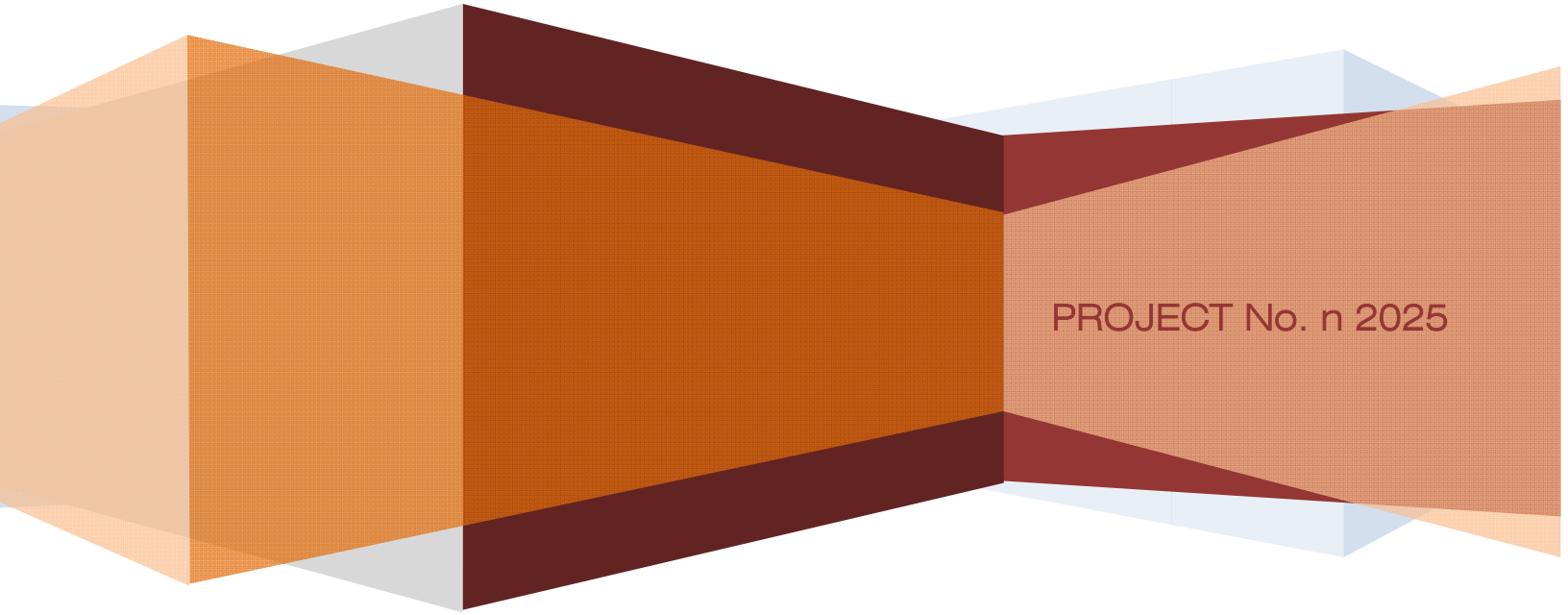
RESIDENTIAL DEVELOPMENT
357-361 ELGIN STREET WEST
COBOURG, ONTARIO

Traffic Impact Study



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Abbreviations

LOS: Level of service

NBL: Northbound left

NBT: Northbound through

SBR: Southbound through

EBL: Eastbound left

EBR: Eastbound right

SBTRL: Southbound through right left

Dr.: Drive

Ave.: Avenue

TMC: Turning Movement Count

Veh: Vehicle

S: second

AM: Morning hours

PM: Afternoon hours

v/c: volume to capacity ratio

The Region: York Region

The Town: Town of Georgina

HCM: Highway Capacity Manual

ITE: Institute of Transportation Engineers

GFA : Gross Floor Area

1 Introduction

n Engineering was retained by Plazacorp to undertake a Transportation Impact study in support of the residential development located at 357-361 Elgin St W in town of Cobourg (the Town), Northumberland county (The county), Ontario. Figure1 illustrates the location of subject development.

The proposed development consists of 5-storey apartment of 86 units and 16 townhouses. The development proposes 135 parking for the whole site.

Figure 1 - SITE LOCATION

It is assumed that the development will be built-out by 2022. Thus, this study analyzed the transportation network during the year of construction completion (2022) and 5 year horizon (2027).

The study analyse future operations at the following intersection:

- Signalized intersection at Elgin St W and Frei St
- Signalized intersection at Elgin St W and Ontario St
- Signalized intersection at Elgin St W and Division St
- Signalized intersection at Elgin St W and William St/Burnham St
- Un-signalized intersection at proposed full movement site access at Elgin St W

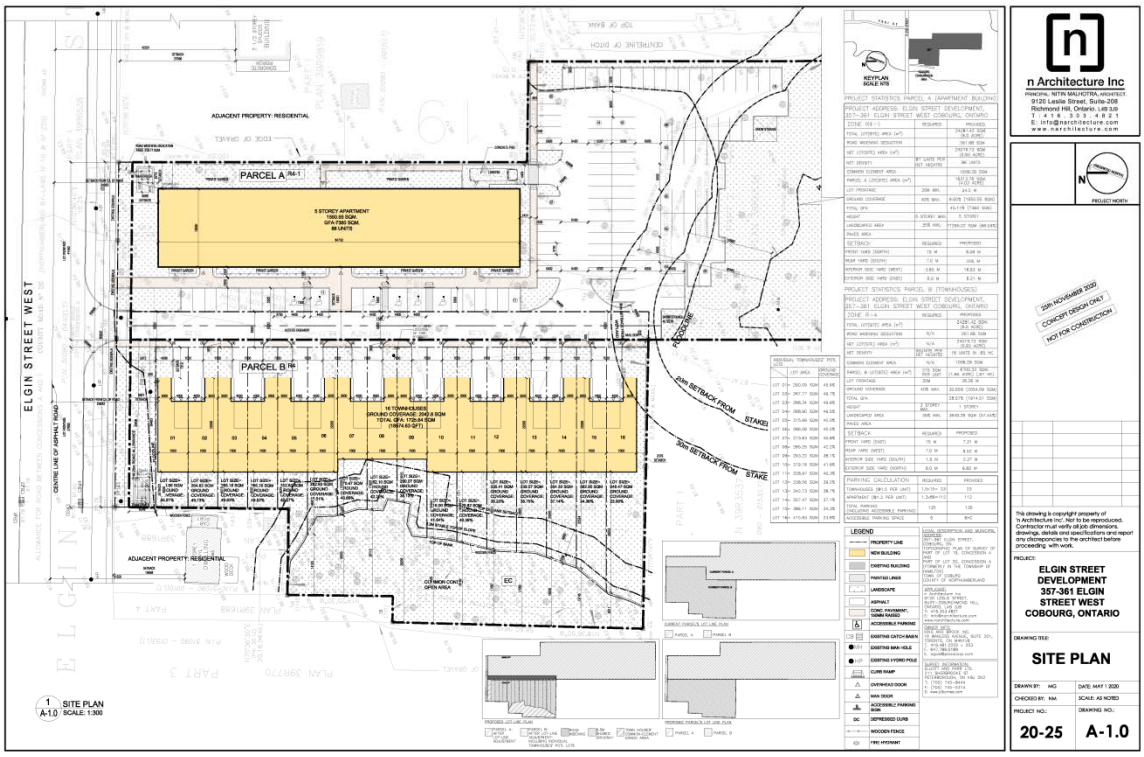

Figure 2 - Site Plan

2 Study Area

The subject development is located at the southhwest of Elgin St W at Frei St intersection. The total area of the site is 24,281.42 m^2 where about 9.5% covered by buildings. The location of the subject site is illustrated on Figure 1.

The nearby land-use to the site is as below:

- To the west, existing residential property
- To the south, Cobourg conservation area
- To the east, residential property

Figure 2 shows the proposed site plan with one full movement access to the Elgin St W.

The total of 135 parking spaces provided including 6 handicap parking which meets the minimum rate required by the town. The proposed access at Elgin St W will be full movement and stop controlled.

3 Existing road network

3.1 Elgin St W (Regional road)

It is an east-west arterial road which falls under the county jurisdiction. Sidewalk is available at both sides of the street. This Street comprise of four lane roadway, with posted speed of 50 km/h within the study area.

3.2 Frei St

Frei St is a north-south two lane local road that falls under the town's jurisdiction. There are sidewalks on both side of the street. The posted speed is 40 km/h within the study area.

3.3 Ontario St

Ontario St is a north-south two lane urban road that falls under the town's jurisdiction. Sidewalk is available on the east side of the street. The posted speed is 50 km/h within the study area.

3.4 Division St

Division St is a north-south two lane local road with left turn centre lane that falls under the town's jurisdiction. There are sidewalks on both side of the street. The posted speed is 50 km/h within the study area

3.5 Burnham St/ William St

Burnham St is an North-south arterial road which falls under the Region's jurisdiction where the sidewalk is available at both sides of the avenue with . William is the south side extend of the Burnham St that comprise of four lane roadway with left turn centre lane. The posted speed of both streets is 50 km/h within the study area.

3.6 Intersections in Study Area

3.6.1 Signalized intersection at Elgin St W and Frei St

This T intersection is the closest signalized intersection to the site. There is pedestrian crossing on all side of the intersection. Left turn movements are permitted.

3.6.2 Signalized intersection at Elgin St W and Ontario St

This Intersection has pedestrian crossing on all its sides. On eastbound-westbound movements the left turn is protected + permitted while on northbound-southbound movements is permitted. On NB-SB there is left turn bay while, a shared through, left turn movement is existed on the EB-WB directions.

3.6.3 Signalized intersection at Elgin St W and Division St

The intersection has pedestrian crossing on all its sides. There is left bays on all directions along with median isle. The left turn is permitted and protected on all directions.

3.6.4 Signalized intersection at Elgin St W and Burnham St/William St

The intersection has pedestrian crossing on all its sides. There is left bays on all directions along with median isle. There is two left turn lane for the NBL movement. The left turn is permitted and protected for SB, WB and EB movements while is protected for the NB movement.

3.6.5 Unsignalized intersection at Elgin St W and the subject property entrance

The proposed full movement stop controlled entrance is on Elgin St W and it will be the only entrance to serve the subject development.

3.7 Existing Travel Demand

Auto traffic operations at the study area intersections were analyzed based upon the Highway Capacity Manual 2000 using the Synchro (ver.10). For all intersections, the volume to capacity (v/c) ratio, control delay (s/veh), level of service (LOS) and 95^{th} percentile queue length were tabulated for each scenario. Level of service is based on average vehicle delay as per HCM 2000 which is illustrated in table 1.

LOS	Signalized intersection Average Control Delay (s/veh)	Unsignalized intersection Average Control Delay (s/veh)
A	≤10	≤10
B	>10 &<=20	>10 & <=15
C	>20& <=35	>15& <=25
D	>35& <=55	>25& <=35
E	>55& <=80	>35& <=50
F	>80	>50

Table 1 - HCM 2000 LOS

Critical movement were highlighted for each intersection where the v/c ratio exceeding 0.85, and level of service of E or worst. (E, F), although, for left turn with E or F, may be acceptable depending on delays.

3.7.1 Existing Transit Service

The town has two fixed bus routes (Route 1 & Route 2). Both routes are completed in one hour loops. Also, there is an origin to destination service called, WHEELS for eligible riders who cannot use conventional transit. Route 1 is passing on Elgin St W and has bus stop with less than 300m distance from the site. The schedule and transit map is shown in Appendix A.

3.7.2 Existing Pedestrian Sidewalk

There is pedestrian side walk on both sides of the Elgin St W where the site entrance is located.

3.7.3 Existing Cycling Network

There is no bike lane available within the study area.

3.7.4 Existing Auto Volume and Performance

The TMC dated Dec 2018 were used which has the AM, PM week day and Saturday midday peak hour. The TMC data are shown in Appendix C.

We applied the 2% growth rate to acquire the existing 2020 traffic volumes, which is illustrated in the table below.

The analysis of existing (2020) traffic conditions indicates that the signalized intersections operate at acceptable level of service. In the Division St and Elgin St W intersection the queue length is more than left turn storage bay in the Saturday Midday peak hour.

Intersection	Turning Movement/Approach	AM Peak Hour				PM Peak Hour				SAT MIDDAY Peak Hour				Existing Storage(m)
		V/C	LOS	Delay(s/veh)	95th Queue(m)	V/C	LOS	Delay(s/veh)	95th Queue(m)	V/C	LOS	Delay(s/veh)	95th Queue(m)	
Elgin St West & Frei St	Overall	0.32	B	12.1	-	0.53	B	17.4		0.43	B	14.1	-	-
	EBLT	0.49	B	12	41.5	0.89	C	22.5	80.2	0.74	B	14.9	66.2	-
	WBTR	0.56	B	12.5	69.1	0.54	B	11.3	88.1	0.69	B	13.6	72.2	-
	NBLTR	–	A	0	–	–	A	0	–	–	A	0	-	-
	SBLTR	0.09	A	9.4	14.5	0.03	B	12.2	17.6	0.05	B	11.2	13.8	-
Elgin St West & Ontario St	Overall	0.51	B	16.5		0.58	C	20.7		0.59	B	18.2	-	-
	EBLTR	0.41	B	14.6	32.3	0.85	C	25.1	92.4	0.7	B	17.9	76.5	-
	WBLTR	0.76	C	20.3	51.2	0.77	B	20	49.9	0.79	C	20.1	54.1	-
	NBL	0.21	B	12.2	23.6	0.21	B	13.4	24.8	0.27	B	15.2	24.4	58
	NBTR	0.09	B	11.0	16.1	0.12	B	12.3	17.1	0.09	B	14.5	20.3	-
	SBL	0.16	B	11.7	18.2	0.13	B	12.5	17.0	0.12	B	13.4	16.2	58
	SBTR	0.09	B	11.3	18.2	0.08	B	12.2	16.5	0.09	B	13.1	21.0	-
Elgin St West & Division St	Overall	0.66	C	31.1		0.85	D	38	-	0.86	D	36.3	-	-
	EBL	0.58	C	27.6	40.4	0.82	D	44.2	62.9	0.85	D	43.8	86.3	70
	EBTR	0.39	C	32.7	70.4	0.45	C	32.6	68.1	0.42	D	32.9	80.6	-
	WBL	0.28	C	30.1	22.9	0.27	C	31.8	24.8	0.25	C	33.2	19.7	60
	WBTR	0.68	D	42.4	89.5	0.75	D	47.1	114.8	0.70	D	46.4	101	-
	NBL	0.45	C	20.9	55.9	0.80	C	33.3	73.8	0.79	C	32.3	63	-
	NBTR	0.34	C	26.6	46.7	0.60	D	36.0	74.2	0.43	C	30.5	56.9	-
	SBL	0.61	B	18.4	58.3	0.69	C	28.9	59.4	0.47	C	22.7	58	-
	SBTR	0.65	C	31.4	84	0.64	D	39.2	82.5	0.68	D	38.6	85.3	-
Elgin St West & William St/Burnham St	Overall	0.66	C	31.5	-	0.84	D	37.4	-	0.74	D	36.1	-	-
	EBL	0.39	C	25	30.1	0.85	D	49.2	54.8	0.77	D	39.4	43.1	80
	EBTR	0.35	C	32.2	41.5	0.62	D	37.5	74.3	0.51	C	31.6	65.8	-
	EBR	0.11	C	30.4	13.7	0.20	C	32	16.4	0.24	C	28.3	9.9	-
	WBL	0.41	C	22.6	47.4	0.57	C	29.2	36.5	0.15	C	23.9	49.6	125
	WBTR	0.72	D	33.5	61.6	0.83	D	47.7	79.4	0.87	D	46.0	90.7	-
	NBL	0.49	D	41.5	30.7	0.45	C	27.1	43.2	0.59	C	26.9	44.9	150
	NBTR	0.44	C	27.9	53.1	0.55	D	40.5	46.1	0.57	D	40.6	55.8	-
	SBL	0.49	B	16	36.1	0.75	C	28.5	61.0	0.62	C	28.5	43.2	90
	SBTR	0.46	C	22.6	49.4	0.46	C	32.8	65.0	0.47	D	38.2	55.1	-

