43	49	D
	WBLU	0.91	**89**	**F**	0.84	43	D
	WBTR	0.53	12	B	0.70	41	D
	NBL	0.93	77	E	0.87	71	E
	NBLTR	0.96	**82**	**F**	0.35	46	D
	SBLTR	0.01	63	E	0.00	69	E
Street I/Haig Boulevard & Lakeshore Road East	*Overall*	*0.76*	*23*	*C*	*0.76*	*27*	*C*
	EBLU	0.58	46	D	0.59	62	E
	EBT	0.79	17	B	0.53	18	B
	WBU	0.36	50	D	0.33	64	E
	WBTR	0.59	27	C	0.80	29	C
	SBLTR	0.35	59	E	0.54	65	E
Commercial Access/Dixie Road & Lakeshore Road East	*Overall*	*0.87*	*36*	*D*	*0.93*	*43*	*D*
	EBL	0.87	53	D	0.77	69	E
	EBTR	0.57	11	B	0.49	5	A
	WBL	0.25	66	E	0.06	68	E
	WBT	0.95	65	E	0.99	67	E
	WBR	0.13	35	C	0.22	30	C
	NBLTR	0.21	72	E	0.31	**82**	**F**
	SBL	0.65	60	E	0.74	60	E
	SBR	0.39	19	B	0.83	41	D

APPENDIX B

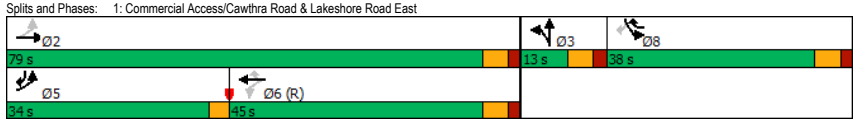
Analysis Scenario 3B Synchro Capacity Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	482	1402	0	3	941	749	0	0	0	622	0	379
Future Volume (vph)	482	1402	0	3	941	749	0	0	0	622	0	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	15.0		70.0	0.0		0.0	200.0		0.0
Storage Lanes	1		0	1		1	0		0	2		1
Taper Length (m)	30.0			40.0			7.5			7.5		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		297.1			137.6			85.4			591.2	
Travel Time (s)		21.4			9.9			6.1			42.6	
Lane Group Flow (vph)	482	1402	0	3	941	749	0	0	0	622	0	379
Turn Type	pm+pt	NA		Perm	NA	pm+ov				Prot		pm+ov
Protected Phases	5	2			6	8	3	3		8		5
Permitted Phases	2			6		6						8
Detector Phase	5	2		6	6	8	3	3		8		5
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0	8.0	7.0	7.0		8.0		5.0
Minimum Split (s)	17.0	38.0		38.0	38.0	35.0	13.0	13.0		35.0		17.0
Total Split (s)	34.0	79.0		45.0	45.0	38.0	13.0	13.0		38.0		34.0
Total Split (%)	26.2%	60.8%		34.6%	34.6%	29.2%	10.0%	10.0%		29.2%		26.2%
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	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-1.0	0.0		0.0	0.0	0.0		0.0		-1.0		0.0
Total Lost Time (s)	2.0	6.0		6.0	6.0	6.0		6.0		5.0		3.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Recall Mode	None	Max		C-Max	C-Max	None	None	None		None		None
v/c Ratio	0.85	0.59		0.02	0.67	0.70				0.76		0.45
Control Delay	38.6	13.9		21.7	28.1	7.1				51.2		10.6
Queue Delay	0.0	0.0		0.0	0.0	0.0				0.0		0.0
Total Delay	38.6	13.9		21.7	28.1	7.1				51.2		10.6
Queue Length 50th (m)	77.9	97.3		0.2	79.2	6.6				76.0		28.4
Queue Length 95th (m)	#142.4	135.2		m0.6	115.5	6.3				90.2		44.7
Internal Link Dist (m)		273.1			113.6			61.4			567.2	
Turn Bay Length (m)	15.0			15.0		70.0				200.0		
Base Capacity (vph)	568	2381		147	1405	1090				876		851
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	0.85	0.59		0.02	0.67	0.69				0.71		0.45

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 105
Control Type: Actuated-Coordinated
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: 1: Commercial Access/Cawthra Road & Lakeshore Road East



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	482	1402	0	3	941	749	0	0	0	622	0	379
Future Volume (vph)	482	1402	0	3	941	749	0	0	0	622	0	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	6.0		6.0	6.0	6.0				5.0		3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00				0.97		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97				1.00		0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00				1.00		1.00
Frt	1.00	1.00		1.00	1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95		1.00
Satd. Flow (prot)	1754	3579		1821	3476	1483				3278		1518
Flt Permitted	0.17	1.00		0.19	1.00	1.00				0.95		1.00
Satd. Flow (perm)	305	3579		367	3476	1483				3278		1518
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	482	1402	0	3	941	749	0	0	0	622	0	379
RTOR Reduction (vph)	0	0	0	0	0	110	0	0	0	0	0	92
Lane Group Flow (vph)	482	1402	0	3	941	639	0	0	0	622	0	287
Confl. Peds. (#/hr)	25		8	8		25	13					13
Heavy Vehicles (%)	4%	2%	0%	0%	5%	7%	0%	0%	0%	8%	0%	6%
Turn Type	pm+pt	NA		Perm	NA	pm+ov				Prot		pm+ov
Protected Phases	5	2			6	8	3	3		8		5
Permitted Phases	2			6		6						8
Actuated Green, G (s)	86.5	86.5		52.6	52.6	84.1				31.5		62.4
Effective Green, g (s)	87.5	86.5		52.6	52.6	84.1				32.5		62.4
Actuated g/C Ratio	0.67	0.67		0.40	0.40	0.65				0.25		0.48
Clearance Time (s)	3.0	6.0		6.0	6.0	6.0				6.0		3.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	560	2381		148	1406	1027				819		728
v/s Ratio Prot	c0.21	0.39			c0.27	0.15				c0.19		0.09
v/s Ratio Perm	0.37			0.01		0.28						0.10
v/c Ratio	0.86	0.59		0.02	0.67	0.62				0.76		0.39
Uniform Delay, d1	27.2	12.0		23.2	31.6	13.6				45.1		21.7
Progression Factor	1.00	1.00		0.80	0.79	0.63				1.00		1.00
Incremental Delay, d2	12.8	1.1		0.2	2.0	0.9				4.1		0.4
Delay (s)	40.0	13.0		18.7	27.0	9.5				49.2		22.0
Level of Service	D	B		B	C	A				D		C
Approach Delay (s)		19.9			19.2			0.0			38.9	
Approach LOS		B			B			A			D	

Intersection Summary					
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.80				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0		
Intersection Capacity Utilization	83.7%	ICU Level of Service	E		
Analysis Period (min)	15				

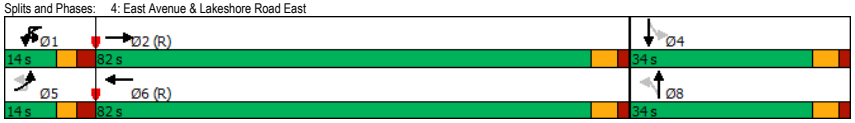
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	1805	173	86	18	1457	9	247	1	39	32	1
Future Volume (vph)	37	1805	173	86	18	1457	9	247	1	39	32	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.7	3.5	3.7	3.5	3.5	3.7	3.7	3.5	3.7
Storage Length (m)	20.0		25.0		60.0		20.0	0.0		0.0	20.0	
Storage Lanes	1		0		1		0	1		0	1	
Taper Length (m)	40.0				50.0			70.0			20.0	
Right Turn on Red			Yes				Yes			Yes		
Link Speed (k/h)		50				50			50			50
Link Distance (m)		95.7				101.7			208.9			195.3
Travel Time (s)		6.9				7.3			15.0			14.1
Lane Group Flow (vph)	37	1978	0	0	104	1466	0	247	40	0	32	11
Turn Type	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA
Protected Phases	5	2		1	1	6			8			4
Permitted Phases								8			4	
Detector Phase	5	2		1	1	6		8	8		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)	14.0	24.0		14.0	14.0	24.0		28.0	28.0		28.0	28.0
Total Split (s)	14.0	82.0		14.0	14.0	82.0		34.0	34.0		34.0	34.0
Total Split (%)	10.8%	63.1%		10.8%	10.8%	63.1%		26.2%	26.2%		26.2%	26.2%
Yellow Time (s)	3.0	4.0		3.0	3.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	0.0			-1.0	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	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	None	C-Max		None	None		None	None
v/c Ratio	0.30	0.97			0.79	0.68		0.90	0.12		0.12	0.03
Control Delay	67.3	34.6			90.8	16.5		84.1	21.4		42.6	21.0
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	67.3	34.6			90.8	16.5		84.1	21.4		42.6	21.0
Queue Length 50th (m)	8.5	266.4			26.5	101.7		61.0	2.9		6.6	0.2
Queue Length 95th (m)	m14.9	#317.3			m#57.4	130.0		#104.9	12.7		15.6	5.4
Internal Link Dist (m)		71.7				77.7			184.9			171.3
Turn Bay Length (m)	20.0				60.0						20.0	
Base Capacity (vph)	123	2038			132	2169		295	362		295	359
Starvation Cap Reductn	0	0			0	0		0	0		0	0
Spillback Cap Reductn	0	0			0	0		0	0		0	0
Storage Cap Reductn	0	0			0	0		0	0		0	0
Reduced v/c Ratio	0.30	0.97			0.79	0.68		0.84	0.11		0.11	0.03

Intersection Summary

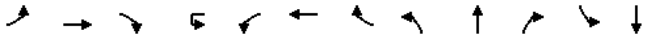
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: East Avenue & Lakeshore Road East