Table 2 – Existing 2020 Auto Performance

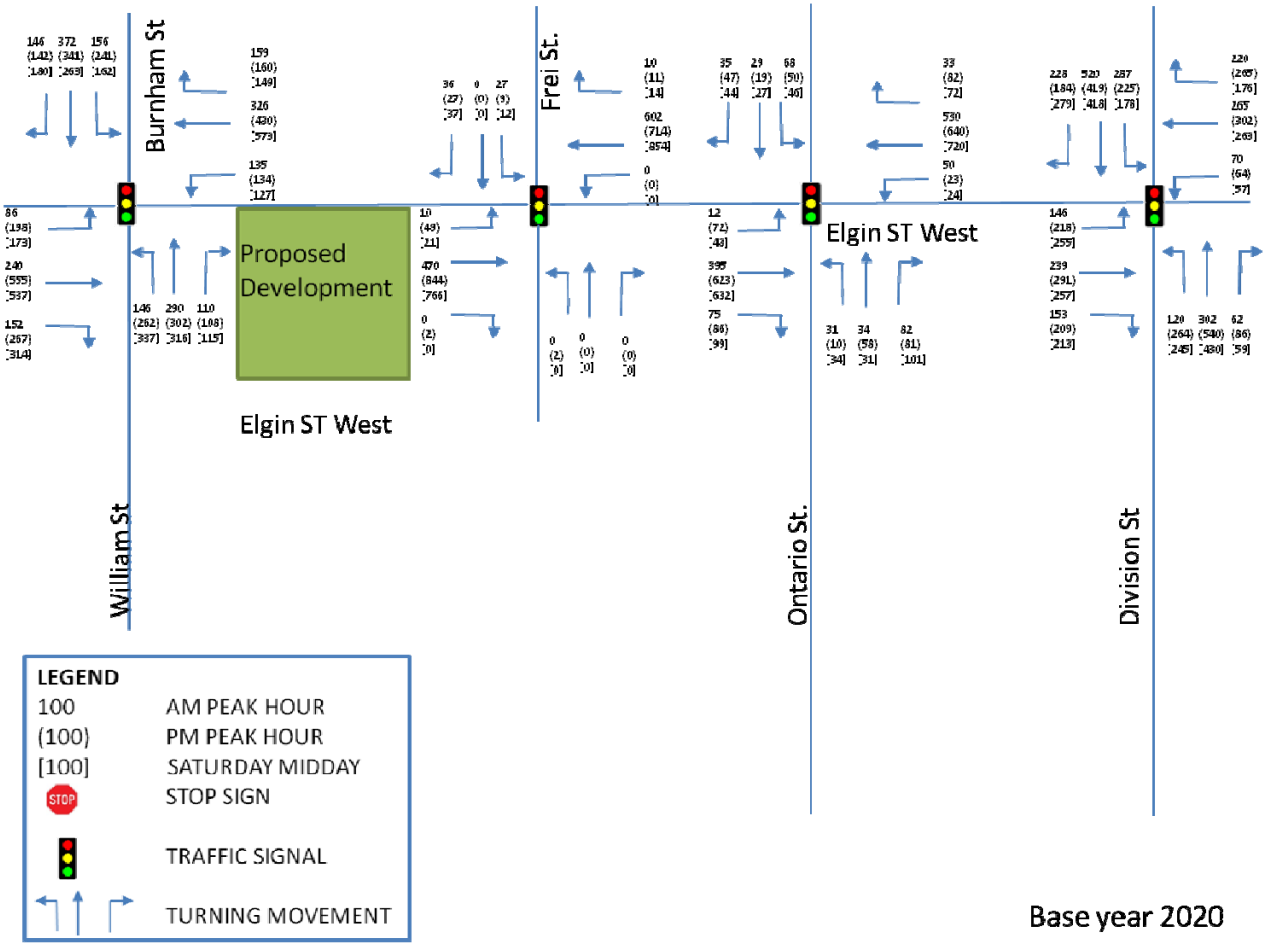

Figure 3 - Existing traffic volume 2020

4 Future Background Analysis

The development is intended to be fully built out by 2022 and five years beyond that was considered for the future analysis according to previous discussion with the County.

- Future background traffic condition (2022)
- 5-years horizon background traffic condition (2027)

4.1 Other Background Developments

According to our discussion with the town and county, we were provided with the traffic impact study of Golden Plough Lodge and County Archives Redevelopment at 983 Burnham St. The traffic generated by this development was added to the 2027 Background development as the build out year was estimated to be in 2026 according to TIS report dated August 2019, Paradigm Limited.

4.2 Auto Traffic Growth Rate

This study assumed an annual growth rate of 2% to be applied to all movements.

4.3 Future Background Auto Volumes and Performance

The 2% growth rate was applied to existing 2020 traffic volume to calculate 2022 future background traffic volume which is considered to be the build out year. The traffic volumes are shown in the figure below.

Figure 4 - Future background 2022 traffic volume

The future background traffic volume was simulated in the Synchro and Simtraffic and the result illustrated in the table below.

Intersection	Turning Movement/Approach	AM Peak Hour				PM Peak Hour				SAT MIDDAY Peak Hour				Existing Storage(m)
		V/C	LOS	Delay(s/veh)	95th% Queue(m)	V/C	LOS	Delay(s/veh)	95th% Queue(m)	V/C	LOS	Delay(s/veh)	95th% Queue(m)	
Elgin St West & Frei St	Overall	0.33	B	12.1	-	0.56	B	19.8	-	0.45	B	14.6	-	-
	EBLT	0.5	B	12	33.8	0.93	C	26.8	94.8	0.77	B	15.7	57.8	-
	WBTR	0.57	B	12.6	77.8	0.55	B	11.3	90.8	0.7	B	13.8	129	-
	NBLTR	-	-	-	-	0.01	B	12.5	6.2	-	-	-	-	-
	SBLTR	0.1	A	9.6	18.7	0.03	B	12.6	13.9	0.06	B	11.5	16.8	-
Elgin St West & Ontario St	Overall	0.54	B	16.8	-	0.61	C	21.6	-	0.61	B	18.8	-	-
	EBLTR	0.41	B	14.4	38.9	0.88	C	26.7	184.4	0.72	B	18.2	80.8	-
	WBLTR	0.77	C	20.6	48.4	0.78	C	20.3	67.5	0.81	C	20.7	62	-
	NBL	0.22	B	13	24.2	0.23	B	14.4	23.5	0.3	B	16.3	38.4	58
	NBTR	0.1	B	11.7	24.5	0.13	B	13.2	16.4	0.1	B	13.9	18.9	-
	SBL	0.17	B	12.5	20.5	0.14	B	13.4	25.6	0.13	B	14.2	23.1	58
	SBTR	0.09	B	11.7	17.7	0.09	B	12.9	20	0.1	B	13.9	21.0	-
Elgin St West & Division St	Overall	0.7	C	32.2	-	0.9	D	40.7	-	0.91	D	39.2	-	-
	EBL	0.61	C	28.6	32.5	0.85	D	50.2	69.6	0.9	D	51.8	68.7	70
	EBTR	0.4	C	32.8	58.7	0.46	C	33	64.5	0.44	C	33.4	68.7	-
	WBL	0.28	C	30.3	20.7	0.28	C	32.1	23.6	0.27	C	33.6	20.8	60
	WBTR	0.7	D	43.2	88.3	0.77	D	48.6	139.8	0.71	D	47.4	80.2	-
	NBL	0.49	C	22	39.5	0.86	D	40.4	77.4	0.83	D	42.3	66.8	-
	NBTR	0.36	C	29.7	54.5	0.63	D	38.4	80	0.45	C	30.8	70.2	-
	SBL	0.65	B	19.9	58.2	0.74	C	32.5	59.5	0.5	C	23.7	43.9	-
	SBTR	0.69	C	33.1	82.6	0.68	D	42	85.8	0.73	D	41.4	100.7	-
Elgin St West & William St/Burnham St	Overall	0.6	C	30.8	-	0.89	D	42.6	-	0.8	D	44.5	-	-
	EBL	0.42	C	25.2	24.7	0.9	E	61.1	58.6	0.83	D	49.5	62.4	80
	EBTR	0.35	C	32.5	40.8	0.63	D	38.4	69.4	0.57	D	35.7	66.9	-
	EBR	0.12	C	30.6	10	0.21	C	32.5	22.1	0.25	C	31.5	14.3	-
	WBL	0.43	C	22.7	36.6	0.6	C	30.5	42.2	0.54	C	27.3	41.1	125
	WBTR	0.73	D	37.7	77.3	0.85	D	49.3	92.8	0.95	E	60.3	99.6	-
	NBL	0.5	D	42.5	46.8	0.7	D	53	59.6	0.77	D	54.4	68.2	150
	NBTR	0.47	C	29.4	45.8	0.59	D	42.9	53.1	0.54	D	39.3	52.1	-
	SBL	0.53	B	17.8	33.6	0.79	C	32	57.2	0.63	C	31.1	42	90
	SBTR	0.52	C	28.6	55.1	0.55	D	38.9	68.5	0.53	D	42.9	60.8	-

Table 3 - Future Background 2022 Auto Performance

As shown in the table above, the analysis of future background (2022) traffic conditions indicates that the signalized intersection operates at an acceptable overall level of service peak hours while at Burnham and Elgin St W intersection , at PM peak hour the EBL movement is in critical condition with LOS of “E” and also WBTR has LOS of “E” . The queue length is within the storage capacity.

Following discussion with the town and county, the provided future development added to the 2027 horizon and added to the traffic volume of the Elgin St W and Burnham St intersection. The traffic volumes for year 2027 are shown below.