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width (m)	3.7
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Right Turn on Red	Yes
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	1805	173	86	18	1457	9	247	1	39	32	1
Future Volume (vph)	37	1805	173	86	18	1457	9	247	1	39	32	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.7	3.5	3.7	3.5	3.5	3.7	3.7	3.5	3.7
Total Lost time (s)	5.0	6.0			5.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.99			1.00	1.00		1.00	0.99		1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.99	1.00		1.00	1.00
Frt	1.00	0.99			1.00	1.00		1.00	0.85		1.00	0.86
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1785	3422			1785	3377		1741	1587		1782	1633
Flt Permitted	0.95	1.00			0.95	1.00		0.75	1.00		0.73	1.00
Satd. Flow (perm)	1785	3422			1785	3377		1375	1587		1371	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	37	1805	173	86	18	1457	9	247	1	39	32	1
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	21	0	0	8
Lane Group Flow (vph)	37	1973	0	0	104	1466	0	247	19	0	32	3
Confl. Peds. (#/hr)	11		11		11		11	3		1	1	
Heavy Vehicles (%)	0%	5%	2%	0%	0%	8%	2%	2%	0%	2%	0%	0%
Turn Type	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA
Protected Phases	5	2		1	1	6			8			4
Permitted Phases								8			4	
Actuated Green, G (s)	4.8	77.2			8.7	81.1		26.1	26.1		26.1	26.1
Effective Green, g (s)	5.8	77.2			9.7	81.1		26.1	26.1		26.1	26.1
Actuated g/C Ratio	0.04	0.59			0.07	0.62		0.20	0.20		0.20	0.20
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	79	2032			133	2106		276	318		275	327
v/s Ratio Prot	0.02	c0.58			c0.06	c0.43			0.01			0.00
v/s Ratio Perm								c0.18			0.02	
v/c Ratio	0.47	0.97			0.78	0.70		0.89	0.06		0.12	0.01
Uniform Delay, d1	60.6	25.3			59.1	16.3		50.6	42.0		42.5	41.6
Progression Factor	1.07	0.85			0.94	0.90		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.6	12.4			23.6	1.8		28.5	0.1		0.2	0.0
Delay (s)	68.4	34.0			79.2	16.4		79.2	42.1		42.7	41.6
Level of Service	E	C			E	B		E	D		D	D
Approach Delay (s)		34.6				20.6			74.0			42.4
Approach LOS		C				C			E			D

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

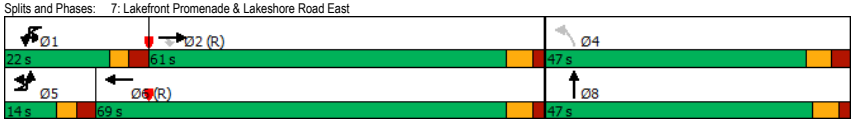
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	3.7
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	10
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	3
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	59	0	1391	359	5	164	1004	0	350	0	520	0
Future Volume (vph)	59	0	1391	359	5	164	1004	0	350	0	520	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.5	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.7
Storage Length (m)		15.0		10.0		15.0		0.0	90.0		0.0	0.0
Storage Lanes		1		1		1		0	1		0	0
Taper Length (m)		40.0				55.0			30.0			7.5
Right Turn on Red				Yes				Yes			Yes	
Link Speed (k/h)			50				50			50		
Link Distance (m)			68.0				88.5			238.4		
Travel Time (s)			4.9				6.4			17.2		
Lane Group Flow (vph)	0	59	1391	359	0	169	1004	0	350	520	0	0
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		custom	NA		
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					4			
Detector Phase	5	5	2	2	1	1	6		4	8		
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	5.0		
Minimum Split (s)	14.0	14.0	26.0	26.0	14.0	14.0	26.0		29.0	24.0		
Total Split (s)	14.0	14.0	61.0	61.0	22.0	22.0	69.0		47.0	47.0		
Total Split (%)	10.8%	10.8%	46.9%	46.9%	16.9%	16.9%	53.1%		36.2%	36.2%		
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	3.0	4.0		4.0	4.0		
All-Red Time (s)	3.0	3.0	2.0	2.0	3.0	3.0	2.0		3.0	2.0		
Lost Time Adjust (s)		-1.0	0.0	0.0		-1.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0	6.0		5.0	6.0		7.0	6.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	C-Max	C-Max	None	None	C-Max		None	None		
v/c Ratio		0.45	0.86	0.46		0.77	0.53		0.75	0.94		
Control Delay		70.6	31.5	15.0		81.4	22.1		53.6	56.1		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		70.6	31.5	15.0		81.4	22.1		53.6	56.1		
Queue Length 50th (m)		15.9	148.7	24.7		44.7	62.5		79.4	91.7		
Queue Length 95th (m)		m19.3	m170.6	m29.0		#75.7	102.7		111.8	#151.2		
Internal Link Dist (m)			44.0				64.5			214.4		
Turn Bay Length (m)		15.0		10.0		15.0			90.0			
Base Capacity (vph)		130	1613	779		232	1878		528	606		
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		0.45	0.86	0.46		0.73	0.53		0.66	0.86		

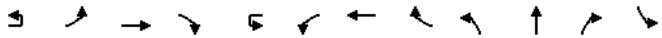
Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 109 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 7: Lakefront Promenade & Lakeshore Road East



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	0
Future Volume (vph)	0	0
Ideal Flow (vphpl)	1900	1900
Lane Width (m)	3.7	3.7
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Right Turn on Red		Yes
Link Speed (k/h)	50	
Link Distance (m)	69.4	
Travel Time (s)	5.0	
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		
Minimum Split (s)		
Total Split (s)		
Total Split (%)		
Yellow Time (s)		
All-Red Time (s)		
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Recall Mode		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)	45.4	
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	59	0	1391	359	5	164	1004	0	350	0	520	0
Future Volume (vph)	59	0	1391	359	5	164	1004	0	350	0	520	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.5	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.7
Total Lost time (s)		5.0	6.0	6.0		5.0	6.0		7.0	6.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frpb, ped/bikes		1.00	1.00	0.97		1.00	1.00		1.00	0.98		
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		0.98	1.00		
Frt		1.00	1.00	0.85		1.00	1.00		1.00	0.85		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1825	3476	1524		1751	3476		1716	1565		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (perm)		1825	3476	1524		1751	3476		1716	1565		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	59	0	1391	359	5	164	1004	0	350	0	520	0
RTOR Reduction (vph)	0	0	0	72	0	0	0	0	0	119	0	0
Lane Group Flow (vph)	0	59	1391	287	0	169	1004	0	350	401	0	0
Confl. Peds. (#/hr)				2		2			11		5	5
Heavy Vehicles (%)	0%	0%	5%	2%	0%	2%	5%	0%	2%	0%	2%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		custom	NA		
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					4			
Actuated Green, G (s)		6.7	60.4	60.4		15.4	69.1		35.2	36.2		
Effective Green, g (s)		7.7	60.4	60.4		16.4	69.1		35.2	36.2		
Actuated g/C Ratio		0.06	0.46	0.46		0.13	0.53		0.27	0.28		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		7.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		108	1615	708		220	1847		464	435		
v/s Ratio Prot		0.03	c0.40			c0.10	0.29			c0.26		
v/s Ratio Perm				0.19					0.20			
v/c Ratio		0.55	0.86	0.41		0.77	0.54		0.75	0.92		
Uniform Delay, d1		59.5	31.1	23.0		55.0	20.1		43.4	45.5		
Progression Factor		1.09	0.83	0.88		1.09	0.99		1.00	1.00		
Incremental Delay, d2		3.4	4.0	1.1		14.2	1.1		6.8	24.9		
Delay (s)		68.2	29.7	21.3		74.3	20.9		50.3	70.4		
Level of Service		E	C	C		E	C		D	E		
Approach Delay (s)			29.3				28.6			62.3		
Approach LOS			C				C			E		

Intersection Summary				
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.0	
Intersection Capacity Utilization	94.7%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

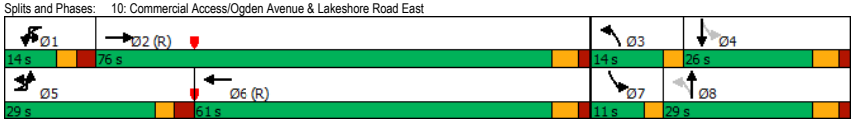
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	0
Future Volume (vph)	0	0
Ideal Flow (vphpl)	1900	1900
Lane Width	3.7	3.7
Total Lost time (s)		
Lane Util. Factor		
Frpb, ped/bikes		
Flpb, ped/bikes		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	0	0
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Confl. Peds. (#/hr)		11
Heavy Vehicles (%)	0%	0%
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)	0.0	
Approach LOS	A	