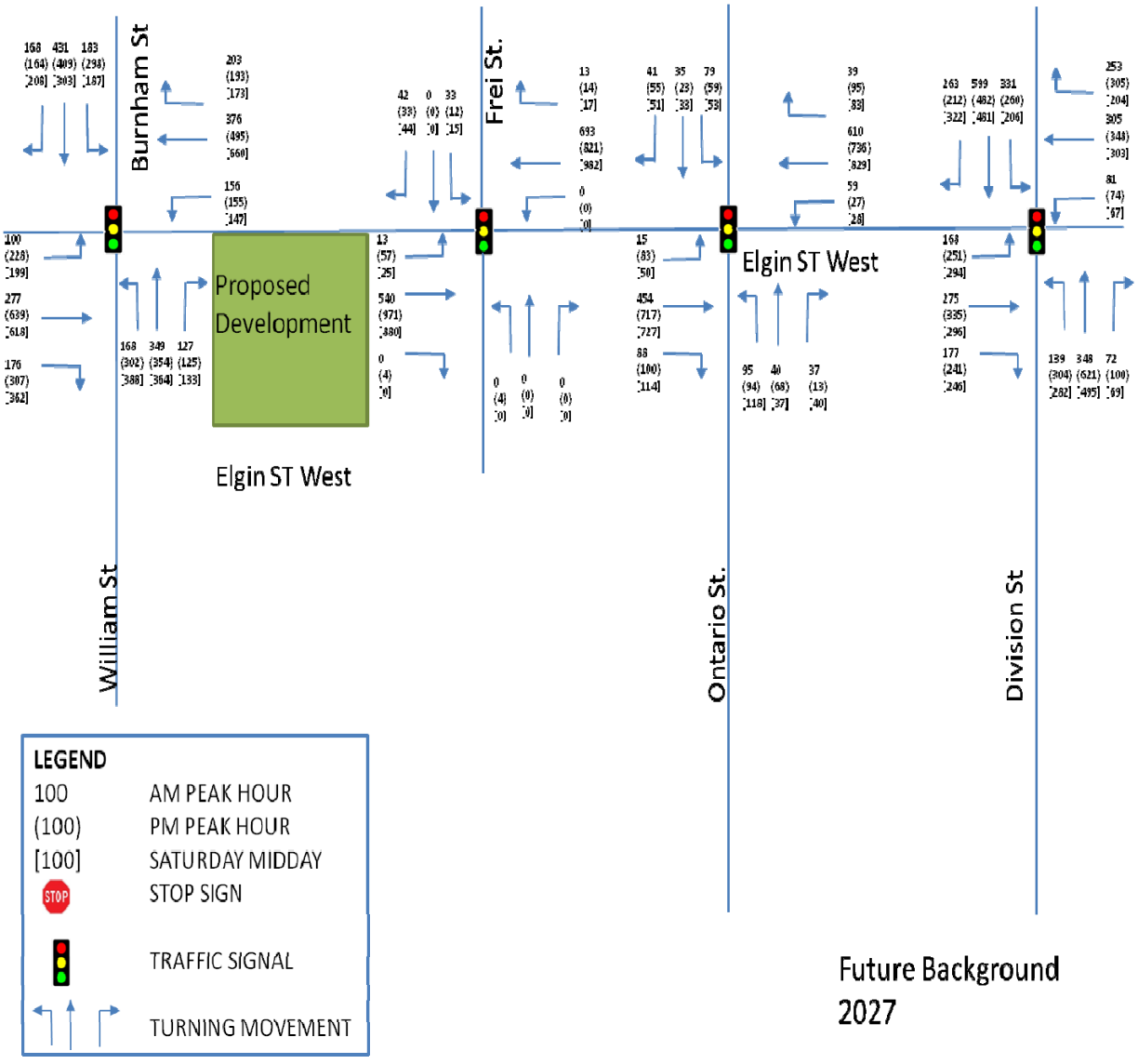

Figure 5 - Future Background 2027 Traffic Volume

Intersection	Turning Movement/Approach	AM Peak Hour				PM Peak Hour				SAT MIDDAY Peak Hour				Existing Storage(m)
		V/C	LOS	Delay(s/veh)	95th% Queue(m)	V/C	LOS	Delay(s/veh)	95th% Queue(m)	V/C	LOS	Delay(s/veh)	95th% Queue(m)	
Elgin St West & Frei St	Overall	0.37	B	12.4	-	0.67	D	48.7	-	0.53	B	16.9	-	-
	EBLT	0.53	B	12.1	31.7	1.12	E	79.3	153.3	0.87	C	20.1	156.7	-
	WBTR	0.6	B	12.8	81.1	0.61	B	11.9	96	0.74	B	14.4	150.8	-
	NBLTR	-	-	-	-	0.01	B	12.5	3	0.01	B	12	4.3	-
	SBLTR	0.13	B	10.3	16.1	0.04	B	12.7	16.8	0.08	B	12.3	13	-
Elgin St West & Ontario St	Overall	0.6	B	17.8	-	0.69	C	26.2	-	0.7	C	22	-	-
	EBLTR	0.43	B	13.9	50.8	0.94	C	35	232.3	0.8	C	20.3	220.9	-
	WBLTR	0.82	C	22.2	52.9	0.84	C	22.6	68.1	0.89	C	25.5	172.2	-
	NBL	0.26	B	15.3	27	0.27	B	17	31.4	0.35	B	18.8	35.4	58
	NBTR	0.12	B	13.5	25.5	0.15	B	15.2	18.6	0.12	B	15.6	17.7	-
	SBL	0.21	B	14.6	22.3	0.16	B	15.6	16.5	0.15	B	16	17.8	58
	SBTR	0.12	B	13.5	21.9	0.1	B	14.8	20.3	0.13	B	15.7	23.3	-
Elgin St West & Division St	Overall	0.78	D	36.1	-	1.02	D	51.4	-	1.04	D	48.4	-	-
	EBL	0.69	C	32.5	55.4	0.93	E	67.8	100.6	1.03	F	87.7	98.2	70
	EBTR	0.46	D	35.5	67	0.52	D	35.2	93	0.48	C	34	76.8	-
	WBL	0.31	C	29.4	29.0	0.31	C	31	28.4	0.3	C	33.5	26.1	60
	WBTR	0.76	D	46.4	116.3	0.84	D	52.7	141.1	0.75	D	48.8	94.9	-
	NBL	0.6	C	27.1	38.6	1.03	F	91.3	80	0.96	E	73.3	73.8	-
	NBTR	0.42	C	32.8	62.8	0.76	D	45.9	91.2	0.51	C	34	68.3	-
	SBL	0.75	C	24.9	74.3	0.86	D	46.5	76.6	0.59	C	26.8	48.8	-
	SBTR	0.78	D	38.4	97.3	0.78	D	48.1	100.8	0.84	D	49.2	109.3	-
Elgin St West & William St/Burnham St	Overall	33.7	C	33.7	-	1.03	D	53.3	-	0.88	E	55.7	-	-
	EBL	0.49	C	26.3	37.9	1.07	F	112.2	61	0.91	E	66.9	52.5	80
	EBT	0.36	C	33	44.4	0.72	D	43.7	105.7	0.65	D	39	83.8	-
	EBR	0.13	C	31	9.6	0.23	D	35.4	17.2	0.27	C	33.2	20.9	-
	WBL	0.47	C	23.2	37.7	0.73	D	38.6	52.4	0.65	C	31.6	60.2	125
	WBTR	0.78	D	40.5	68.4	0.93	E	60.7	90.2	1.08	F	95.9	131.3	-
	NBL	0.55	D	45.5	39.7	0.73	E	56.8	67.1	0.79	E	55.1	80.1	150
	NBTR	0.57	C	34.3	48	0.71	D	50.6	71.3	0.62	D	42.9	69.3	-
	SBL	0.63	C	21.8	40.3	0.92	D	52.9	91.4	0.69	C	33.4	55.2	90
	SBTR	0.6	C	32.4	63.5	0.63	D	42.6	74.5	0.62	D	46.2	69.9	-

Table 4 - Future Background 2027 Auto Performance

The analysis of the future background (2027) traffic conditions indicates that the all signalized intersections are operation at acceptable LOS except the Elgin St W and Burnham St which is operating under LOS of “E” at Saturday Midday peak hour. At Elgin St W and Frei St intersection, EBLT movement is working under “E” LOS at PM peak hour. At Elgin St W and Ontario St intersection, all movement are working at acceptable LOS without queuing issue. At Elgin St W and Division St intersection, the EBL movement is operating under critical condition at the PM and Saturday peak hours, and both with queuing more than available storage. At Elgin St W and Burnham St/William St intersection, EBL is operating under critical condition both in PM and Saturday peak hours. WBTR is operating in critical condition in both PM and

Saturday peak hours. NBL movement is operating under critical condition in both PM and Saturday peak hours. The queue is more than available storage in SBL movement at PM peak hour. All the critical conditions are coloured in red.

4.4 Future Total Analysis

The proposed development will include one stop controlled full movement entrance on Elgin St W. The total number of trip generated by the proposed development will be added to future background 2022, 2027 to have Future Total 2022, 2027.

4.4.1 Trip Generation and Assignment

4.4.1.1 Trip Generation

ITE Trip Generation Manual (ITE2017) were used to extract the trip generation rates for AM and PM peak hours of the proposed development.

Two categories were used from the ITE manual as land use code 220 and 221 for townhouses and apartment respectively.

Table 5 summarize the percentage of incoming and outgoing trips for the selected land use (ITE2017)

Multifamily Housing(Mid-Rise) (221)	AM Peak Hour			PM Peak Hour			SAT Midday Peak Hour		
	Average rate**	IN(%)	OUT(%)	Average rate**	IN(%)	OUT(%)	Average rate**	IN(%)	OUT(%)
	0.36	26	74	0.44	61	39	0.44	49	51
Multifamily Housing(Low-Rise) (220)	AM Peak Hour			PM Peak Hour			Sat Midday Peak Hour		
	Average rate**	IN(%)	OUT(%)	Average rate**	IN(%)	OUT(%)	Average rate**	IN(%)	OUT(%)
	0.46	23	77	0.56	63	37	0.7	50	50
** per No. of housing									

Table 5 - Trip Generation Rate ITE 10th Edition

4.4.1.2 Total Site-Generated Trips

For the townhouses land use, the total number of 16 townhouses was considered for estimating total trips by applying the average rate from the table above.

For apartment building, the total of 86 units was considered for determining trips by using the rates from table 5.

The results of total number of trips are illustrated in the table below.

Land Use	Quantity(No. of housing)	AM Peak Hour Trips Generated			PM Peak Hour Trips Generated			SAT Midday Peak Hour Trips Generated		
		Trips In	Trips Out	Total	Trips In	Trips Out	Total	Trips In	Trips Out	Total
Apartments	86	8	23	31	23	15	38	19	19	38
Townhouses	16	2	6	8	6	3	9	6	6	12
Total Trips		10	29	39	29	18	47	25	25	50

Table 6 - Total Site Generated Trips

The majority of trips are expected to be generated by the apartments while townhouses generate the lowest number of trips. It should be noted that to be conservative, the non-auto modal split was not included in the table above.

4.4.1.3 Trip assignment

The existing traffic data has been used to assign the generated traffic.

The site generated trip assignment is provided in the figure below.

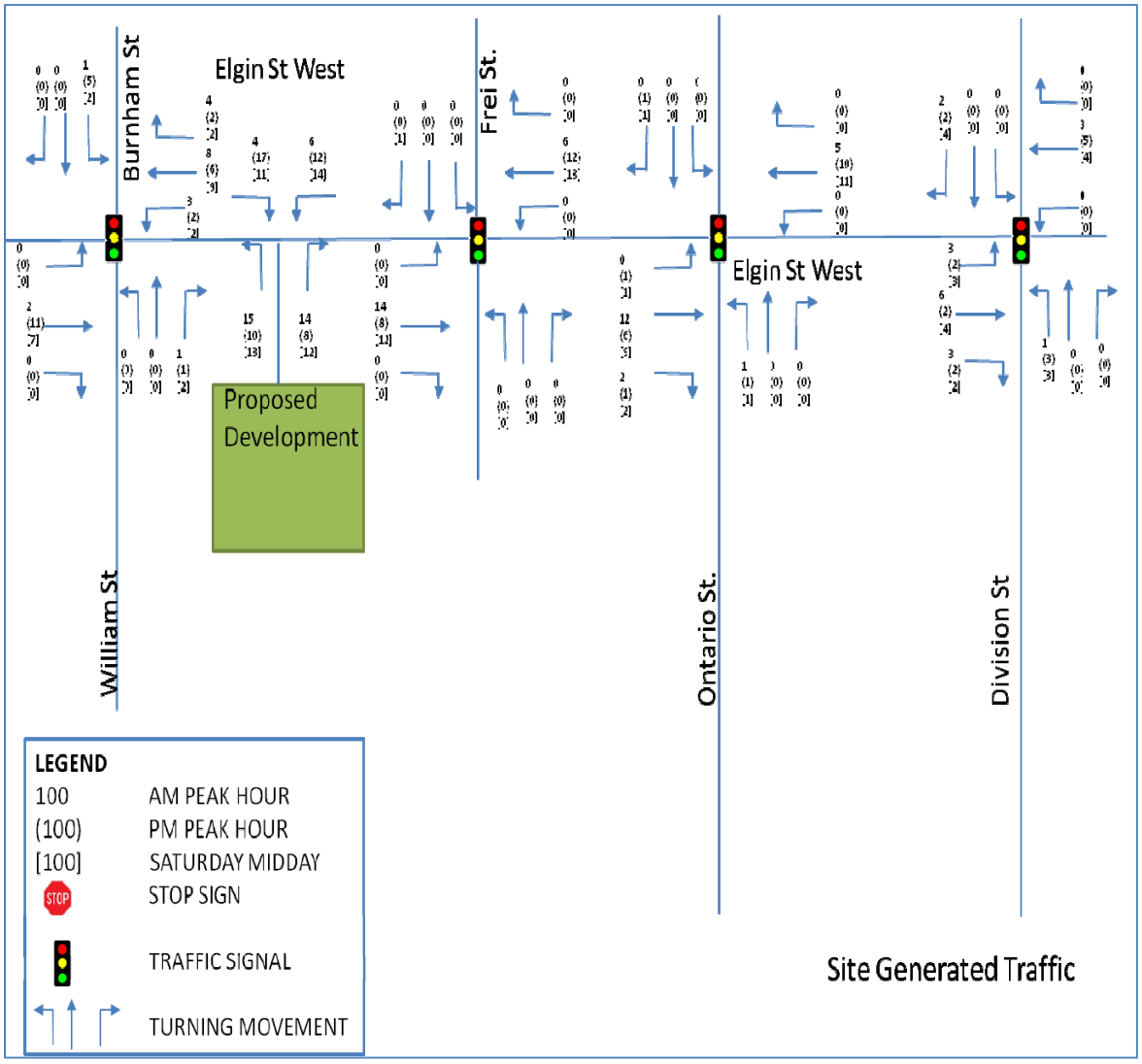

Figure 6 - Site Generated Traffic

4.4.2 Future Total 2022 Auto volumes and performance

The site generated trips in previous section was added to the future background 2021 to determine the future total 2021 traffic volumes. The related traffic volume is illustrated in the figure below.

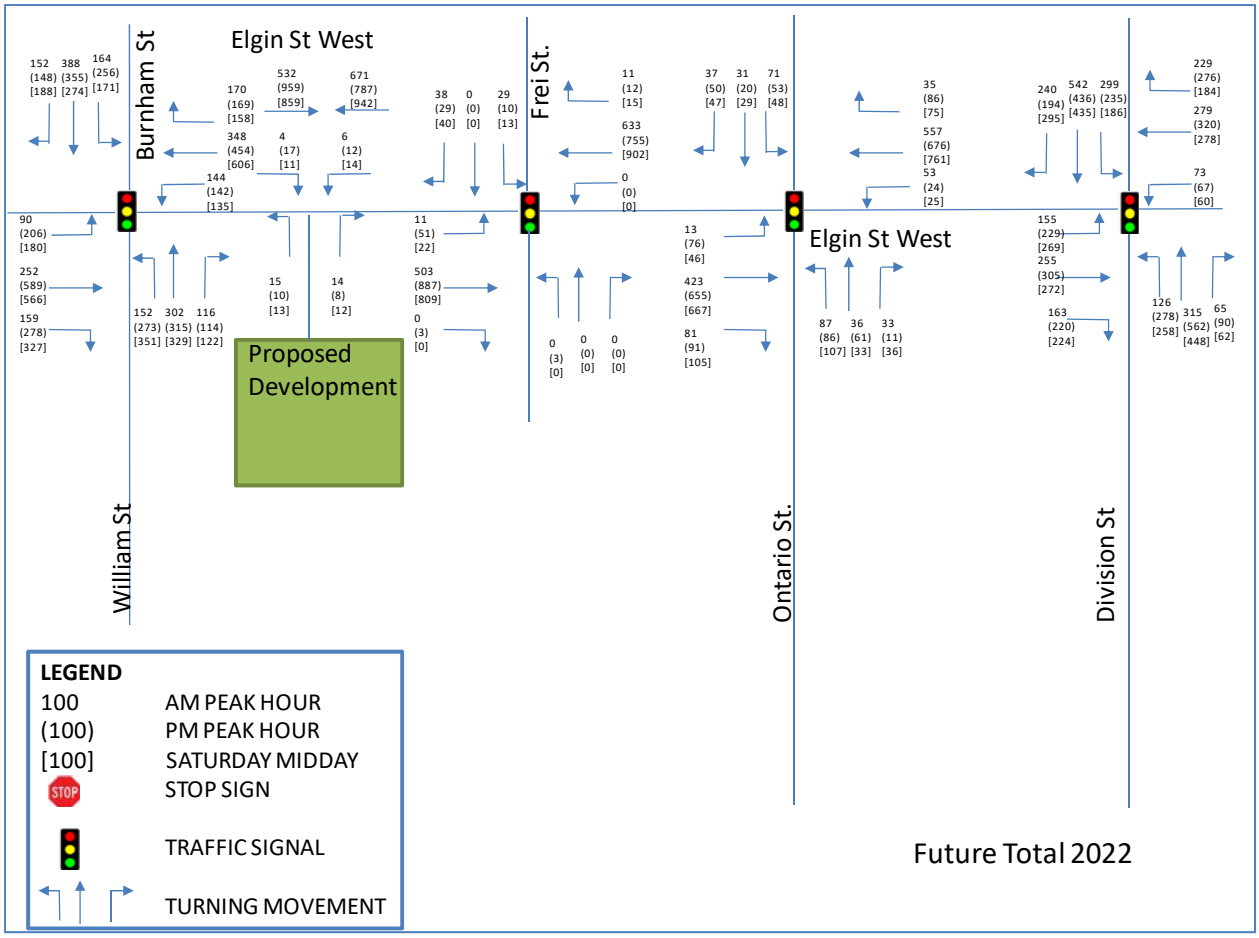

Figure 7 - Future Total 2022 Volumes

For the full movement site entrance intersection on Elgin St W, the intersection was analyzed as unsignalized intersection with a stop control at NB approach with one lane entrance and one lane exit to Elgin St W.

The result of future Total 2022 auto network analysis is illustrated in table below and the related simulation report is shown in Appendix D.