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	201	1746	3	2	7	984	118	1	0	3	105
Future Volume (vph)	7	201	1746	3	2	7	984	118	1	0	3	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.5	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.5
Storage Length (m)		85.0		30.0		115.0		0.0	90.0		0.0	35.0
Storage Lanes		1		0		1		0	1		0	1
Taper Length (m)		50.0				50.0			30.0			70.0
Right Turn on Red				Yes				Yes			Yes	
Link Speed (k/h)			50				50			50		
Link Distance (m)			94.1				85.5			162.6		
Travel Time (s)			6.8				6.2			11.7		
Lane Group Flow (vph)	0	208	1749	0	0	9	1102	0	1	3	0	105
Turn Type	Prot	Prot	NA		Prot	Prot	NA		pm+pt	NA		pm+pt
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases									8			4
Detector Phase	5	5	2		1	1	6		3	8		7
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0	8.0		5.0	8.0		5.0
Minimum Split (s)	14.0	14.0	24.0		14.0	14.0	24.0		14.0	26.0		11.0
Total Split (s)	29.0	29.0	76.0		14.0	14.0	61.0		14.0	29.0		11.0
Total Split (%)	22.3%	22.3%	58.5%		10.8%	10.8%	46.9%		10.8%	22.3%		8.5%
Yellow Time (s)	3.0	3.0	4.0		3.0	3.0	4.0		3.0	4.0		3.0
All-Red Time (s)	3.0	3.0	2.0		3.0	3.0	2.0		0.0	2.0		0.0
Lost Time Adjust (s)		-1.0	0.0			-1.0	0.0		-1.0	0.0		-1.0
Total Lost Time (s)		5.0	6.0			5.0	6.0		2.0	6.0		2.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes		Yes	Yes		Yes
Recall Mode	None	None	C-Max		None	None	C-Max		None	None		None
v/c Ratio		0.72	0.63			0.07	0.53		0.01	0.01		0.56
Control Delay		61.5	3.6			70.2	7.1		50.0	0.0		65.8
Queue Delay		0.0	0.1			0.0	0.0		0.0	0.0		0.0
Total Delay		61.5	3.7			70.2	7.1		50.0	0.0		65.8
Queue Length 50th (m)		53.5	29.4			2.3	44.5		0.3	0.0		26.4
Queue Length 95th (m)		m65.8	69.8			m4.6	m61.3		1.9	0.0		41.5
Internal Link Dist (m)			70.1				61.5			138.6		
Turn Bay Length (m)		85.0				115.0			90.0			35.0
Base Capacity (vph)		336	2781			124	2069		197	403		187
Starvation Cap Reductn		0	104			0	0		0	0		0
Spillback Cap Reductn		0	87			0	0		0	0		0
Storage Cap Reductn		0	0			0	0		0	0		0
Reduced v/c Ratio		0.62	0.65			0.07	0.53		0.01	0.01		0.56

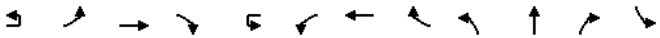
Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 10: Commercial Access/Ogden Avenue & Lakeshore Road East



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	59
Future Volume (vph)	1	59
Ideal Flow (vphpl)	1900	1900
Lane Width (m)	3.7	3.5
Storage Length (m)		35.0
Storage Lanes		0
Taper Length (m)		
Right Turn on Red		Yes
Link Speed (k/h)	50	
Link Distance (m)	360.5	
Travel Time (s)	26.0	
Lane Group Flow (vph)	60	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	8.0	
Minimum Split (s)	26.0	
Total Split (s)	26.0	
Total Split (%)	20.0%	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	None	
v/c Ratio	0.38	
Control Delay	21.5	
Queue Delay	0.0	
Total Delay	21.5	
Queue Length 50th (m)	0.3	
Queue Length 95th (m)	13.7	
Internal Link Dist (m)	336.5	
Turn Bay Length (m)		
Base Capacity (vph)	293	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.20	

Intersection Summary



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	201	1746	3	2	7	984	118	1	0	3	105
Future Volume (vph)	7	201	1746	3	2	7	984	118	1	0	3	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.5	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.5
Total Lost time (s)		5.0	6.0			5.0	6.0		2.0	6.0		2.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	0.98		1.00	0.85		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1751	3443			1797	3302		1786	1579		1747
Flt Permitted		0.95	1.00			0.95	1.00		1.00	1.00		0.87
Satd. Flow (perm)		1751	3443			1797	3302		1880	1579		1599
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	7	201	1746	3	2	7	984	118	1	0	3	105
RTOR Reduction (vph)	0	0	0	0	0	0	5	0	0	3	0	0
Lane Group Flow (vph)	0	208	1749	0	0	9	1097	0	1	0	0	105
Confl. Peds. (#/hr)		7		8		8		7	1		1	1
Heavy Vehicles (%)	0%	2%	6%	2%	0%	2%	9%	2%	2%	2%	2%	2%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		pm+pt	NA		pm+pt
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases									8			4
Actuated Green, G (s)		20.5	95.4			1.6	76.5		2.8	1.6		15.0
Effective Green, g (s)		21.5	95.4			2.6	76.5		4.8	1.6		16.0
Actuated g/C Ratio		0.17	0.73			0.02	0.59		0.04	0.01		0.12
Clearance Time (s)		6.0	6.0			6.0	6.0		3.0	6.0		3.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		289	2526			35	1943		67	19		209
v/s Ratio Prot		c0.12	c0.51			0.01	0.33		0.00	0.00		c0.04
v/s Ratio Perm									0.00			0.02
v/c Ratio		0.72	0.69			0.26	0.56		0.01	0.00		0.50
Uniform Delay, d1		51.4	9.4			62.7	16.5		60.3	63.4		53.2
Progression Factor		1.03	0.44			1.22	0.41		1.00	1.00		1.00
Incremental Delay, d2		5.3	1.0			3.4	1.0		0.1	0.0		1.9
Delay (s)		58.4	5.1			79.7	7.8		60.4	63.5		55.1
Level of Service		E	A			E	A		E	E		E
Approach Delay (s)			10.8				8.4			62.7		
Approach LOS			B				A			E		

Intersection Summary				
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	81.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

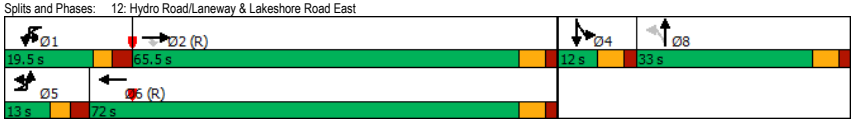
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	59
Future Volume (vph)	1	59
Ideal Flow (vphpl)	1900	1900
Lane Width	3.7	3.5
Total Lost time (s)	6.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	1584	
Flt Permitted	1.00	
Satd. Flow (perm)	1584	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1	59
RTOR Reduction (vph)	54	0
Lane Group Flow (vph)	6	0
Confl. Peds. (#/hr)		1
Heavy Vehicles (%)	2%	2%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	10.8	
Effective Green, g (s)	10.8	
Actuated g/C Ratio	0.08	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	131	
v/s Ratio Prot	0.00	
v/s Ratio Perm		
v/c Ratio	0.05	
Uniform Delay, d1	54.9	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	55.0	
Level of Service	D	
Approach Delay (s)	55.0	
Approach LOS	E	

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	3	1482	348	178	942	0	357	0	491	2	0
Future Volume (vph)	1	3	1482	348	178	942	0	357	0	491	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.7	3.7
Storage Length (m)		25.0		50.0	30.0		0.0	90.0		0.0	0.0	
Storage Lanes		1		1	1		0	1		0	0	
Taper Length (m)		45.0			50.0			30.0			7.6	
Right Turn on Red				Yes			Yes			Yes		
Link Speed (k/h)			50			50			50			50
Link Distance (m)			138.4			186.1			230.8			173.9
Travel Time (s)			10.0			13.4			16.6			12.5
Lane Group Flow (vph)	0	4	1482	348	178	942	0	321	527	0	0	11
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Perm	NA		Split	NA
Protected Phases	5	5	2		1	6			8		4	4
Permitted Phases				2				8				
Detector Phase	5	5	2	2	1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	8.0	8.0	7.0	8.0		8.0	8.0		5.0	5.0
Minimum Split (s)	13.0	13.0	24.0	24.0	13.0	24.0		26.0	26.0		11.0	11.0
Total Split (s)	13.0	13.0	65.5	65.5	19.5	72.0		33.0	33.0		12.0	12.0
Total Split (%)	10.0%	10.0%	50.4%	50.4%	15.0%	55.4%		25.4%	25.4%		9.2%	9.2%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0	3.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	0.0	0.0	-1.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		5.0	6.0	6.0	5.0	6.0		6.0	6.0			6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	C-Max	C-Max	None	C-Max		None	None		None	None
v/c Ratio		0.04	0.94	0.43	0.91	0.47		0.93	0.97			0.05
Control Delay		67.5	37.2	8.6	93.7	9.1		80.0	62.1			0.4
Queue Delay		0.0	1.7	0.0	0.0	0.2		0.0	40.8			0.0
Total Delay		67.5	38.9	8.6	93.7	9.2		80.0	103.0			0.4
Queue Length 50th (m)		1.2	135.4	16.3	40.0	71.7		80.4	91.8			0.0
Queue Length 95th (m)		m2.1	#233.7	25.5	#87.1	95.5		#162.2	#189.7			0.0
Internal Link Dist (m)			114.4			162.1			206.8			149.9
Turn Bay Length (m)		25.0		50.0	30.0			90.0				
Base Capacity (vph)		112	1576	803	195	1986		347	543			244
Starvation Cap Reductn		0	34	0	0	303		0	0			0
Spillback Cap Reductn		0	0	0	0	0		0	113			0
Storage Cap Reductn		0	0	0	0	0		0	0			0
Reduced v/c Ratio		0.04	0.96	0.43	0.91	0.56		0.93	1.23			0.05

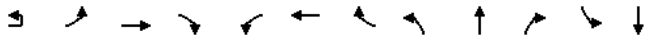
Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 12: Hydro Road/Laneway & Lakeshore Road East