Intersection	Turning Movement/Approach	AM Peak Hour				PM Peak Hour				SAT MIDDAY Peak Hour				Existing Storage(m)
		V/C	LOS	Delay(s/veh)	95th% Queue(m)	V/C	LOS	Delay(s/veh)	95th% Queue(m)	V/C	LOS	Delay(s/veh)	95th% Queue(m)	
Elgin St West & Frei St	Overall	0.34	B	12.2	-	0.56	C	20.9	-	0.46	B	14.9	-	-
	EBLT	0.51	B	12.1	31.2	0.95	C	28.9	77.5	0.78	B	16.2	61.6	-
	WBTR	0.57	B	12.6	73.5	0.56	B	11.4	95	0.71	B	14	116.3	-
	NBLTR	-	-	-	-	0.01	B	12.5	4.1	-	-	-	-	-
	SBLTR	0.1	A	9.7	16.5	0.03	B	12.6	14.1	0.06	B	11.5	16.4	-
Elgin St West & Ontario St	Overall	0.54	B	17	-	0.62	C	21.8	-	0.62	B	19.1	-	-
	EBLTR	0.42	B	14.4	44.8	0.88	C	27.2	84.8	0.74	B	18.6	67	-
	WBLTR	0.78	C	20.9	54.1	0.78	C	20.2	55.4	0.81	C	21.1	52.2	-
	NBL	0.23	B	13.2	25	0.23	B	14.7	23.5	0.3	B	16.5	24.1	58
	NBTR	0.1	B	11.9	23	0.13	B	13.4	19.6	0.1	B	14	20.6	-
	SBL	0.17	B	12.7	21.7	0.14	B	13.6	17.5	0.13	B	14.4	20.3	58
	SBTR	0.09	B	11.8	18.5	0.09	B	13.1	20.8	0.1	B	14.1	19.4	-
Elgin St West & Division St	Overall	0.7	C	32.5	-	0.91	D	41.4	-	0.92	D	40	-	-
	EBL	0.62	C	29	52.8	0.86	D	51.4	74.8	0.91	D	54.5	101.3	70
	EBTR	0.41	C	32.9	66.8	0.46	C	33	84.4	0.45	C	33.4	68.8	-
	WBL	0.29	C	30.4	28.1	0.28	C	32.2	23.2	0.27	C	33.7	23.0	60
	WBTR	0.7	D	43.5	95.4	0.78	D	48.8	130.1	0.72	D	47.9	95.8	-
	NBL	0.5	C	22.3	32.4	0.87	D	43.2	80	0.85	D	44.9	65.7	-
	NBTR	0.36	C	29.9	54.7	0.64	D	38.8	79.1	0.45	C	31	73.2	-
	SBL	0.65	C	20.2	64.3	0.74	C	33.4	58.9	0.5	C	24	45.8	-
	SBTR	0.69	C	33.5	77	0.69	D	42.7	88.4	0.74	D	42	91	-
Elgin St West & William St/Burnham St	Overall	0.61	C	29	-	0.9	D	40.3	-	0.78	D	38.5	-	-
	EBL	0.42	C	25.3	32.7	0.91	E	62.5	66.2	0.8	D	43.2	55.7	80
	EBTR	0.35	C	32.5	44.8	0.65	D	39.1	76	0.55	C	32.7	68.8	-
	EBR	0.12	C	30.6	-	0.21	C	32.7	22.6	0.25	C	28.9	14.6	-
	WBL	0.43	C	22.7	37.6	0.62	C	31.2	44.5	0.52	C	24.8	40.9	125
	WBTR	0.74	D	37.9	64	0.86	D	50.2	72.5	0.92	D	52.7	86.4	-
	NBL	0.51	D	42.8	39.5	0.7	D	53.4	58.3	0.77	D	54.4	75.8	150
	NBTR	0.47	C	29.8	47.2	0.59	D	43.4	57.9	0.6	D	41.7	49.6	-
	SBL	0.53	B	17.3	37.5	0.8	C	33	62.0	0.66	C	30	48.5	90
	SBTR	0.49	C	26.6	41.1	0.48	C	34.1	58.2	0.5	D	39.1	54.4	-
Entrance and Elgin St W	Overall	-	A	0.3	-	-	A	0.2	-	-	A	0.3	-	-
	WBL	0.01	A	0.1	10.4	0.02	A	0.6	16.8	0.02	A	0.2	8.2	-
	NBLR	0.05	B	11	14.4	0.04	B	12.1	13.3	0.04	B	11.3	12.3	-
	EBR	-	-	-	-	-	-	-	13.9	-	-	-	9.8	-

Table 7 - Future Total 2022 Auto Performance

The overall LOS is D or better. At Elgin St W and Frei St intersection, it is operating at an acceptable LOS. At Elgin St W and Ontario St intersection, all the movements are operating under acceptable LOS. At Elgin St W and Division St intersection, EBL movement has led to queuing more than available left turn bay storage in PM and Saturday peak hours and all the movements are operating at LOS of "D" or better. At Elgin St W and Burnham St/William St intersection, EBL movement is operating in LOS of "E" and with 0.91 v/c, it is operating under critical condition. The stop controlled entrance is operating within the capacity with the LOS of "B" or better.

All the movements which are operating in critical condition, had same LOS in future background 2022 analysis, thus, the addition of proposed development is expected to have minimal impact on the studied network.

Future Total 2027 Auto volumes and performance

The site generated trips added to the future background 2027 to determine the future total 2027 traffic volumes. The related traffic volume is illustrated in the figure below.

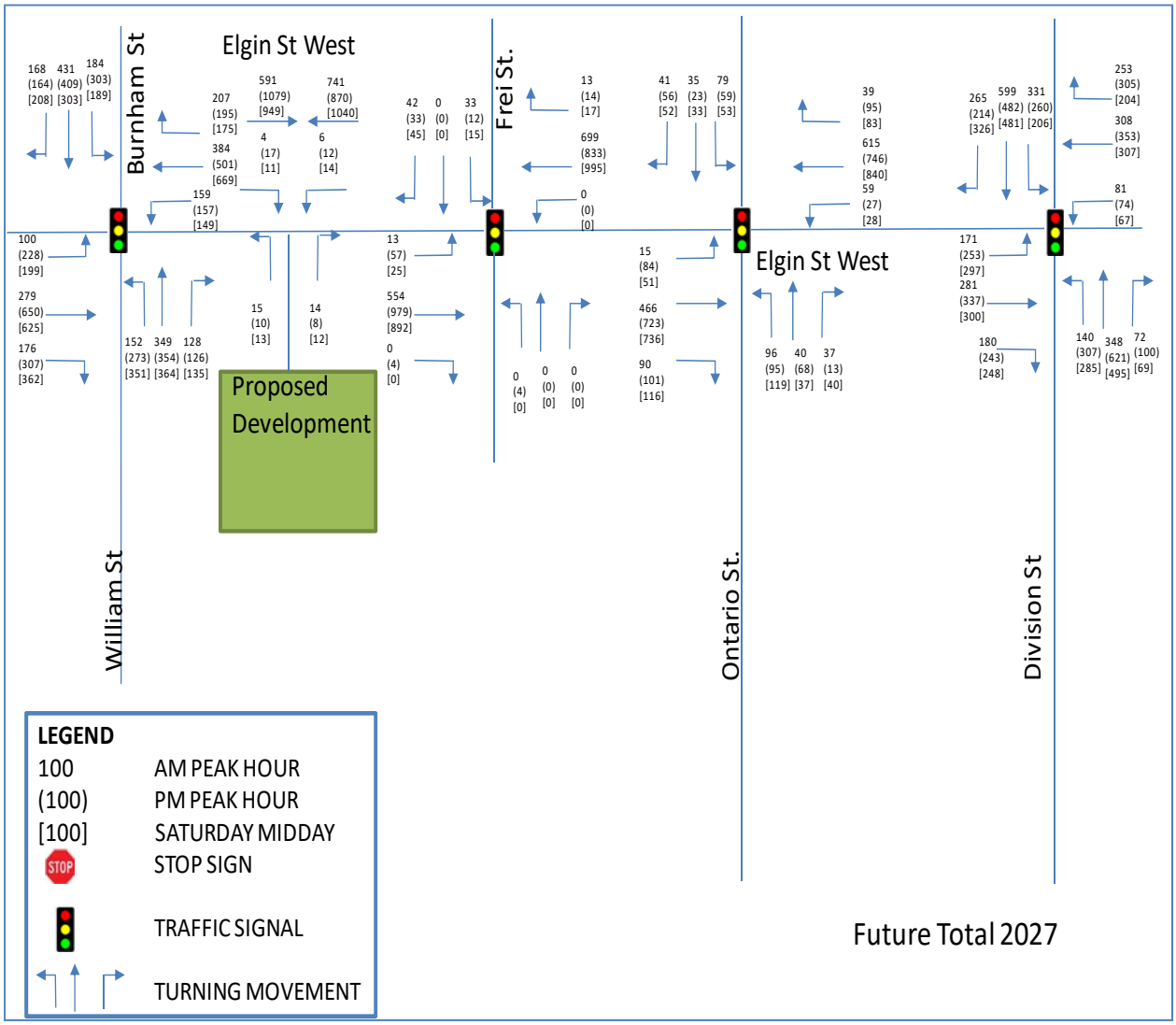

Figure 8 - Future Total 2027 Volumes

The result of future Total 2027 auto network analysis is provided in table below and the related report is shown in Appendix D.

As shown in the table below, the analysis of future total (2027) traffic conditions indicates that the signalized intersection operates at an overall level of service “D” or better during AM, PM and Saturday midday peak hours.

At Elgin St W and Frei St intersection, EBLT movement is operating under critical condition with “F” LOS during PM peak hour. Elgin St W and Ontario St intersection, is working under normal condition. At Elgin St W and Division St intersection, EBL movement is operating with LOS of “E” and queuing more than available bay left turn bay storage. NBL movement is operating under critical condition during PM and Saturday peak hours. At Elgin St W and Burnham St/William St intersection, EBL movement is operating under critical condition with “F” and “E” LOS during PM and Saturday peak hours respectively. WBTR movement is operating with “E” and “F” LOS during PM and Saturday peak hours respectively. NBL movement is operating under critical condition with LOS “E” during PM peak hour. SBL movement is also operating with “E” LOS and queuing more than existing bay storage. Comparing to future background 2027, the proposed development is expected to have minimal impact on the studied network.

Intersection	Turning Movement/Approach	AM Peak Hour				PM Peak Hour				SAT MIDDAY Peak Hour				Existing Storage(m)
		V/C	LOS	Delay(s/veh)	95th% Queue(m)	V/C	LOS	Delay(s/veh)	95th% Queue(m)	V/C	LOS	Delay(s/veh)	95th% Queue(m)	
Elgin St West & Frei St	Overall	0.37	B	12.4	-	0.68	D	52.1	-	0.54	B	17.6	-	-
	EBLT	0.55	B	12.2	33.3	1.13	F	85.6	74.3	0.88	C	21.2	96.3	-
	WBTR	0.61	B	12.8	86.3	0.61	B	12.1	106.5	0.75	B	14.6	112.1	-
	NBLTR	-	-	-	-	0.01	B	12.5	4.3	0.01	B	12.1	4.2	-
	SBLTR	0.13	B	10.3	18.9	0.04	B	12.7	14	0.08	B	12.4	14.2	-
Elgin St West & Ontario St	Overall	0.61	B	17.9	-	0.7	C	27.2	-	0.71	C	22.7	-	-
	EBLTR	0.43	B	13.8	52.9	0.95	D	36.9	194.4	0.81	C	21.1	225	-
	WBLTR	0.82	C	22.4	41.4	0.85	C	22.8	61	0.9	C	26.9	88.4	-
	NBL	0.27	B	15.6	23.3	0.28	B	17.1	24.3	0.35	B	18.9	27.8	58
	NBTR	0.12	B	13.8	24.5	0.15	B	15.4	19.3	0.12	B	15.7	23.7	-
	SBL	0.21	B	14.8	21.8	0.16	B	15.7	25.2	0.15	B	16.1	14.5	58
	SBTR	0.12	B	13.7	22.2	0.1	B	15	22.7	0.13	B	15.8	23.7	-
Elgin St West & Division St	Overall	0.78	D	36.4	-	1.03	D	52.3	-	1.06	D	49.5	-	-
	EBL	0.7	C	33	58.4	0.94	E	70.2	79.5	1.04	F	91.7	136.1	70
	EBTR	0.47	D	35.5	68.9	0.52	D	35.2	88	0.49	C	34	78.4	-
	WBL	0.32	C	29.5	23.6	0.31	C	30.9	54.9	0.3	C	33.5	25.2	60
	WBTR	0.76	D	46.6	117.4	0.84	D	52.6	154.5	0.75	D	48.8	89.6	-
	NBL	0.61	C	27.9	42.5	1.05	F	95.9	90.2	0.98	E	78	92.1	-
	NBTR	0.42	C	33	64.3	0.77	D	46.3	82.5	0.52	C	34.3	70	-
	SBL	0.75	C	25.4	88.9	0.87	D	47.2	70.6	0.6	C	27	48.5	-
	SBTR	0.79	D	38.8	105.1	0.79	D	48.5	85.1	0.85	D	49.8	109.5	-
Elgin St West & William St/Burnham St	Overall	0.7	C	34	-	1.04	D	51.7	-	0.88	D	48.3	-	-
	EBL	0.5	C	26.5	27.8	1.08	F	115.2	87.7	0.87	E	56.5	76.5	80
	EBTR	0.36	C	33.1	40.2	0.73	D	44.7	102.1	0.62	D	35.6	101.1	-
	EBR	0.13	C	31.1	13.7	0.23	D	35.8	29.1	0.27	C	30.5	20.8	-
	WBL	0.48	C	23.2	48	0.75	D	40.6	43.9	0.62	C	28.4	55	125
	WBTR	0.79	D	41	70.6	0.94	E	63	89.8	1.09	F	101.8	109.8	-
	NBL	0.55	D	45.7	47.1	0.74	E	57.6	65	0.79	D	55	72.9	150
	NBTR	0.57	C	34.7	49.4	0.72	D	51.5	71.1	0.69	D	45.2	59.5	-
	SBL	0.64	C	22	43.7	0.93	E	55.2	97.9	0.74	C	34.1	41.2	90
	SBTR	0.6	C	32.8	65.3	0.62	D	42.4	72.3	0.57	D	41.6	52.7	-
Entrance and Elgin St W	Overall	-	A	0.3	-	-	A	0.2	-	-	A	0.2	-	-
	WBL	0.01	A	0.1	4.1	0.02	A	0.2	11.6	0.02	A	0.2	15.9	-
	NBLR	0.05	B	11.3	14.9	0.04	B	12.5	12.4	0.05	B	11.5	20	-
	EBR	-	-	-	-	-	-	-	92.6	-	-	-	145	-

Table 8 - Future Total 2027 Performance

5 Parking and Loading space

5.1 Vehicular Parking

The subject development is governed by the town's zoning by-law #85-2003. By applying number of units by the required parking rate (section 6 by-law), the subject development is required to provide 136 parking spaces.

Usage	No. of unit	Town Parking Requirement		
		Rate per unit	Required Space	Proposed
Apartment Dweling	86	1.3	112	112
Townhouse	16	1.5	24	24
Total			136	136

Table 9 – Parking Calculation

For the apartment, the rate 1.3 is considered, following the discussion and coordination with the town. The total number of parking proposed is addressed the town's minimum requirement.

5.2 Loading

According to the zoning by-law, it is required to provide loading space in commercial and industrial zones. One loading space is provided behind the proposed building.

6 Summary and Recommendations

- The proposed development with 86 apartment unit and 16 townhouses will generate less than 50 trips during studied peak hours.
- The proposed full movement controlled entrance will operate with acceptable overall LOS of “A” and individual movement LOS “B” or better.
- By the 2027 horizon year, all the signalized intersections will be operating within capacity including existing, future background and future total conditions.
- The proposed development is expected to have minimal impact on the studied network
- By the 2022 horizon year, at William St/Burnham St and Elgin St W intersection, EBL movement will operate under critical condition “E” during PM peak hour. Also, at Division St and Elgin St W, EBL movement will lead to queuing more than available storage.
- By the 2027 horizon year, although the overall LOS will be operating within capacity, some individual movement will be operating under critical condition.

We trust that this study adequately addresses the requirement of the county and town. Should you have any questions, please contact the undersigned.

Respectfully submitted,

(Report Prepared by)

Ramyar Mehraban EIT, M. Eng.
Project Designer
n Engineering Inc

(Report Reviewed by)

Abu S Ziauddin P. Eng. M.Eng
PROJECT MANAGER
n Engineering Inc

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APPENDIX A

Transit Route

ROUTE 2 - NORTHUMBERLAND MALL > DOWNTOWN > DENSMORE RD		
NORTHUMBERLAND MALL		**:30**
Dollarama		:30
Staples - east side of Staples	East	:31
William @ Court Building	West	:36
William @ Harden	West	:37
William @ University	West	:38
King St @ Ontario St	South	:40
King St @ Spring West High Sch	South	:41
Legion Village	West	:41
Marina	South	:42
DOWNTOWN TERMINAL**	**SOUTH**	**:42**
Spring @ King	East	:43
University @ St. Michaels School	South	:44
Division @ Munroe	East	:47
Division @ Ewart	Easr	:48
Division @ Elgin	South	:49
Lions Centre	South	:49
Elgin @ D'Arcy St	South	:50
D'Arcy @ Alexandria Dr.	West	:51
COBOURG COMMUNITY CENTRE	Entrance	:54
D'Arcy @ Alexandria Dr.	East	:55
DENSMORE RD > DOWNTOWN > MALL		
D'Arcy @ Elgin	East	:55
Birchwood Trail @ SMSS	East	:57
Densmore Rd @ Rosewood Est	South	:58
Parkview Hills @ Alder Rd	East	:59
Parkview Hills @ Ashland Dr	East	:00
Extendicare	North	:02
Densmore @ Division	North	:03
Division @ Elgin	West	:06
Division @ Ewart	West	:07
Division @ KFC	West	:08
Division @ University	West	:09
Spring @ University Ave	West	:10
Spring @ King	West	:11
Legion Village	West	**:12**
Marina	North	:12
DOWNTOWN TERMINAL	**SOUTH**	**:15**
King @ Spring	North	:17
King @ William	North	:18
William @ University	East	:20
William @ Harden	North	:20
Harden @ Sinclair	North	:21
Burnham @ Westwood	North	:21
Westwood @ Ewing	East	:22
Westwood @ Burwash	East	:22
Westwood @ Carlisle	East	:23
Carlisle @ Burnham	South	:23
Burnham @ Heath	West	:24
Heath @ William	South	:24
William @ Court Building	East	:25
Elgin @ Courthouse Rd	North	:26
Courthouse @ Golden Plough	North	:27
Rogers Rd @ Canadian Tire	West	:29
NORTHUMBERLAND MALL		**:30**

COBOURG - PORT HOPE EXPRESS SHUTTLE $2.00

SHUTTLE - Bus from Port Hope arrives every half hour at 10 minutes and 40 minutes at Northumberland Mall, you can transfer to a Cobourg bus for $1.00 or ride the Port Hope bus to the Hospital (:14/:44), WalMart (:15/:45) – bus then goes back to Port Hope.

HOURS:
MONDAY- FRIDAY
At the Mall every half hour at 10 and 40 past each hour from 7:00 a.m. to 8:00 p.m. (Last Shuttle – 7:40 p.m.)

SATURDAY
At the Mall every half hour at 10 and 40 minutes past each hour from 9:00 a.m. to 4:00 p.m. (Last Shuttle – 3:40 p.m.)
****No Shuttle Service on SUNDAYS or HOLIDAYS**

Port Hope Bus leaves Town Hall (56 Queen St) every :30 minutes past the hour and on the hour :00 for more info please call (905) 885-2431

VIA Rail: Riders can be dropped off or picked up on Division St at the entrance/exit to the VIA station upon request.
Southbound on Division only

*** No Transfers at the :42 stop at the Downtown Terminal on Route 2*

STREET SIDE
East - East Side
North - North Side
South - South Side
West - West Side

Purchase passes/tickets:
Victoria Hall & Cobourg Public Library

COBOURG TRANSIT SCHEDULE

"Ontario's Feel Good Town"
Cobourg
Ontario, Canada

Monday to Friday
6:15 a.m. to 7:45 p.m.
STARTS/ENDS AT THE DOWNTOWN TERMINAL

Saturday
8:15 a.m. to 6:45 p.m.
STARTS/ENDS AT THE DOWNTOWN TERMINAL

Sunday
8:45 a.m. to 3:45 p.m.
STARTS/ENDS AT THE DOWNTOWN TERMINAL

DOWNTOWN TERMINAL - ALBERT STREET SHELTER

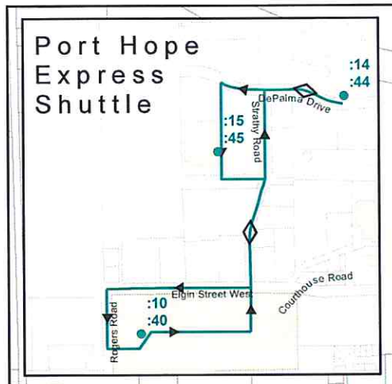
EFFECTIVE SEPTEMBER 1, 2006
Revised February 2018
Updated 2019

FARE $ 2. 00

PLEASE CALL (905) 372-4555 FOR INQUIRIES

ROUTE 1 - NORTHUMBERLAND MALL > DOWNTOWN> LUCAS POINT		
NORTHUMBERLAND MALL		**:30**
Strathy Lot @ Elgin	East	:35
Strathy Rd @ Lights	East	:35
Hospital	**At Door**	**:37**
DePalma @ Burnham	South	:38
Elgin @ Best Western	South	:39
YMCA (South)	South	:39
Ontario @ Elgin	West	:39
Ontario @ Huyke	West	:40
Sutherland @ Ontario	South	:41
Sutherland @ Chipping Park	South	:41
Chipping Park @ Huycke	East	:42
Ballantine @ Morley Cane Park	South	:42
Ballantine @ Division	West	:42
Division @ Ewart	West	:43
Division @ KFC	West	:43
Division @ University	West	:44
Divison @ Buck St	West	:44
DOWNTOWN TERMINAL	**SOUTH**	**:45**
King @ Division	South	:47
King @ Victoria Park	South	:48
King @ Walton	South	:49
King @ D'Arcy	South	:50
King @ Cottesmore	South	:51
Abbott @ Coronation	West	:52
Abbott @ Lakeshore Dr	South	:52
Lakeshore Dr @ Brook Rd S	South	:53
Coverdale @ Springbrook	East	:53
Coverdale @ Park	East	:54
Coverdale @ King	East	:54
King @ Maplewood Blvd	South	:55
Willmott @ Carroll Cres	West	:55
Willmott @ Thompson	West	:56
LUCAS POINT > DOWNTOWN > MALL		
Local 183	North	:57
Willmott @ Carroll Cres	East	:00
King @ Maplewood Blvd	North	:01
King @ Coverdale	North	:02
Brookside	North	:03
King @ Cottesmore	North	:04
King st @ D'Arcy St	North	:04
Chapel @ Palisade Gardens	North	:05
King @ Walton	North	:06
King @ College	North	:07
King @ Division	North	:08
DOWNTOWN TERMINAL	**SOUTH**	**:10**
Division @ King	East	:11
Division @ Chapel	East	:11
Divison @ University	East	:12
University @ John St	South	:12
University @ D'Arcy St	South	:13
Knights of Columbus Centre	North	:14
Munroe @ Walton	North	:14
Munroe @ No Frills	North	:15
Division @ Ewart	East	:16
Division @ Ballantine (Honda)	East	:17
Elgin @ Ontario	North	:18
Elgin @ Frei (YMCA)	North	:22
Elgin @ Burnham (Best Western)	North	:23
Burnham @ Gateway Plaza	East	:25
Hospital @ Lights (at Hospital)	**North**	**:26**
Home Depot - DePalma	North	:26
Wal Mart (at store)	West	:28
Strathy Rd @ Elgin	West	:29
Rogers Rd @ Canadian Tire	West	:29
NORTHUMBERLAND MALL		**:30**

TOWN OF COBOURG
Transit Routes



Hospital
:26 - at the lights on DePalma
:37 - at the doors

Transit Stop Route 1
Transit Stop Route 2
Transit Stop Both Routes
Route 1
Route 2
Both Routes
Travel Direction (Both ways)
Travel Direction (Indicated by arrow)

Bus Fares & Passes

Exact Cash Fare - $2.00
Lots of 10 Tickets - $16.00 ($1.60 per ticket)
Adult Monthly Pass - $60.00
Student Monthly Pass - $50.00
Senior Monthly Pass - $30.00
After School Monthly Student Pass* - $15.00
*After 2:30pm on weekdays, all day on weekends.
Children 6 and under ride for free

Hours of Operation

Monday to Friday:
6:15am to 7:45pm

Saturday:
8:15am to 6:45pm

Sunday:
8:45am to 3:45pm

Please call (905) 372-4555 for inquiries.
Office Hours are Mon-Fri, 8:30-4:30.

Operated by:

Century Transportation: (905) 373-0582

Downtown Terminal
Rt One - :45 & :10
Rt Two - :42 & :15

BE PART OF THE SOLUTION
TAKE TRANSIT
www.transitaction.ca

Cobourg GEOMATICS

APPENDIX B

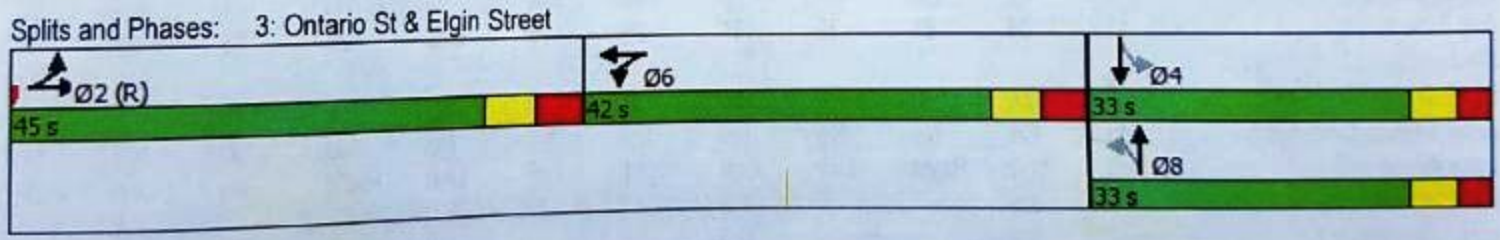
Signal Timing Plan

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		37.0			34.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio		0.31			0.28		0.22	0.22		0.22	0.22	
v/c Ratio		0.46			0.57		0.28	0.13		0.15	0.18	
Control Delay		25.2			26.1		42.7	21.7		39.8	20.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		25.2			26.1		42.7	21.7		39.8	20.3	
LOS		C			C		D	C		D	C	
Approach Delay		25.2			26.1			34.3			27.8	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Pretimed
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 26.7 Intersection LOS: C
Intersection Capacity Utilization 59.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Ontario St & Elgin Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	373	65	29	471	28	73	21	27	43	29	39
Future Volume (vph)	16	373	65	29	471	28	73	21	27	43	29	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	35.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.978			0.992			0.916			0.913	
Flt Protected		0.998			0.997		0.950			0.950		
Satd. Flow (prot)	0	3286	0	0	3397	0	1656	1702	0	1805	1705	0
Flt Permitted		0.998			0.997		0.711			0.724		
Satd. Flow (perm)	0	3286	0	0	3397	0	1239	1702	0	1378	1705	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			5			28			41	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		326.4			825.3			109.9			161.5	
Travel Time (s)		23.5			59.4			7.9			11.6	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	8%	2%	4%	5%	8%	9%	0%	4%	0%	0%	3%
Adj. Flow (vph)	17	389	68	30	491	29	76	22	28	45	30	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	474	0	0	550	0	76	50	0	45	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			8			4	
Permitted Phases							8			4		
Minimum Split (s)	41.0	41.0		41.0	41.0		31.0	31.0		31.0	31.0	
Total Split (s)	45.0	45.0		42.0	42.0		33.0	33.0		33.0	33.0	
Total Split (%)	37.5%	37.5%		35.0%	35.0%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	37.0	37.0		34.0	34.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.0			8.0		7.0	7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	26.0	26.0		26.0	26.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	

PROGRAM LOG

PL-1

EAGLE SIGNAL CONTROLS

TRAFFIC PRODUCT DATA

EPAC300 PROGRAM LOG

Prepared By:

Date .....:

Approved By:

Date .....: ___ / ___ / ___

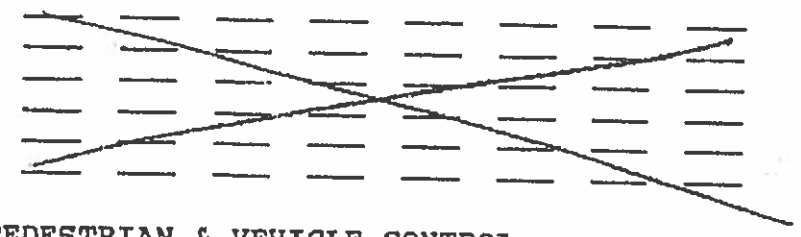
Intersection Name: ELGIN STREET & ONTARIO STREET

Φ1 - ELGIN STREET WEST, Φ2 - ONTARIO N.B L.T.
Φ3 - ONTARIO S.B L.T. UTILITIES - ACCESS Φ4 ONTARIO THRU.

CODE .....: ____ CODES: Four Digits (0000-9999)

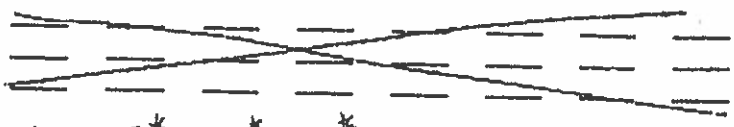
PHASE DATA - VEHICLE TIMINGS

	PHASE	1	2	3	4	5	6	7	8
Basic Times	Minimum Green	0	18	0	10	0	18	0	10
	Passage	0	30	0	3.0	0	30	0	30
	Maximum No. 1	0	70	0	24	0	70	0	24
	Maximum No. 2	0	32	0	24	0	32	0	24
	Yellow Change	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	Red Clearance	0	2.0	1.0	2.0	0	2.0	0.0	2.0
Density Times	Seconds/Actuation								
	Maximum Initial								
	Time B4 Reduction								
	Cars B4 REduction								
	Time To Reduce								
	Minimum Gap								



PHASE DATA - PEDESTRIAN & VEHICLE CONTROL

	PHASE	1	2	3	4	5	6	7	8
Ped. Times	Walk	0	10	0	10	0	10	0	10
	Pedest. Clearance	0	26	0	17	0	26	0	17
Ped. Cont.	Flashing Walk								
	Ext Ped Clear								
	Act Rest In Walk								
Veh. Cont.	Non-Lock Memory	1	0*	0*	0*	0	0	0	0
	Dual Entry	0	0	0	0	0	0	0	0
	Last Car Passage	0	0	0	0	0	0	0	0
	Conditional Serv	0	0	0	0	0	0	0	0



Pedestrian & Vehicle Control Entry: "1" = Yes & "0" = No

* TO CHANGE SIDE STREET LOOPS TO NON-LOCK ENTER THE DIGIT ONE(1) IN THESE LOCATIONS.