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Lane Width (m)	3.7
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Right Turn on Red	Yes
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	3	1482	348	178	942	0	357	0	491	2	0
Future Volume (vph)	1	3	1482	348	178	942	0	357	0	491	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.7	3.7
Total Lost time (s)		5.0	6.0	6.0	5.0	6.0		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95		0.95	0.95			1.00
Frpb, ped/bikes		1.00	1.00	0.97	1.00	1.00		1.00	1.00			0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Frt		1.00	1.00	0.85	1.00	1.00		1.00	0.86			0.89
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99
Satd. Flow (prot)		1825	3444	1546	1750	3380		1659	1534			1653
Flt Permitted		0.95	1.00	1.00	0.95	1.00		0.75	0.98			0.99
Satd. Flow (perm)		1825	3444	1546	1750	3380		1311	1506			1653
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	3	1482	348	178	942	0	357	0	491	2	0
RTOR Reduction (vph)	0	0	0	100	0	0	0	0	145	0	0	11
Lane Group Flow (vph)	0	4	1482	248	178	942	0	321	382	0	0	0
Confl. Peds. (#/hr)		2		4	4		2	1				
Heavy Vehicles (%)	0%	0%	6%	2%	2%	8%	0%	2%	0%	2%	0%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Perm	NA		Split	NA
Protected Phases	5	5	2		1	6			8		4	4
Permitted Phases				2				8				
Actuated Green, G (s)		1.4	55.9	55.9	13.5	68.0		34.4	34.4			2.2
Effective Green, g (s)		2.4	55.9	55.9	14.5	68.0		34.4	34.4			2.2
Actuated g/C Ratio		0.02	0.43	0.43	0.11	0.52		0.26	0.26			0.02
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		33	1480	664	195	1768		346	398			27
v/s Ratio Prot		0.00	c0.43		c0.10	0.28						c0.00
v/s Ratio Perm				0.16				0.24	c0.25			
v/c Ratio		0.12	1.00	0.37	0.91	0.53		0.93	0.96			0.01
Uniform Delay, d1		62.8	37.0	25.2	57.1	20.5		46.6	47.1			62.8
Progression Factor		1.16	0.76	0.64	0.94	0.52		1.00	1.00			1.00
Incremental Delay, d2		1.4	22.0	1.4	35.7	1.0		30.2	34.7			0.1
Delay (s)		74.4	50.2	17.4	89.4	11.6		76.8	81.8			62.9
Level of Service		E	D	B	F	B		E	F			E
Approach Delay (s)			44.1			24.0			79.9			62.9
Approach LOS			D			C			E			E

Intersection Summary				
HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.96			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0	
Intersection Capacity Utilization	96.6%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Lane Width	3.7
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	9
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

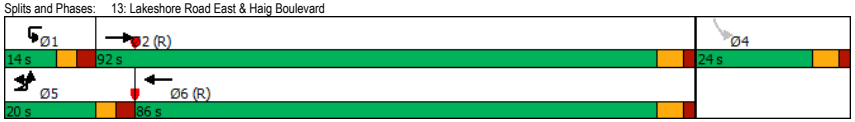
Intersection Summary

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	116	2037	33	1341	41	35	56
Future Volume (vph)	116	2037	33	1341	41	35	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		100.0		0.0	60.0	0.0
Storage Lanes	1		1		0	0	0
Taper Length (m)	50.0		50.0			7.5	
Right Turn on Red					Yes		Yes
Link Speed (k/h)		50		50		50	
Link Distance (m)		186.1		142.9		353.7	
Travel Time (s)		13.4		10.3		25.5	
Lane Group Flow (vph)	116	2037	33	1382	0	91	0
Turn Type	Prot	NA	Prot	NA		Perm	
Protected Phases	5	2	1	6			
Permitted Phases						4	
Detector Phase	5	2	1	6		4	
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0		8.0	
Minimum Split (s)	14.0	22.0	14.0	22.0		24.0	
Total Split (s)	20.0	92.0	14.0	86.0		24.0	
Total Split (%)	15.4%	70.8%	10.8%	66.2%		18.5%	
Yellow Time (s)	3.0	4.0	3.0	4.0		4.0	
All-Red Time (s)	3.0	2.0	3.0	2.0		2.0	
Lost Time Adjust (s)	-1.0	0.0	-1.0	0.0		0.0	
Total Lost Time (s)	5.0	6.0	5.0	6.0		6.0	
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max		None	
v/c Ratio	0.58	0.77	0.24	0.59		0.53	
Control Delay	48.6	17.9	49.4	28.8		39.0	
Queue Delay	0.0	2.6	0.0	0.0		0.0	
Total Delay	48.6	20.5	49.4	28.8		39.0	
Queue Length 50th (m)	29.5	168.4	6.8	161.5		10.0	
Queue Length 95th (m)	m34.0	m190.3	m11.9	191.2		26.6	
Internal Link Dist (m)		162.1		118.9		329.7	
Turn Bay Length (m)	50.0		100.0			60.0	
Base Capacity (vph)	223	2651	135	2360		275	
Starvation Cap Reductn	0	476	0	0		0	
Spillback Cap Reductn	0	0	0	0		0	
Storage Cap Reductn	0	0	0	0		0	
Reduced v/c Ratio	0.52	0.94	0.24	0.59		0.33	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 93 (72%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Lakeshore Road East & Haig Boulevard



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	116	2037	33	1341	41	35	56
Future Volume (vph)	116	2037	33	1341	41	35	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	5.0	6.0		6.0	
Lane Util. Factor	1.00	0.95	1.00	0.95		1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00		0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	0.95	1.00		0.98	
Satd. Flow (prot)	1789	3476	1825	3459		1674	
Flt Permitted	0.95	1.00	0.95	1.00		0.98	
Satd. Flow (perm)	1789	3476	1825	3459		1674	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	116	2037	33	1341	41	35	56
RTOR Reduction (vph)	0	0	0	1	0	47	0
Lane Group Flow (vph)	116	2037	33	1381	0	44	0
Confl. Peds. (#/hr)	7				7	1	3
Heavy Vehicles (%)	2%	5%	0%	5%	2%	2%	2%
Turn Type	Prot	NA	Prot	NA		Perm	
Protected Phases	5	2	1	6			
Permitted Phases						4	
Actuated Green, G (s)	13.6	96.7	5.5	88.6		9.8	
Effective Green, g (s)	14.6	96.7	6.5	88.6		9.8	
Actuated g/C Ratio	0.11	0.74	0.05	0.68		0.08	
Clearance Time (s)	6.0	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	200	2585	91	2357		126	
v/s Ratio Prot	c0.06	c0.59	0.02	0.40			
v/s Ratio Perm						c0.03	
v/c Ratio	0.58	0.79	0.36	0.59		0.35	
Uniform Delay, d1	54.8	10.3	59.7	11.0		57.1	
Progression Factor	0.80	1.50	0.81	2.34		1.00	
Incremental Delay, d2	1.9	1.2	2.1	0.9		1.7	
Delay (s)	45.5	16.7	50.3	26.6		58.7	
Level of Service	D	B	D	C		E	
Approach Delay (s)		18.2		27.2		58.7	
Approach LOS		B		C		E	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

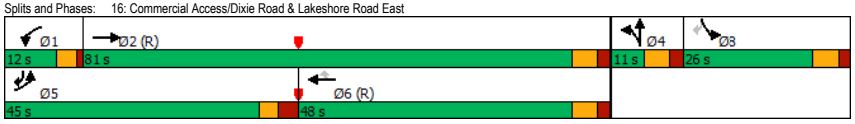
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	603	1346	20	9	947	171	3	0	0	151	0	390
Future Volume (vph)	603	1346	20	9	947	171	3	0	0	151	0	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	265.0		0.0	15.0		30.0	0.0		0.0	90.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	50.0			50.0			7.5			7.5		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		203.1			149.6			114.4			328.7	
Travel Time (s)		14.6			10.8			8.2			23.7	
Lane Group Flow (vph)	603	1366	0	9	947	171	0	3	0	151	0	390
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Prot		pm+ov
Protected Phases	5	2		1	6		4	4		8		5
Permitted Phases						6						8
Detector Phase	5	2		1	6	6	4	4		8		5
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	5.0	5.0		8.0		8.0
Minimum Split (s)	14.0	31.0		12.0	31.0	31.0	11.0	11.0		26.0		14.0
Total Split (s)	45.0	81.0		12.0	48.0	48.0	11.0	11.0		26.0		45.0
Total Split (%)	34.6%	62.3%		9.2%	36.9%	36.9%	8.5%	8.5%		20.0%		34.6%
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)	3.0	2.0		1.0	2.0	2.0	2.0	2.0		2.0		3.0
Lost Time Adjust (s)	-1.0	0.0		-1.0	0.0	0.0		0.0		-1.0		0.0
Total Lost Time (s)	5.0	6.0		3.0	6.0	6.0		6.0		5.0		6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None		None
v/c Ratio	0.87	0.52		0.07	0.84	0.28		0.04		0.65		0.47
Control Delay	55.5	8.9		58.1	49.1	7.0		61.7		66.7		13.6
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	55.5	8.9		58.1	49.1	7.0		61.7		66.7		13.6
Queue Length 50th (m)	158.2	52.1		2.2	118.6	2.1		0.8		37.2		34.5
Queue Length 95th (m)	#260.0	117.7		7.9	145.1	17.9		4.1		57.6		69.6
Internal Link Dist (m)		179.1			125.6			90.4			304.7	
Turn Bay Length (m)	265.0			15.0		30.0				90.0		
Base Capacity (vph)	690	2609		126	1123	614		70		291		837
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	0.87	0.52		0.07	0.84	0.28		0.04		0.52		0.47

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Commercial Access/Dixie Road & Lakeshore Road East