20. EPAC300 PROGRAM LOG

Prepared By .....: _____ Date: ___/___/___

Approved By.....: _____ Date: ___/___/___

Intersection Name .....: DIVISION & ELGIN

Access Code .....: _____ Codes: Four Digits (0000 - 9999)

Basic Times	Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green		10	16	10	16	10	16	10	16								
Passage Time		2.0	0	2.0	3.0	2.0	0	2.0	3.0								
Maximum No 1		20	35	20	35	20	35	20	35								
Maximum No 2		10	0	10	31	10	0	10	31								
Yellow Change		3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0								
Red Clearance		1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0								

Density Times	Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seconds/Actuation																	
Maximum Initial																	
Time B4 Reduction																	
Cars B4 Reduction																	
Time To Reduce																	
Minimum Gap																	

Pedestrian Times	Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk		0	17	0	18	0	17	0	18								
Pedestrian Clearance		0	16	0	16	0	16	0	16								

Pedestrian Control	Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Walk																	
Extended Pedestrian Clear																	
Act Rest In Walk																	

Pedestrian Control Entry: "1" = Yes & "0" = No

Veh Control	Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Non-Lock Memory		1	1	1	1	1	1	1	1								
Dual Entry			1		1		1		1								
Last Car Passage																	
Conditional Service																	
No Simultaneous Gap																	

Vehicle Control Entry: "1" = Yes & "0" = No

Phase Vehicle Basic Timing Data

Date 3/5/2009 Time 14:46:33

Intersection Name Elgin and Frei

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	0	15	0	6	0	0	0	0
Passage	0.0	5.0	0.0	3.0	0.0	0.0	0.0	0.0
Maximum 1	0	25	0	15	0	0	0	0
Maximum 2	0	25	0	15	0	0	0	0
Yellow Change	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Vehicle Basic Timing Data

Date 3/5/2009 Time 14:44:54

Intersection Name Elgin and Burnham

Source Database

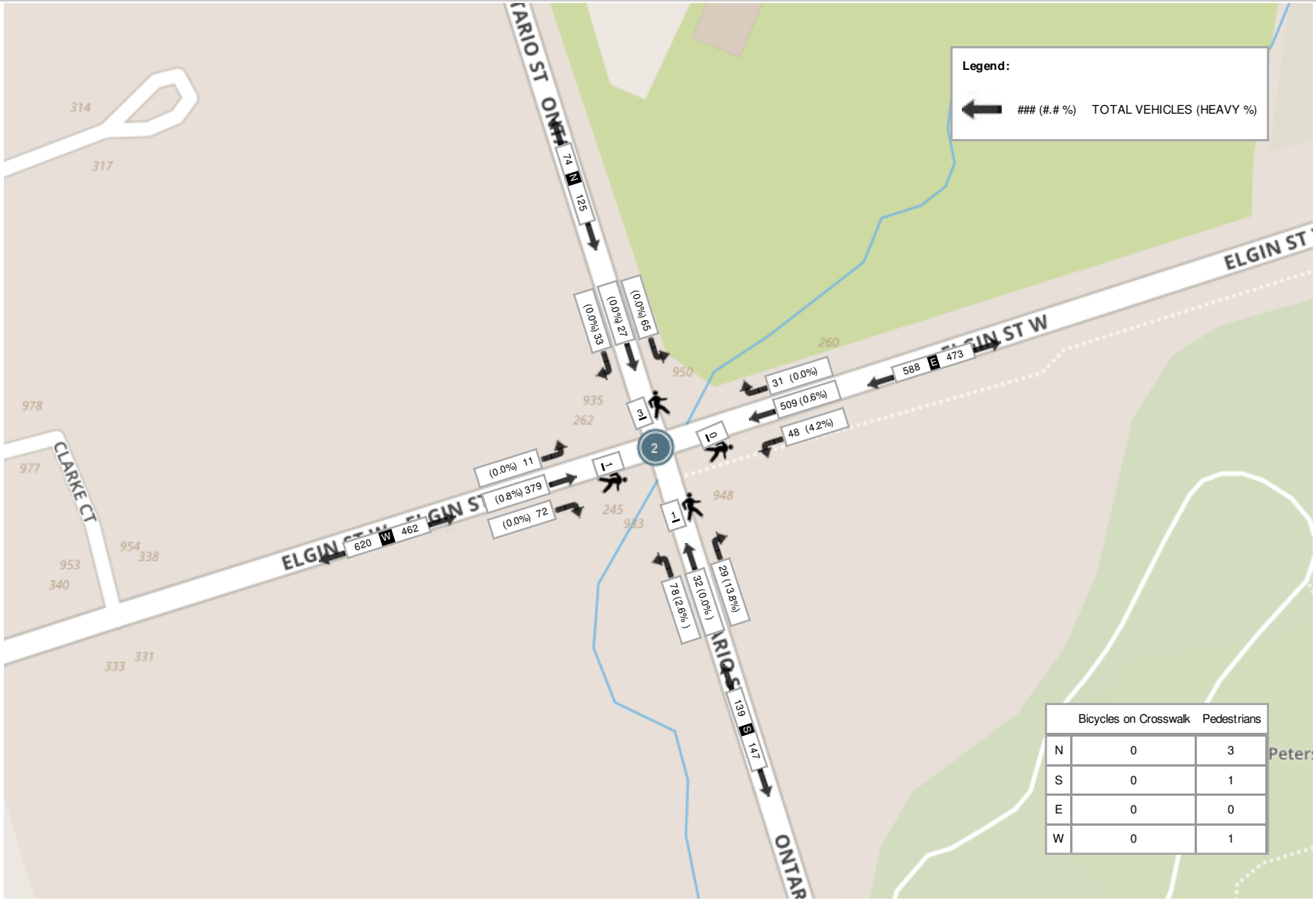
Phase	1	2	3	4	5	6	7	8
Minimum Green	6	16	6	16	6	16	6	16
Passage	2.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0
Maximum 1	16	37	32	30	16	37	32	30
Maximum 2	16	37	32	30	16	37	32	30
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX C

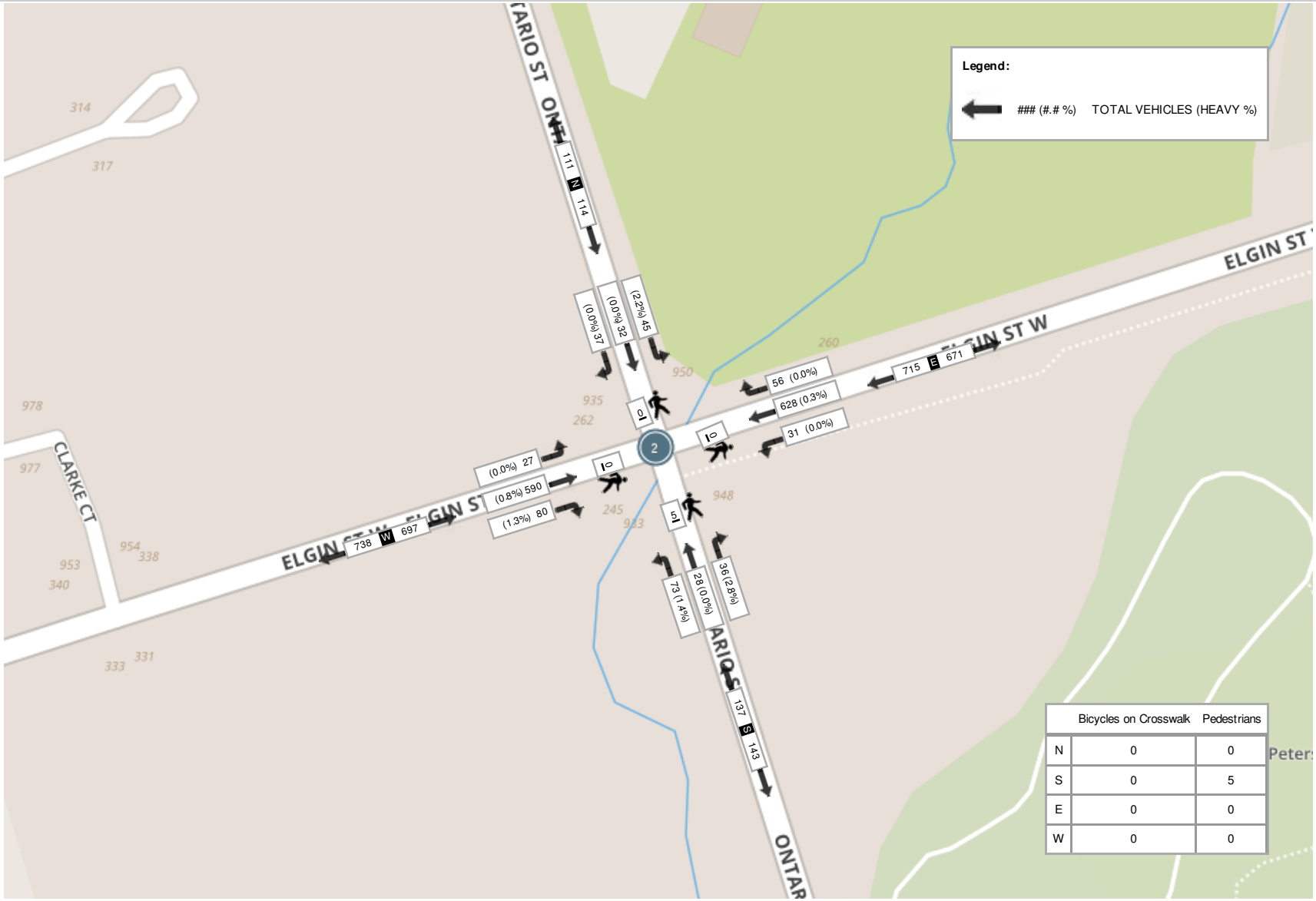
TMC Data

Peak Hour: 08:00 AM - 09:00 AM Weather: (-6.4 °C)



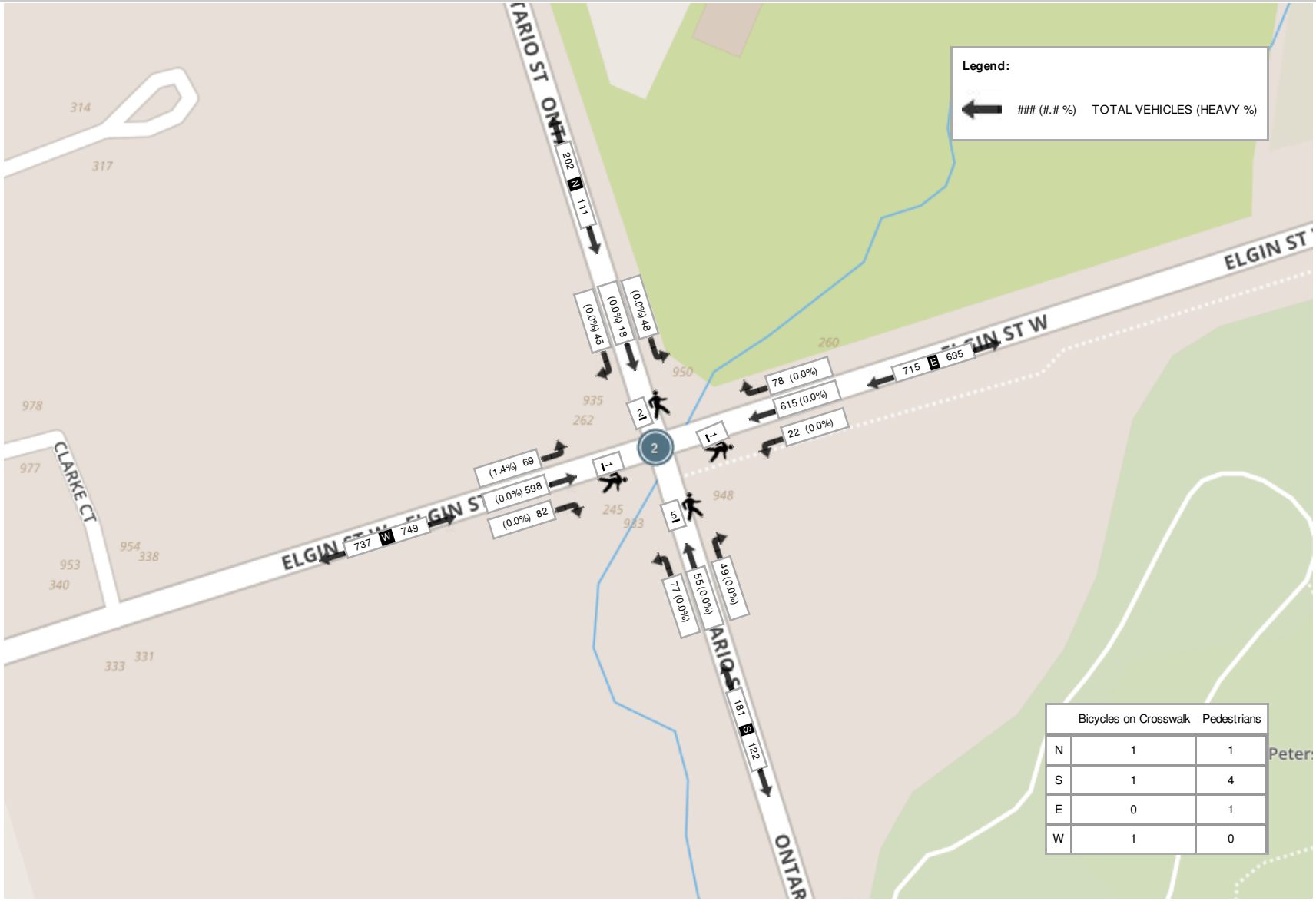
	Bicycles on Crosswalk	Pedestrians
N	0	3
S	0	1
E	0	0
W	0	1

Peak Hour: 11:00 AM - 12:00 PM Weather: Clear (-3.3 °C)