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	603	1346	20	9	947	171	3	0	0	151	0	390
Future Volume (vph)	603	1346	20	9	947	171	3	0	0	151	0	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		3.0	6.0	6.0		6.0		5.0		6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00		1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95		0.95		1.00
Satd. Flow (prot)	1690	3471		1825	3476	1570		1825		1807		1493
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95		0.95		1.00
Satd. Flow (perm)	1690	3471		1825	3476	1570		1825		1807		1493
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	603	1346	20	9	947	171	3	0	0	151	0	390
RTOR Reduction (vph)	0	1	0	0	0	114	0	0	0	0	0	59
Lane Group Flow (vph)	603	1365	0	9	947	57	0	3	0	151	0	331
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	8%	5%	0%	0%	5%	4%	0%	0%	0%	1%	0%	9%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Prot		pm+ov
Protected Phases	5	2		1	6		4	4		8		5
Permitted Phases						6						8
Actuated Green, G (s)	52.1	89.7		1.6	37.2	37.2		1.0		15.7		67.8
Effective Green, g (s)	53.1	89.7		2.6	37.2	37.2		1.0		16.7		67.8
Actuated g/C Ratio	0.41	0.69		0.02	0.29	0.29		0.01		0.13		0.52
Clearance Time (s)	6.0	6.0		4.0	6.0	6.0		6.0		6.0		6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	690	2394		36	994	449		14		232		847
v/s Ratio Prot	c0.36	0.39		0.00	c0.27			c0.00		c0.08		0.16
v/s Ratio Perm						0.04						0.07
v/c Ratio	0.87	0.57		0.25	0.95	0.13		0.21		0.65		0.39
Uniform Delay, d1	35.4	10.3		62.7	45.5	34.4		64.1		53.9		18.7
Progression Factor	1.27	0.97		1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	8.1	0.6		3.6	19.2	0.6		7.6		6.4		0.3
Delay (s)	53.0	10.7		66.4	64.7	35.0		71.7		60.3		19.0
Level of Service	D	B		E	E	C		E		E		B
Approach Delay (s)		23.7			60.2			71.7			30.5	
Approach LOS		C			E			E			C	

Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

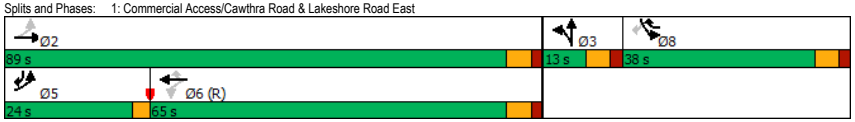
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	977	2	0	1432	646	2	4	1	753	0	425
Future Volume (vph)	309	977	2	0	1432	646	2	4	1	753	0	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	15.0		70.0	0.0		0.0	200.0		0.0
Storage Lanes	1		0	1		1	0		0	2		1
Taper Length (m)	30.0			40.0			7.5			7.5		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		297.1			137.6			85.4			591.2	
Travel Time (s)		21.4			9.9			6.1			42.6	
Lane Group Flow (vph)	309	979	0	0	1432	646	0	7	0	753	0	425
Turn Type	pm+pt	NA		Perm	NA	pm+ov	Split	NA		Prot		pm+ov
Protected Phases	5	2			6	8	3	3		8		5
Permitted Phases	2			6		6						8
Detector Phase	5	2		6	6	8	3	3		8		5
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0	8.0	7.0	7.0		8.0		5.0
Minimum Split (s)	17.0	38.0		38.0	38.0	35.0	13.0	13.0		35.0		17.0
Total Split (s)	24.0	89.0		65.0	65.0	38.0	13.0	13.0		38.0		24.0
Total Split (%)	17.1%	63.6%		46.4%	46.4%	27.1%	9.3%	9.3%		27.1%		17.1%
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	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-1.0	0.0		0.0	0.0	0.0		0.0		-1.0		0.0
Total Lost Time (s)	2.0	6.0		6.0	6.0	6.0		6.0		5.0		3.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Recall Mode	None	Max		C-Max	C-Max	None	None	None		None		None
v/c Ratio	0.85	0.43			0.87	0.55		0.08		0.83		0.56
Control Delay	59.4	13.8			30.1	9.9		61.1		57.6		22.2
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0		0.0
Total Delay	59.4	13.8			30.1	9.9		61.1		57.6		22.2
Queue Length 50th (m)	63.8	67.8			193.9	70.6		1.6		98.5		52.9
Queue Length 95th (m)	#123.4	92.3			#247.0	118.4		6.8		#141.8		97.6
Internal Link Dist (m)		273.1			113.6			61.4			567.2	
Turn Bay Length (m)	15.0					70.0				200.0		
Base Capacity (vph)	370	2268			1642	1166		93		907		765
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	0.84	0.43			0.87	0.55		0.08		0.83		0.56

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 115
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Commercial Access/Cawthra Road & Lakeshore Road East



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	977	2	0	1432	646	2	4	1	753	0	425
Future Volume (vph)	309	977	2	0	1432	646	2	4	1	753	0	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	6.0			6.0	6.0		6.0		5.0		3.0
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.97		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.95		1.00		1.00		0.97
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	1.00			1.00	0.85		0.98		1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00		0.99		0.95		1.00
Satd. Flow (prot)	1772	3542			3614	1505		1858		3437		1573
Flt Permitted	0.06	1.00			1.00	1.00		0.99		0.95		1.00
Satd. Flow (perm)	121	3542			3614	1505		1858		3437		1573
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	309	977	2	0	1432	646	2	4	1	753	0	425
RTOR Reduction (vph)	0	0	0	0	0	110	0	1	0	0	0	67
Lane Group Flow (vph)	309	979	0	0	1432	536	0	6	0	753	0	358
Confl. Peds. (#/hr)	49		20	20		49	23					23
Heavy Vehicles (%)	3%	3%	0%	0%	1%	3%	0%	0%	0%	3%	0%	1%
Turn Type	pm+pt	NA		Perm	NA	pm+ov	Split	NA		Prot		pm+ov
Protected Phases	5	2			6	8	3	3		8		5
Permitted Phases	2			6		6						8
Actuated Green, G (s)	84.8	84.8			58.8	94.6		1.4		35.8		58.8
Effective Green, g (s)	85.8	84.8			58.8	94.6		1.4		36.8		58.8
Actuated g/C Ratio	0.61	0.61			0.42	0.68		0.01		0.26		0.42
Clearance Time (s)	3.0	6.0			6.0	6.0		6.0		6.0		3.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	357	2145			1517	1016		18		903		660
v/s Ratio Prot	c0.15	0.28			c0.40	0.13		c0.00		c0.22		0.09
v/s Ratio Perm	0.38					0.22						0.14
v/c Ratio	0.87	0.46			0.94	0.53		0.33		0.83		0.54
Uniform Delay, d1	44.4	15.0			39.0	11.4		68.8		48.7		30.5
Progression Factor	1.00	1.00			0.69	2.87		1.00		1.00		1.00
Incremental Delay, d2	19.1	0.7			10.1	0.4		10.6		6.7		0.9
Delay (s)	63.6	15.7			37.0	33.1		79.5		55.4		31.4
Level of Service	E	B			D	C		E		E		C
Approach Delay (s)		27.2			35.8			79.5			46.7	
Approach LOS		C			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

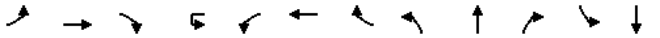
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	49	1574	204	22	39	1859	24	174	15	27	24	1
Future Volume (vph)	49	1574	204	22	39	1859	24	174	15	27	24	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.7	3.5	3.7	3.5	3.5	3.7	3.7	3.5	3.7
Storage Length (m)	20.0		25.0		60.0		20.0	0.0		0.0	20.0	
Storage Lanes	1		0		1		0	1		0	1	
Taper Length (m)	40.0				50.0			70.0			20.0	
Right Turn on Red			Yes				Yes			Yes		
Link Speed (k/h)		50				50			50			50
Link Distance (m)		95.7				101.7			208.9			195.3
Travel Time (s)		6.9				7.3			15.0			14.1
Lane Group Flow (vph)	49	1778	0	0	61	1883	0	174	42	0	24	5
Turn Type	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA
Protected Phases	5	2		1	1	6			8			4
Permitted Phases								8			4	
Detector Phase	5	2		1	1	6		8	8		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)	14.0	24.0		14.0	14.0	24.0		28.0	28.0		28.0	28.0
Total Split (s)	14.0	91.0		15.0	15.0	92.0		34.0	34.0		34.0	34.0
Total Split (%)	10.0%	65.0%		10.7%	10.7%	65.7%		24.3%	24.3%		24.3%	24.3%
Yellow Time (s)	3.0	4.0		3.0	3.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	0.0			-1.0	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	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	None	C-Max		None	None		None	None
v/c Ratio	0.40	0.75			0.47	0.78		0.79	0.14		0.11	0.02
Control Delay	77.8	10.7			71.8	15.0		81.2	24.4		49.2	30.6
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	77.8	10.7			71.8	15.0		81.2	24.4		49.2	30.6
Queue Length 50th (m)	13.6	143.9			16.3	108.5		46.8	3.6		5.8	0.2
Queue Length 95th (m)	m23.0	75.4			m27.6	190.6		70.2	13.7		13.8	4.1
Internal Link Dist (m)		71.7				77.7			184.9			171.3
Turn Bay Length (m)	20.0				60.0						20.0	
Base Capacity (vph)	122	2369			133	2425		279	365		273	334
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	0.40	0.75			0.46	0.78		0.62	0.12		0.09	0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 86 (61%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 4: East Avenue & Lakeshore Road East

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	4
Future Volume (vph)	4
Ideal Flow (vphpl)	1900
Lane Width (m)	3.7
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Right Turn on Red	Yes
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	49	1574	204	22	39	1859	24	174	15	27	24	1
Future Volume (vph)	49	1574	204	22	39	1859	24	174	15	27	24	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.7	3.5	3.7	3.5	3.5	3.7	3.7	3.5	3.7
Total Lost time (s)	5.0	6.0			5.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	0.99		1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.99	1.00		1.00	1.00
Frt	1.00	0.98			1.00	1.00		1.00	0.90		1.00	0.88
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1785	3540			1762	3606		1761	1718		1779	1657
Flt Permitted	0.95	1.00			0.95	1.00		0.75	1.00		0.73	1.00
Satd. Flow (perm)	1785	3540			1762	3606		1399	1718		1366	1657
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	49	1574	204	22	39	1859	24	174	15	27	24	1
RTOR Reduction (vph)	0	6	0	0	0	1	0	0	23	0	0	3
Lane Group Flow (vph)	49	1772	0	0	61	1882	0	174	19	0	24	2
Confl. Peds. (#/hr)	5		5		5		5	7		2	2	
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA
Protected Phases	5	2		1	1	6			8			4
Permitted Phases								8			4	
Actuated Green, G (s)	7.0	92.2			7.8	93.0		22.0	22.0		22.0	22.0
Effective Green, g (s)	8.0	92.2			8.8	93.0		22.0	22.0		22.0	22.0
Actuated g/C Ratio	0.06	0.66			0.06	0.66		0.16	0.16		0.16	0.16
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	102	2331			110	2395		219	269		214	260
v/s Ratio Prot	0.03	0.50			c0.03	c0.52			0.01			0.00
v/s Ratio Perm								c0.12			0.02	
v/c Ratio	0.48	0.76			0.55	0.79		0.79	0.07		0.11	0.01
Uniform Delay, d1	64.0	16.3			63.7	16.5		56.8	50.3		50.6	49.8
Progression Factor	1.11	0.50			0.98	0.71		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.0	2.1			5.2	2.4		17.8	0.1		0.2	0.0
Delay (s)	73.8	10.2			67.7	14.0		74.6	50.4		50.9	49.8
Level of Service	E	B			E	B		E	D		D	D
Approach Delay (s)		11.9				15.7			69.9			50.7
Approach LOS		B				B			E			D

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	4
Future Volume (vph)	4
Ideal Flow (vphpl)	1900
Lane Width	3.7
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	4
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	7
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

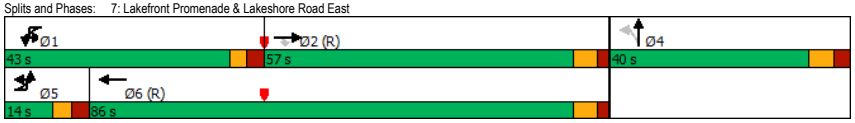
Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	40	0	1115	335	4	370	1389	0	313	0	364	0
Future Volume (vph)	40	0	1115	335	4	370	1389	0	313	0	364	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.5	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.7
Storage Length (m)		15.0		10.0		15.0		0.0	90.0		0.0	0.0
Storage Lanes		1		1		1		0	1		0	0
Taper Length (m)		40.0				55.0			30.0			7.5
Right Turn on Red				Yes				Yes			Yes	
Link Speed (k/h)			50				50			50		
Link Distance (m)			68.0				88.5			238.4		
Travel Time (s)			4.9				6.4			17.2		
Lane Group Flow (vph)	0	40	1115	335	0	374	1389	0	313	364	0	0
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			4		
Permitted Phases				2					4			
Detector Phase	5	5	2	2	1	1	6		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)	14.0	14.0	26.0	26.0	14.0	14.0	26.0		29.0	29.0		
Total Split (s)	14.0	14.0	57.0	57.0	43.0	43.0	86.0		40.0	40.0		
Total Split (%)	10.0%	10.0%	40.7%	40.7%	30.7%	30.7%	61.4%		28.6%	28.6%		
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	3.0	4.0		4.0	4.0		
All-Red Time (s)	3.0	3.0	2.0	2.0	3.0	3.0	2.0		3.0	3.0		
Lost Time Adjust (s)		-1.0	0.0	0.0		-1.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0	6.0		5.0	6.0		7.0	7.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	C-Max	C-Max	None	None	C-Max		Min	Min		
v/c Ratio		0.34	0.74	0.48		0.87	0.63		0.86	0.57		
Control Delay		67.0	32.2	16.9		80.7	5.2		76.3	6.3		
Queue Delay		0.0	0.0	0.0		0.0	0.1		0.0	0.0		
Total Delay		67.0	32.2	16.9		80.7	5.3		76.3	6.3		
Queue Length 50th (m)		11.5	127.4	21.9		83.1	22.1		82.6	0.0		
Queue Length 95th (m)		m17.0	155.4	36.0		m115.7	39.0		#121.3	16.8		
Internal Link Dist (m)			44.0				64.5			214.4		
Turn Bay Length (m)		15.0		10.0		15.0			90.0			
Base Capacity (vph)		118	1506	700		475	2208		407	671		
Starvation Cap Reductn		0	0	0		0	130		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		0.34	0.74	0.48		0.79	0.67		0.77	0.54		

Intersection Summary

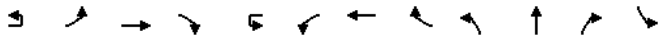
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 113 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Lakefront Promenade & Lakeshore Road East



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	0
Future Volume (vph)	0	0
Ideal Flow (vphpl)	1900	1900
Lane Width (m)	3.7	3.7
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Right Turn on Red		Yes
Link Speed (k/h)	50	
Link Distance (m)	69.4	
Travel Time (s)	5.0	
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		
Minimum Split (s)		
Total Split (s)		
Total Split (%)		
Yellow Time (s)		
All-Red Time (s)		
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Recall Mode		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)	45.4	
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	40	0	1115	335	4	370	1389	0	313	0	364	0
Future Volume (vph)	40	0	1115	335	4	370	1389	0	313	0	364	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.5	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.7
Total Lost time (s)		5.0	6.0	6.0		5.0	6.0		7.0	7.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frpb, ped/bikes		1.00	1.00	0.96		1.00	1.00		1.00	0.98		
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		0.99	1.00		
Frt		1.00	1.00	0.85		1.00	1.00		1.00	0.85		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1825	3614	1506		1750	3579		1730	1564		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (perm)		1825	3614	1506		1750	3579		1730	1564		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	0	1115	335	4	370	1389	0	313	0	364	0
RTOR Reduction (vph)	0	0	0	73	0	0	0	0	0	288	0	0
Lane Group Flow (vph)	0	40	1115	262	0	374	1389	0	313	76	0	0
Confl. Peds. (#/hr)		4		5		5		4	6		6	6
Heavy Vehicles (%)	0%	0%	1%	2%	0%	2%	2%	0%	2%	0%	2%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			4		
Permitted Phases				2					4			
Actuated Green, G (s)		6.5	58.4	58.4		33.3	85.2		29.3	29.3		
Effective Green, g (s)		7.5	58.4	58.4		34.3	85.2		29.3	29.3		
Actuated g/C Ratio		0.05	0.42	0.42		0.24	0.61		0.21	0.21		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		7.0	7.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		97	1507	628		428	2178		362	327		
v/s Ratio Prot		0.02	c0.31			c0.21	0.39			0.05		
v/s Ratio Perm				0.17					c0.18			
v/c Ratio		0.41	0.74	0.42		0.87	0.64		0.86	0.23		
Uniform Delay, d1		64.1	34.4	28.8		50.8	17.5		53.4	46.0		
Progression Factor		0.97	0.81	0.76		1.28	0.23		1.00	1.00		
Incremental Delay, d2		2.2	2.6	1.6		13.9	1.1		18.8	0.4		
Delay (s)		64.2	30.6	23.5		78.7	5.1		72.3	46.4		
Level of Service		E	C	C		E	A		E	D		
Approach Delay (s)			29.9				20.7			58.3		
Approach LOS			C				C			E		

Intersection Summary				
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.0	
Intersection Capacity Utilization	89.7%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

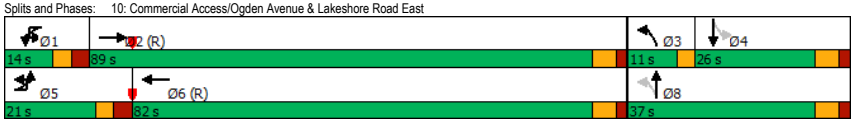
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	0
Future Volume (vph)	0	0
Ideal Flow (vphpl)	1900	1900
Lane Width	3.7	3.7
Total Lost time (s)		
Lane Util. Factor		
Frpb, ped/bikes		
Flpb, ped/bikes		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	0	0
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Confl. Peds. (#/hr)		6
Heavy Vehicles (%)	0%	0%
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)	0.0	
Approach LOS	A	

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	16	152	1426	0	0	1700	99	3	1	1	118	0
Future Volume (vph)	16	152	1426	0	0	1700	99	3	1	1	118	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.5	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.7
Storage Length (m)		85.0		30.0	115.0		0.0	90.0		0.0	35.0	
Storage Lanes		1		0	1		0	1		0	1	
Taper Length (m)		50.0			50.0			30.0			70.0	
Right Turn on Red				Yes			Yes			Yes		
Link Speed (k/h)			50			50			50			50
Link Distance (m)			94.1			85.5			170.6			360.5
Travel Time (s)			6.8			6.2			12.3			26.0
Lane Group Flow (vph)	0	168	1426	0	0	1799	0	3	2	0	118	117
Turn Type	Prot	Prot	NA		Prot	NA		pm+pt	NA		Perm	NA
Protected Phases	5	5	2		1	6		3	8			4
Permitted Phases								8			4	
Detector Phase	5	5	2		1	6		3	8		4	4
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0
Minimum Split (s)	14.0	14.0	24.0		14.0	24.0		11.0	26.0		26.0	26.0
Total Split (s)	21.0	21.0	89.0		14.0	82.0		11.0	37.0		26.0	26.0
Total Split (%)	15.0%	15.0%	63.6%		10.0%	58.6%		7.9%	26.4%		18.6%	18.6%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0		3.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0	2.0		3.0	2.0		0.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	0.0		-1.0	0.0		-1.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	6.0		5.0	6.0		2.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag		Lead			Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes		Yes			Yes	Yes
Recall Mode	None	None	C-Max		None	C-Max		None	None		None	None
v/c Ratio		0.72	0.50			0.83		0.02	0.01		0.72	0.34
Control Delay		59.9	14.0			19.7		44.0	39.0		82.3	3.3
Queue Delay		0.0	0.2			0.3		0.0	0.0		0.0	0.0
Total Delay		59.9	14.2			19.9		44.0	39.0		82.3	3.3
Queue Length 50th (m)		47.9	103.4			264.0		0.7	0.3		31.8	0.0
Queue Length 95th (m)		m#79.3	155.2			#195.0		3.2	2.6		51.6	1.4
Internal Link Dist (m)			70.1			61.5			146.6			336.5
Turn Bay Length (m)		85.0						90.0			35.0	
Base Capacity (vph)		236	2826			2174		209	382		201	380
Starvation Cap Reductn		0	529			66		0	0		0	0
Spillback Cap Reductn		0	211			0		0	0		0	0
Storage Cap Reductn		0	0			0		0	0		0	0
Reduced v/c Ratio		0.71	0.62			0.85		0.01	0.01		0.59	0.31