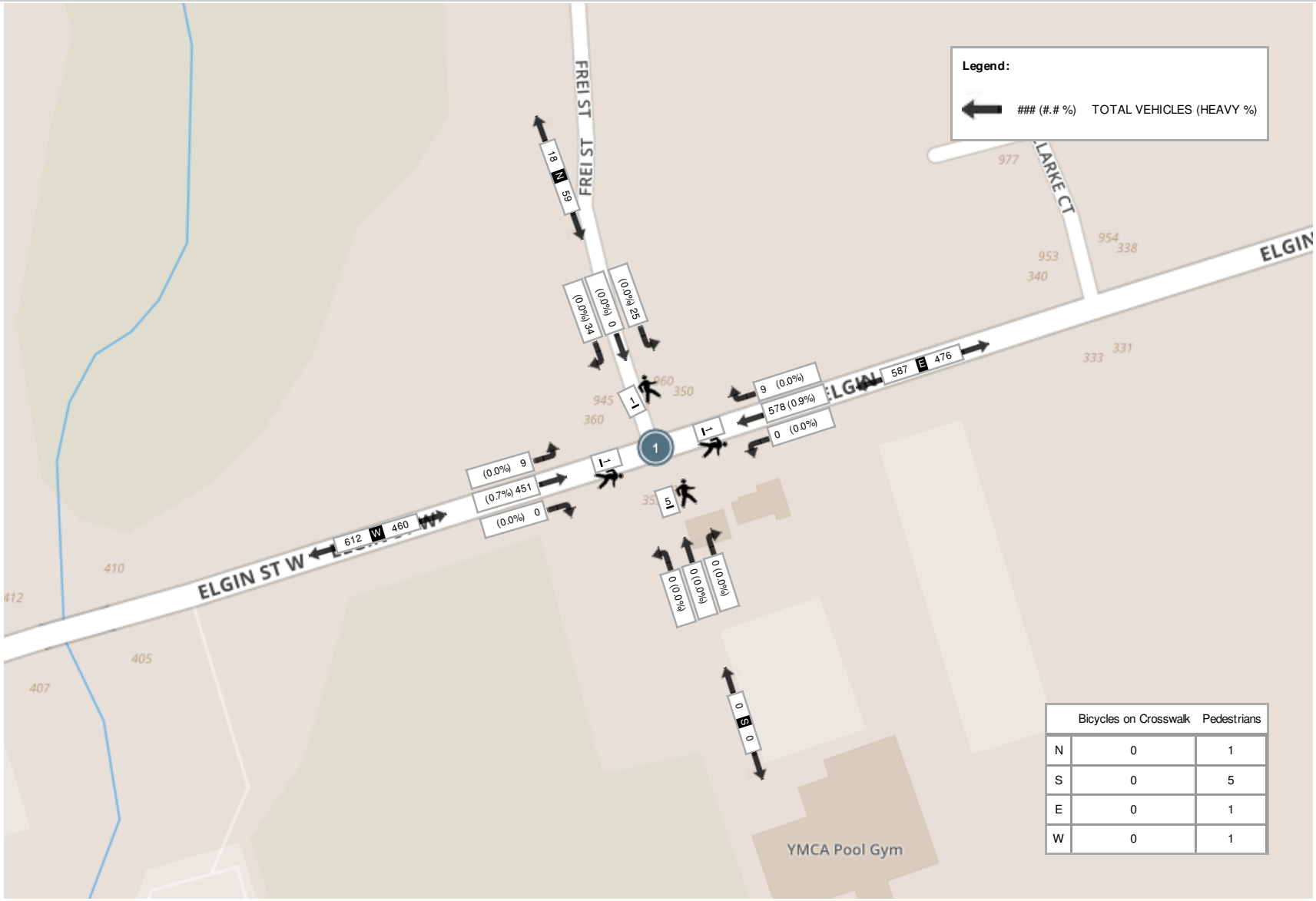
	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	5
E	0	0
W	0	0

Peak Hour: 04:00 PM - 05:00 PM Weather: Clear (-1.8 °C)



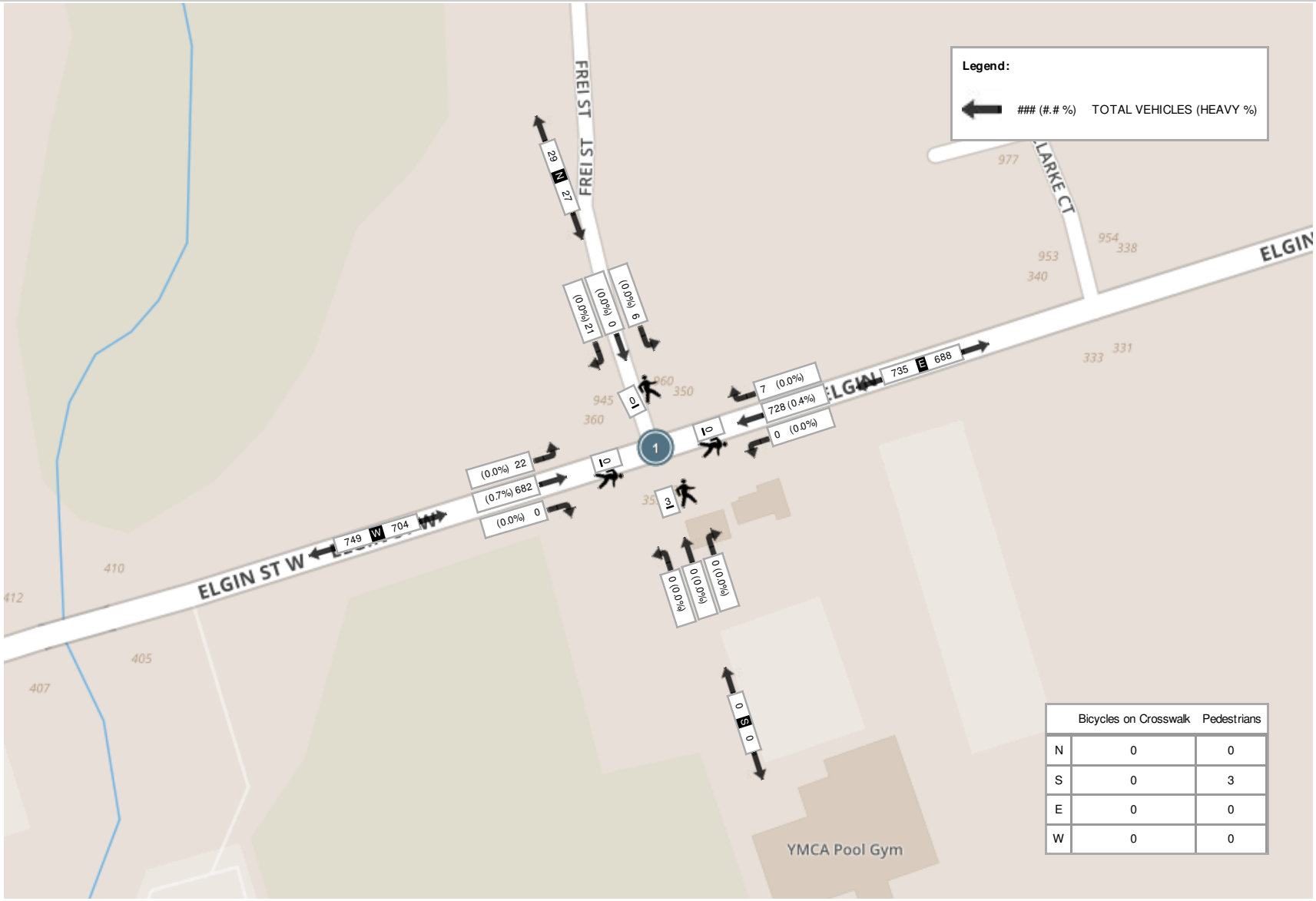
	Bicycles on Crosswalk	Pedestrians
N	1	1
S	1	4
E	0	1
W	1	0

Peak Hour: 08:00 AM - 09:00 AM Weather:



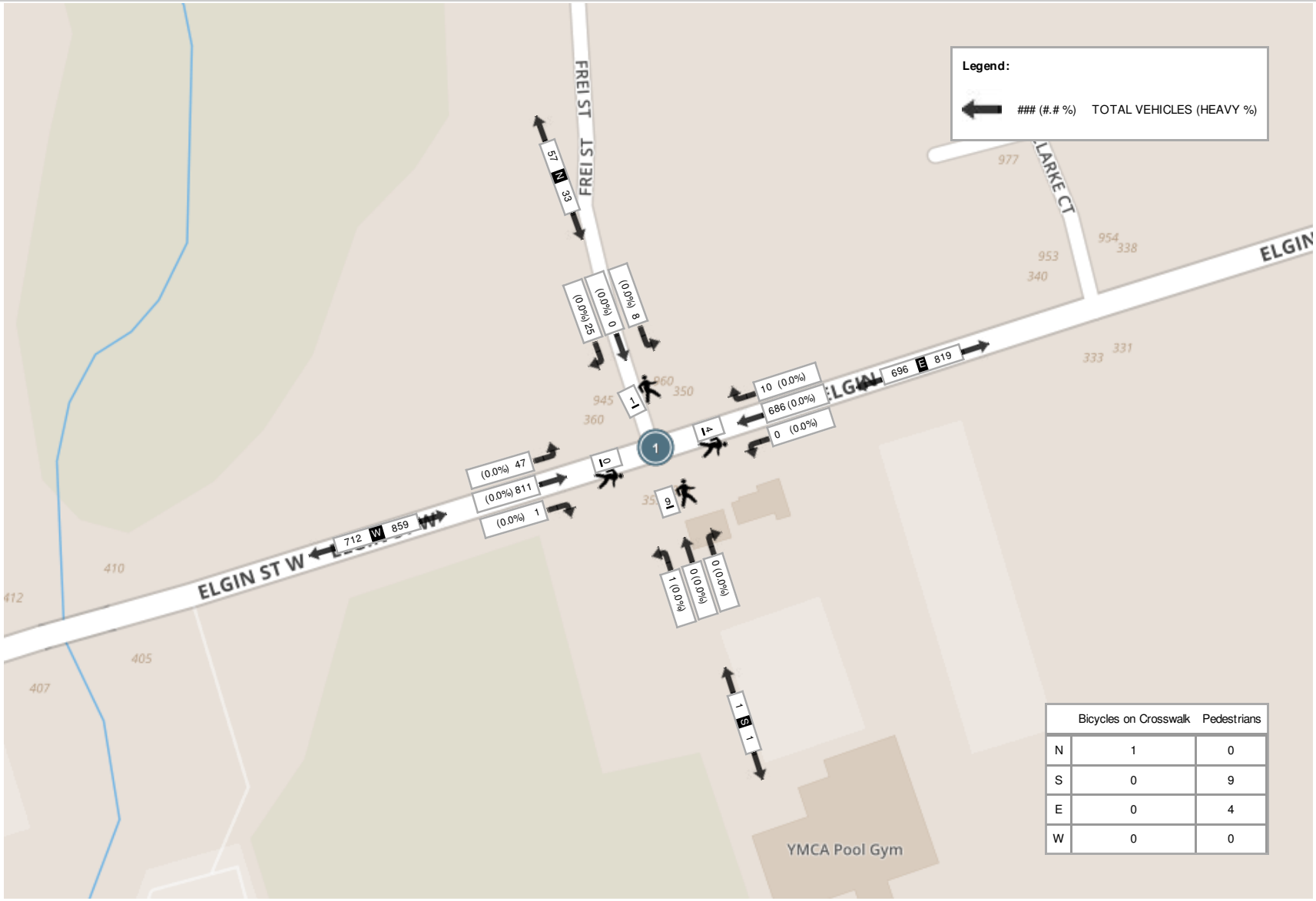
	Bicycles on Crosswalk	Pedestrians
N	0	1
S	0	5
E	0	1
W	0	1

Peak Hour: 11:00 AM - 12:00 PM Weather:



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

Peak Hour: 04:15 PM - 05:15 PM Weather:



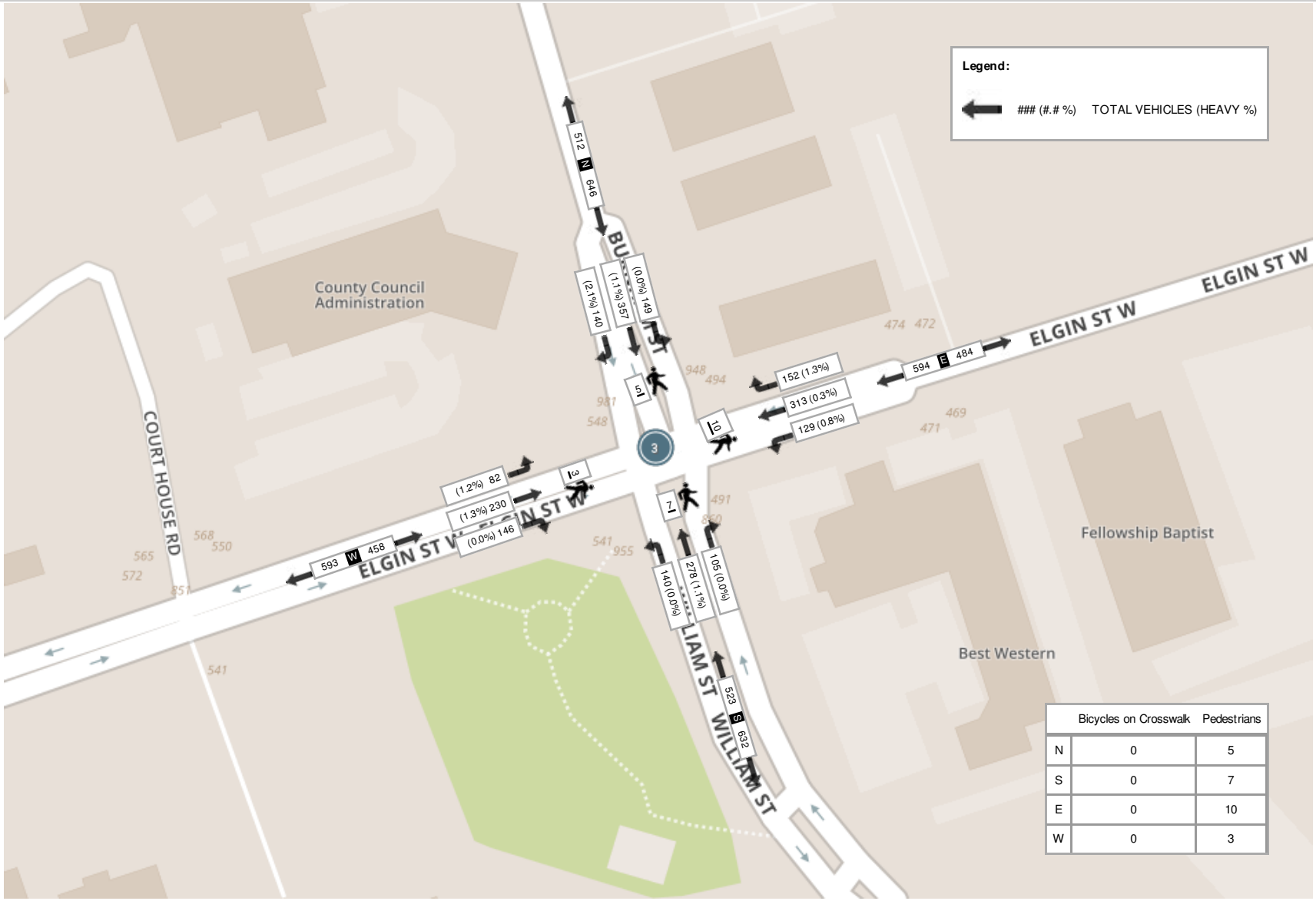
	Bicycles on Crosswalk	Pedestrians
N	1	0
S	0	9
E	0	4
W	0	0

Peak Hour: 08:00 AM - 09:00 AM Weather: (-6.4 °C)

Peak Hour: 11:15 AM - 12:15 PM Weather: Clear (-3.3 °C)