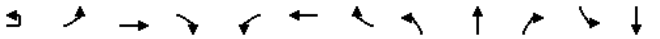
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 74 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 10: Commercial Access/Ogden Avenue & Lakeshore Road East



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	117
Future Volume (vph)	117
Ideal Flow (vphpl)	1900
Lane Width (m)	3.5
Storage Length (m)	35.0
Storage Lanes	0
Taper Length (m)	
Right Turn on Red	Yes
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	16	152	1426	0	0	1700	99	3	1	1	118	0
Future Volume (vph)	16	152	1426	0	0	1700	99	3	1	1	118	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.5	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.7
Total Lost time (s)		5.0	6.0			6.0		2.0	6.0		6.0	6.0
Lane Util. Factor		1.00	0.95			0.95		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00		1.00	0.99		1.00	0.98
Flpb, ped/bikes		1.00	1.00			1.00		1.00	1.00		0.99	1.00
Frt		1.00	1.00			0.99		1.00	0.93		1.00	0.85
Flt Protected		0.95	1.00			1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1753	3614			3538		1782	1726		1739	1565
Flt Permitted		0.95	1.00			1.00		0.52	1.00		0.76	1.00
Satd. Flow (perm)		1753	3614			3538		980	1726		1385	1565
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	16	152	1426	0	0	1700	99	3	1	1	118	0
RTOR Reduction (vph)	0	0	0	0	0	3	0	0	1	0	0	103
Lane Group Flow (vph)	0	168	1426	0	0	1796	0	3	1	0	118	14
Confl. Peds. (#/hr)		7		2	2		7	5		3	3	
Heavy Vehicles (%)	0%	2%	1%	1%	2%	2%	3%	2%	2%	2%	2%	2%
Turn Type	Prot	Prot	NA		Prot	NA		pm+pt	NA		Perm	NA
Protected Phases	5	5	2		1	6		3	8			4
Permitted Phases								8			4	
Actuated Green, G (s)		17.6	107.1			83.5		20.9	20.9		16.6	16.6
Effective Green, g (s)		18.6	107.1			83.5		21.9	20.9		16.6	16.6
Actuated g/C Ratio		0.13	0.76			0.60		0.16	0.15		0.12	0.12
Clearance Time (s)		6.0	6.0			6.0		3.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		232	2764			2110		166	257		164	185
v/s Ratio Prot		c0.10	0.39			c0.51		c0.00	0.00			0.01
v/s Ratio Perm								0.00			c0.09	
v/c Ratio		0.72	0.52			0.85		0.02	0.00		0.72	0.07
Uniform Delay, d1		58.2	6.4			23.2		50.0	50.7		59.5	54.9
Progression Factor		0.76	2.12			0.70		1.00	1.00		1.00	1.00
Incremental Delay, d2		8.8	0.6			3.9		0.0	0.0		14.0	0.2
Delay (s)		53.3	14.1			20.1		50.0	50.7		73.5	55.0
Level of Service		D	B			C		D	D		E	E
Approach Delay (s)			18.2			20.1			50.3			64.3
Approach LOS			B			C			D			E

Intersection Summary				
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	87.4%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	117
Future Volume (vph)	117
Ideal Flow (vphpl)	1900
Lane Width	3.5
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	117
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	5
Heavy Vehicles (%)	2%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

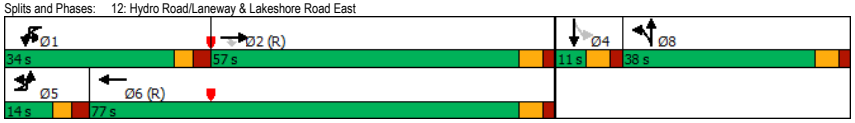
Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	3	1190	382	302	1462	9	358	0	295	2	0
Future Volume (vph)	2	3	1190	382	302	1462	9	358	0	295	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.7	3.7
Storage Length (m)		25.0		50.0	30.0		0.0	90.0		0.0	0.0	
Storage Lanes		1		1	1		0	1		0	0	
Taper Length (m)		45.0			50.0			30.0			7.6	
Right Turn on Red				Yes			Yes			Yes		
Link Speed (k/h)			50			50			50			50
Link Distance (m)			138.4			186.1			230.8			173.9
Travel Time (s)			10.0			13.4			16.6			12.5
Lane Group Flow (vph)	0	5	1190	382	302	1471	0	322	331	0	0	5
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Split	NA		Perm	NA
Protected Phases	5	5	2		1	6		8	8			4
Permitted Phases				2							4	
Detector Phase	5	5	2	2	1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		5.0	5.0
Minimum Split (s)	14.0	14.0	24.0	24.0	14.0	24.0		26.0	26.0		11.0	11.0
Total Split (s)	14.0	14.0	57.0	57.0	34.0	77.0		38.0	38.0		11.0	11.0
Total Split (%)	10.0%	10.0%	40.7%	40.7%	24.3%	55.0%		27.1%	27.1%		7.9%	7.9%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0	3.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	0.0	0.0	-1.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		5.0	6.0	6.0	5.0	6.0		6.0	6.0			6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	C-Max	C-Max	None	C-Max		None	None		None	None
v/c Ratio		0.04	0.77	0.49	0.84	0.63		0.87	0.60			0.02
Control Delay		79.2	49.0	26.1	46.4	32.9		75.0	14.2			0.2
Queue Delay		0.0	18.8	0.0	0.0	21.0		0.0	0.4			0.0
Total Delay		79.2	67.8	26.1	46.4	54.0		75.0	14.6			0.2
Queue Length 50th (m)		1.3	172.4	66.6	72.1	218.5		89.4	13.4			0.0
Queue Length 95th (m)		m3.2	#208.8	100.9	m#111.7	250.2		#142.1	46.2			0.0
Internal Link Dist (m)			114.4			162.1			206.8			149.9
Turn Bay Length (m)		25.0		50.0	30.0			90.0				
Base Capacity (vph)		115	1549	782	381	2342		395	575			221
Starvation Cap Reductn		0	27	0	0	913		0	0			0
Spillback Cap Reductn		0	383	0	0	236		0	46			0
Storage Cap Reductn		0	0	0	0	0		0	0			0
Reduced v/c Ratio		0.04	1.02	0.49	0.79	1.03		0.82	0.63			0.02

Intersection Summary

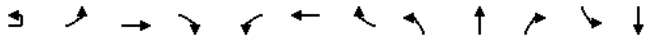
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 96 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Hydro Road/Laneway & Lakeshore Road East



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Lane Width (m)	3.7
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Right Turn on Red	Yes
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	3	1190	382	302	1462	9	358	0	295	2	0
Future Volume (vph)	2	3	1190	382	302	1462	9	358	0	295	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.7	3.7
Total Lost time (s)		5.0	6.0	6.0	5.0	6.0		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95		0.95	0.95			1.00
Frpb, ped/bikes		1.00	1.00	0.96	1.00	1.00		1.00	1.00			1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Frt		1.00	1.00	0.85	1.00	1.00		1.00	0.87			0.92
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	0.99			0.98
Satd. Flow (prot)		1803	3579	1563	1750	3575		1662	1542			1731
Flt Permitted		0.95	1.00	1.00	0.95	1.00		0.95	0.99			1.00
Satd. Flow (perm)		1803	3579	1563	1750	3575		1662	1542			1766
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	3	1190	382	302	1462	9	358	0	295	2	0
RTOR Reduction (vph)	0	0	0	112	0	0	0	0	212	0	0	5
Lane Group Flow (vph)	0	5	1190	270	302	1471	0	322	119	0	0	0
Confl. Peds. (#/hr)		2		6	6		2					
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%	0%	2%	0%	2%	0%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Split	NA		Perm	NA
Protected Phases	5	5	2		1	6		8	8			4
Permitted Phases				2							4	
Actuated Green, G (s)		1.6	55.8	55.8	27.9	82.1		31.3	31.3			1.0
Effective Green, g (s)		2.6	55.8	55.8	28.9	82.1		31.3	31.3			1.0
Actuated g/C Ratio		0.02	0.40	0.40	0.21	0.59		0.22	0.22			0.01
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		33	1426	622	361	2096		371	344			12
v/s Ratio Prot		0.00	c0.33		c0.17	0.41		c0.19	0.08			
v/s Ratio Perm				0.17								c0.00
v/c Ratio		0.15	0.83	0.43	0.84	0.70		0.87	0.35			0.00
Uniform Delay, d1		67.6	37.9	30.6	53.3	20.3		52.4	45.7			69.0
Progression Factor		1.27	1.28	1.54	0.62	1.95		1.00	1.00			1.00
Incremental Delay, d2		1.9	5.3	2.0	9.7	1.2		18.8	0.6			0.1
Delay (s)		88.0	54.0	49.2	42.7	40.8		71.2	46.3			69.1
Level of Service		F	D	D	D	D		E	D			E
Approach Delay (s)			52.9			41.2			58.6			69.1
Approach LOS			D			D			E			E

Intersection Summary				
HCM 2000 Control Delay	48.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.0	
Intersection Capacity Utilization	89.4%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Lane Width	3.7
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	3
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

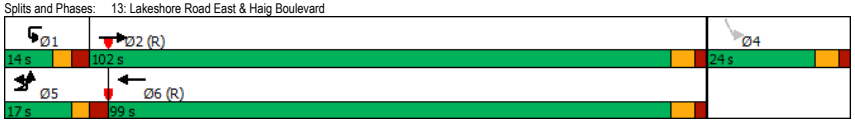
Intersection Summary

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	93	1445	18	1922	84	26	115
Future Volume (vph)	93	1445	18	1922	84	26	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		100.0		0.0	60.0	0.0
Storage Lanes	1		1		0	0	0
Taper Length (m)	50.0		50.0			7.5	
Right Turn on Red					Yes		Yes
Link Speed (k/h)		50		50		50	
Link Distance (m)		186.1		142.9		353.7	
Travel Time (s)		13.4		10.3		25.5	
Lane Group Flow (vph)	93	1445	18	2006	0	141	0
Turn Type	Prot	NA	Prot	NA		Perm	
Protected Phases	5	2	1	6			
Permitted Phases						4	
Detector Phase	5	2	1	6		4	
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0		8.0	
Minimum Split (s)	14.0	22.0	14.0	22.0		24.0	
Total Split (s)	17.0	102.0	14.0	99.0		24.0	
Total Split (%)	12.1%	72.9%	10.0%	70.7%		17.1%	
Yellow Time (s)	3.0	4.0	3.0	4.0		4.0	
All-Red Time (s)	3.0	2.0	3.0	2.0		2.0	
Lost Time Adjust (s)	-1.0	0.0	-1.0	0.0		0.0	
Total Lost Time (s)	5.0	6.0	5.0	6.0		6.0	
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max		None	
v/c Ratio	0.59	0.51	0.15	0.80		0.68	
Control Delay	68.8	18.2	60.0	31.7		47.3	
Queue Delay	0.0	7.6	0.0	47.2		1.3	
Total Delay	68.8	25.7	60.0	78.9		48.6	
Queue Length 50th (m)	20.5	191.3	4.5	263.5		18.9	
Queue Length 95th (m)	m32.1	226.4	m5.6	288.2		39.9	
Internal Link Dist (m)		162.1		118.9		329.7	
Turn Bay Length (m)	50.0		100.0			60.0	
Base Capacity (vph)	166	2818	117	2495		271	
Starvation Cap Reductn	0	1331	0	0		0	
Spillback Cap Reductn	0	0	0	708		37	
Storage Cap Reductn	0	0	0	0		0	
Reduced v/c Ratio	0.56	0.97	0.15	1.12		0.60	

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: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Lakeshore Road East & Haig Boulevard



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	93	1445	18	1922	84	26	115
Future Volume (vph)	93	1445	18	1922	84	26	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	5.0	6.0		6.0	
Lane Util. Factor	1.00	0.95	1.00	0.95		1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00		0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	1.00	0.99		0.89	
Flt Protected	0.95	1.00	0.95	1.00		0.99	
Satd. Flow (prot)	1789	3579	1825	3544		1632	
Flt Permitted	0.95	1.00	0.95	1.00		0.99	
Satd. Flow (perm)	1789	3579	1825	3544		1632	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	93	1445	18	1922	84	26	115
RTOR Reduction (vph)	0	0	0	2	0	65	0
Lane Group Flow (vph)	93	1445	18	2004	0	76	0
Confl. Peds. (#/hr)	15				15	9	2
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%	2%
Turn Type	Prot	NA	Prot	NA		Perm	
Protected Phases	5	2	1	6			
Permitted Phases						4	
Actuated Green, G (s)	11.4	106.6	3.2	98.4		12.2	
Effective Green, g (s)	12.4	106.6	4.2	98.4		12.2	
Actuated g/C Ratio	0.09	0.76	0.03	0.70		0.09	
Clearance Time (s)	6.0	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	158	2725	54	2490		142	
v/s Ratio Prot	c0.05	0.40	0.01	c0.57			
v/s Ratio Perm						c0.05	
v/c Ratio	0.59	0.53	0.33	0.80		0.54	
Uniform Delay, d1	61.3	6.7	66.5	14.2		61.2	
Progression Factor	0.94	2.63	0.94	1.95		1.00	
Incremental Delay, d2	3.9	0.5	1.9	1.5		3.9	
Delay (s)	61.8	18.1	64.3	29.2		65.1	
Level of Service	E	B	E	C		E	
Approach Delay (s)		20.7		29.5		65.1	
Approach LOS		C		C		E	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

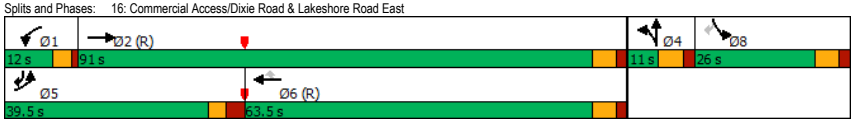
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	343	1070	13	2	1340	220	1	3	0	278	0	684
Future Volume (vph)	343	1070	13	2	1340	220	1	3	0	278	0	684
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	265.0		0.0	15.0		30.0	0.0		0.0	90.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	50.0			50.0			7.5			7.5		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		203.1			149.6			114.4			328.7	
Travel Time (s)		14.6			10.8			8.2			23.7	
Lane Group Flow (vph)	343	1083	0	2	1340	220	0	4	0	278	0	684
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Prot		pm+ov
Protected Phases	5	2		1	6		4	4		8		5
Permitted Phases						6						8
Detector Phase	5	2		1	6	6	4	4		8		5
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	7.0	7.0	5.0	5.0		8.0		8.0
Minimum Split (s)	14.0	26.0		12.0	26.0	26.0	11.0	11.0		25.0		14.0
Total Split (s)	39.5	91.0		12.0	63.5	63.5	11.0	11.0		26.0		39.5
Total Split (%)	28.2%	65.0%		8.6%	45.4%	45.4%	7.9%	7.9%		18.6%		28.2%
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)	3.0	2.0		1.0	2.0	2.0	2.0	2.0		2.0		3.0
Lost Time Adjust (s)	-1.0	0.0		-1.0	0.0	0.0		0.0		-1.0		0.0
Total Lost Time (s)	5.0	6.0		3.0	6.0	6.0		6.0		5.0		6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None		None
v/c Ratio	0.77	0.45		0.02	0.91	0.30		0.06		0.74		0.91
Control Delay	73.4	3.8		62.0	49.3	10.3		67.2		64.7		46.8
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	73.4	3.8		62.0	49.3	10.3		67.2		64.7		46.8
Queue Length 50th (m)	65.2	16.4		0.5	182.1	12.2		1.1		70.9		135.6
Queue Length 95th (m)	#129.5	22.3		3.5	#217.5	30.2		5.2		#137.6		#261.7
Internal Link Dist (m)		179.1			125.6			90.4			304.7	
Turn Bay Length (m)	265.0			15.0		30.0				90.0		
Base Capacity (vph)	446	2432		117	1469	735		67		375		750
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	0.77	0.45		0.02	0.91	0.30		0.06		0.74		0.91

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 50 (36%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Commercial Access/Dixie Road & Lakeshore Road East



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	343	1070	13	2	1340	220	1	3	0	278	0	684
Future Volume (vph)	343	1070	13	2	1340	220	1	3	0	278	0	684
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		3.0	6.0	6.0		6.0		5.0		6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98		1.00		1.00		0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00		1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95		1.00
Satd. Flow (prot)	1772	3572		1825	3579	1579		1897		1807		1567
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95		1.00
Satd. Flow (perm)	1772	3572		1825	3579	1579		1897		1807		1567
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	343	1070	13	2	1340	220	1	3	0	278	0	684
RTOR Reduction (vph)	0	1	0	0	0	92	0	0	0	0	0	53
Lane Group Flow (vph)	343	1082	0	2	1340	128	0	4	0	278	0	631
Confl. Peds. (#/hr)	1		2	2		1	16					16
Heavy Vehicles (%)	3%	2%	0%	0%	2%	1%	0%	0%	0%	1%	0%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Prot		pm+ov
Protected Phases	5	2		1	6		4	4		8		5
Permitted Phases						6						8
Actuated Green, G (s)	34.2	87.3		1.6	52.7	52.7		1.0		28.1		62.3
Effective Green, g (s)	35.2	87.3		2.6	52.7	52.7		1.0		29.1		62.3
Actuated g/C Ratio	0.25	0.62		0.02	0.38	0.38		0.01		0.21		0.44
Clearance Time (s)	6.0	6.0		4.0	6.0	6.0		6.0		6.0		6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	445	2227		33	1347	594		13		375		764
v/s Ratio Prot	0.19	0.30		0.00	c0.37			c0.00		0.15		c0.20
v/s Ratio Perm						0.08						0.20
v/c Ratio	0.77	0.49		0.06	0.99	0.22		0.31		0.74		0.83
Uniform Delay, d1	48.7	14.2		67.5	43.5	29.6		69.2		51.9		34.1
Progression Factor	1.26	0.30		1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	7.5	0.7		0.8	23.3	0.8		13.0		7.7		7.3
Delay (s)	68.8	5.0		68.3	66.8	30.4		82.2		59.6		41.3
Level of Service	E	A		E	E	C		F		E		D
Approach Delay (s)		20.4			61.7			82.2			46.6	
Approach LOS		C			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group