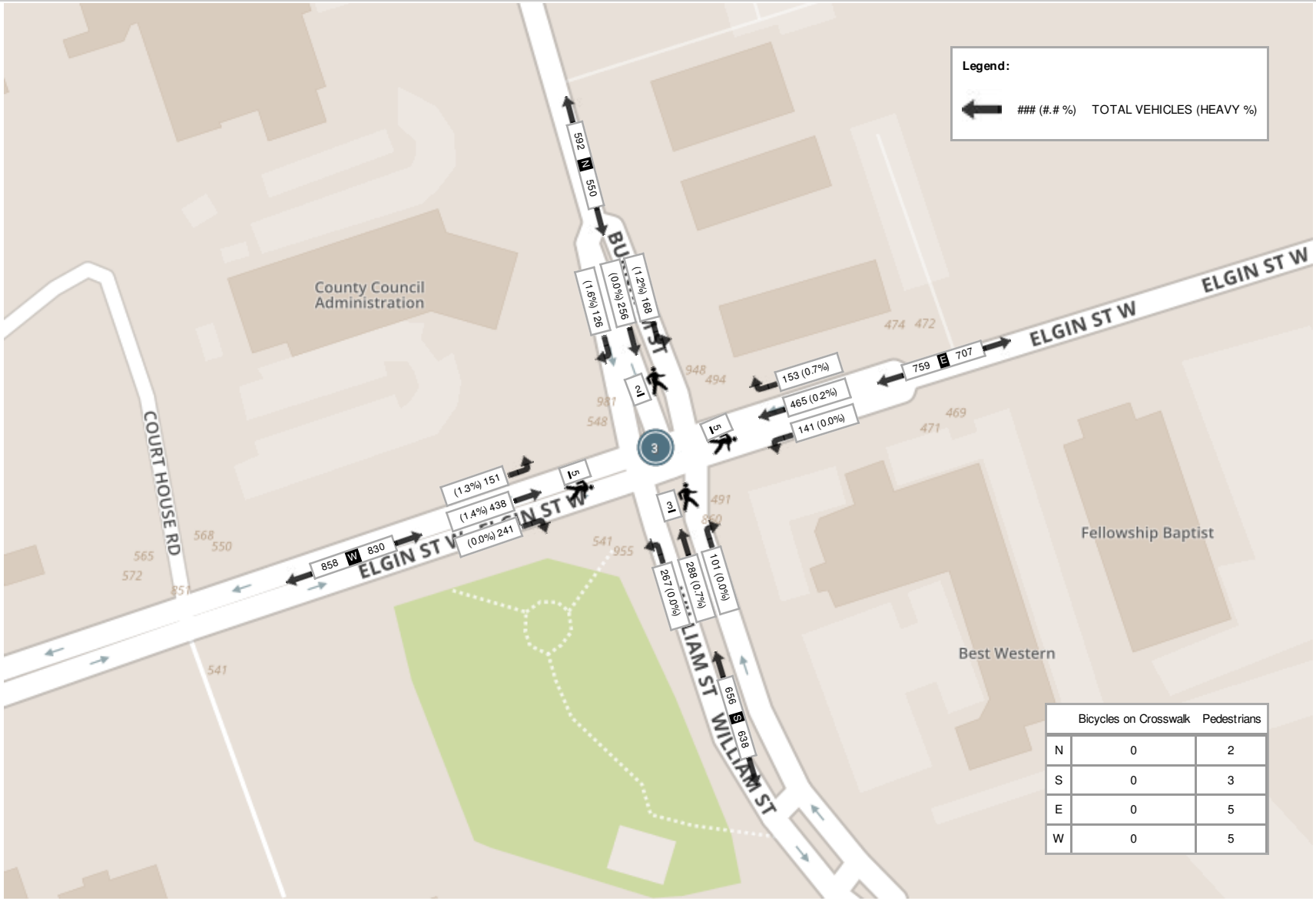
Peak Hour: 04:00 PM - 05:00 PM Weather: Clear (-1.8 °C)

Peak Hour: 08:00 AM - 09:00 AM Weather: (-6.4 °C)



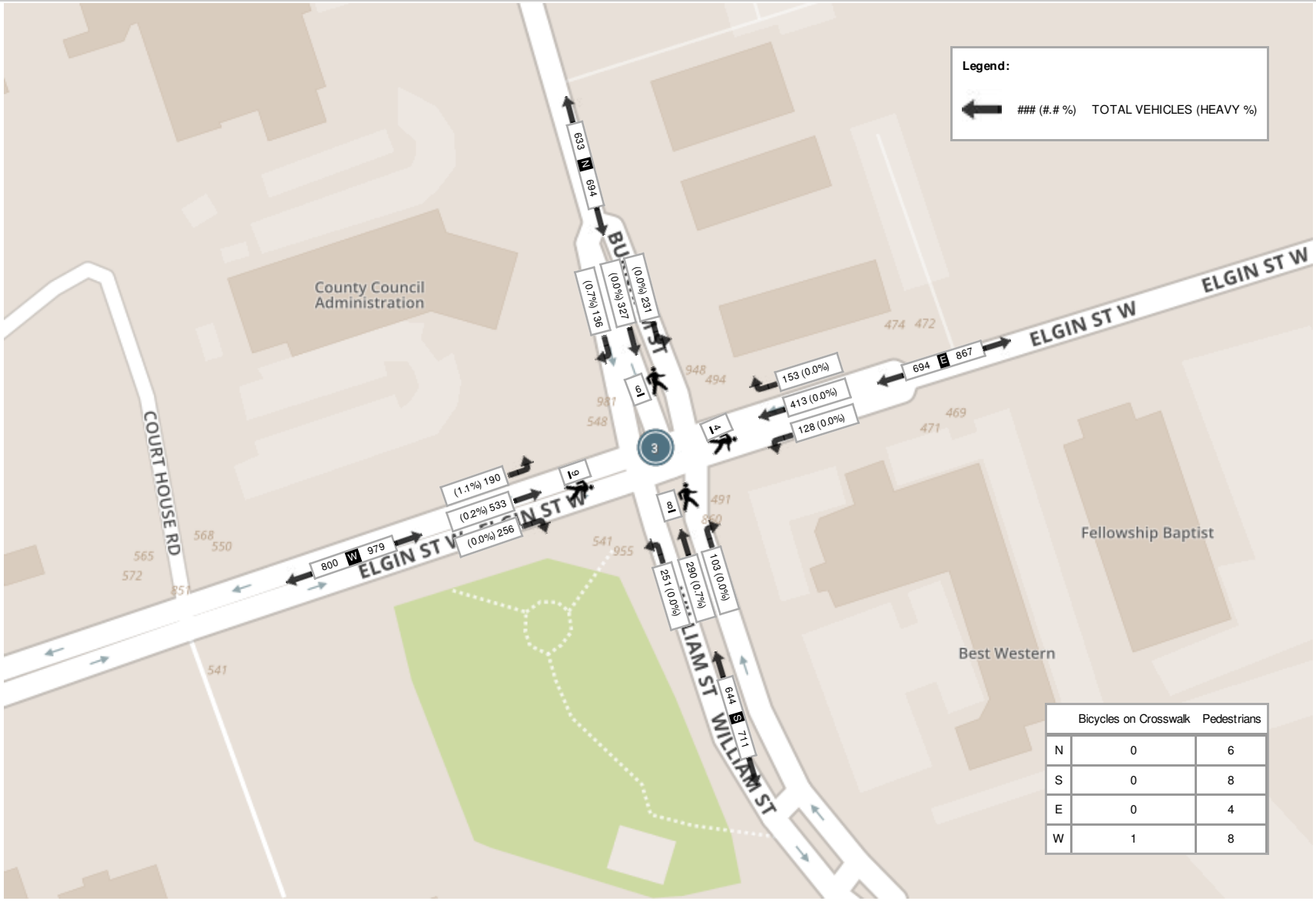
	Bicycles on Crosswalk	Pedestrians
N	0	5
S	0	7
E	0	10
W	0	3

Peak Hour: 11:15 AM - 12:15 PM Weather: Clear (-3.3 °C)



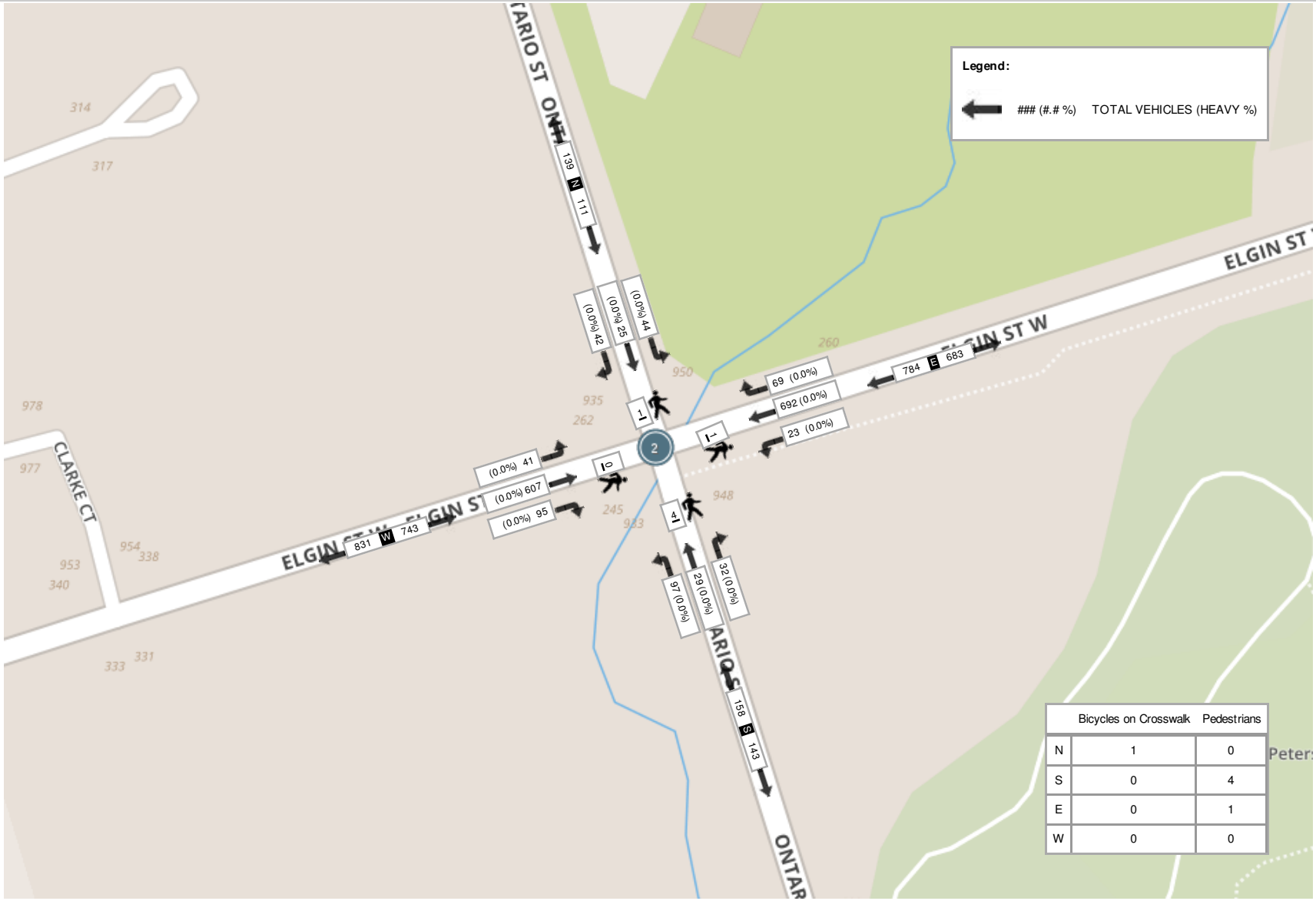
	Bicycles on Crosswalk	Pedestrians
N	0	2
S	0	3
E	0	5
W	0	5

Peak Hour: 04:15 PM - 05:15 PM Weather: Clear (-1.8 °C)



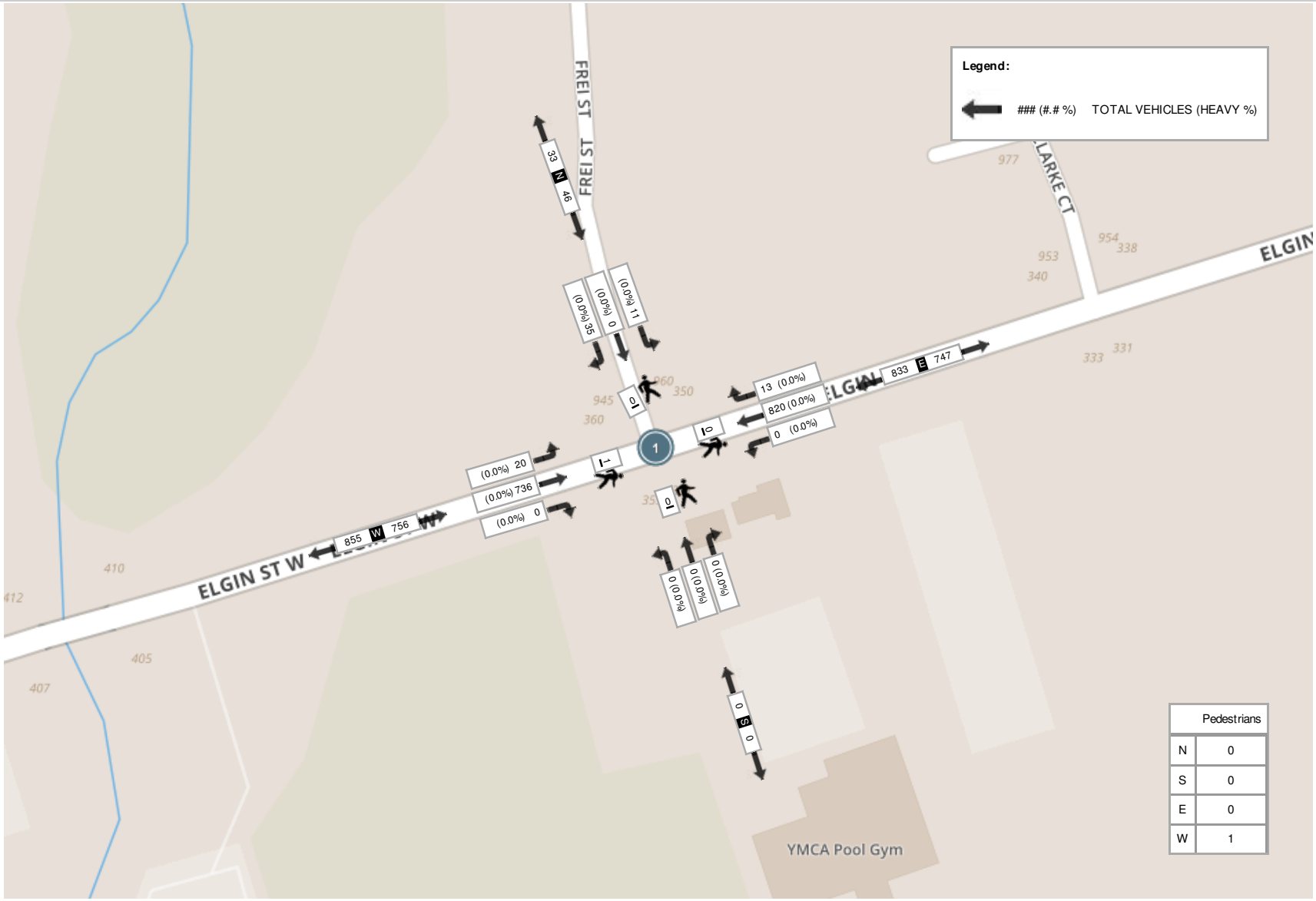
	Bicycles on Crosswalk	Pedestrians
N	0	6
S	0	8
E	0	4
W	1	8

Peak Hour: 11:30 AM - 12:30 PM Weather: Overcast (2.8 °C)



	Bicycles on Crosswalk	Pedestrians
N	1	0
S	0	4
E	0	1
W	0	0

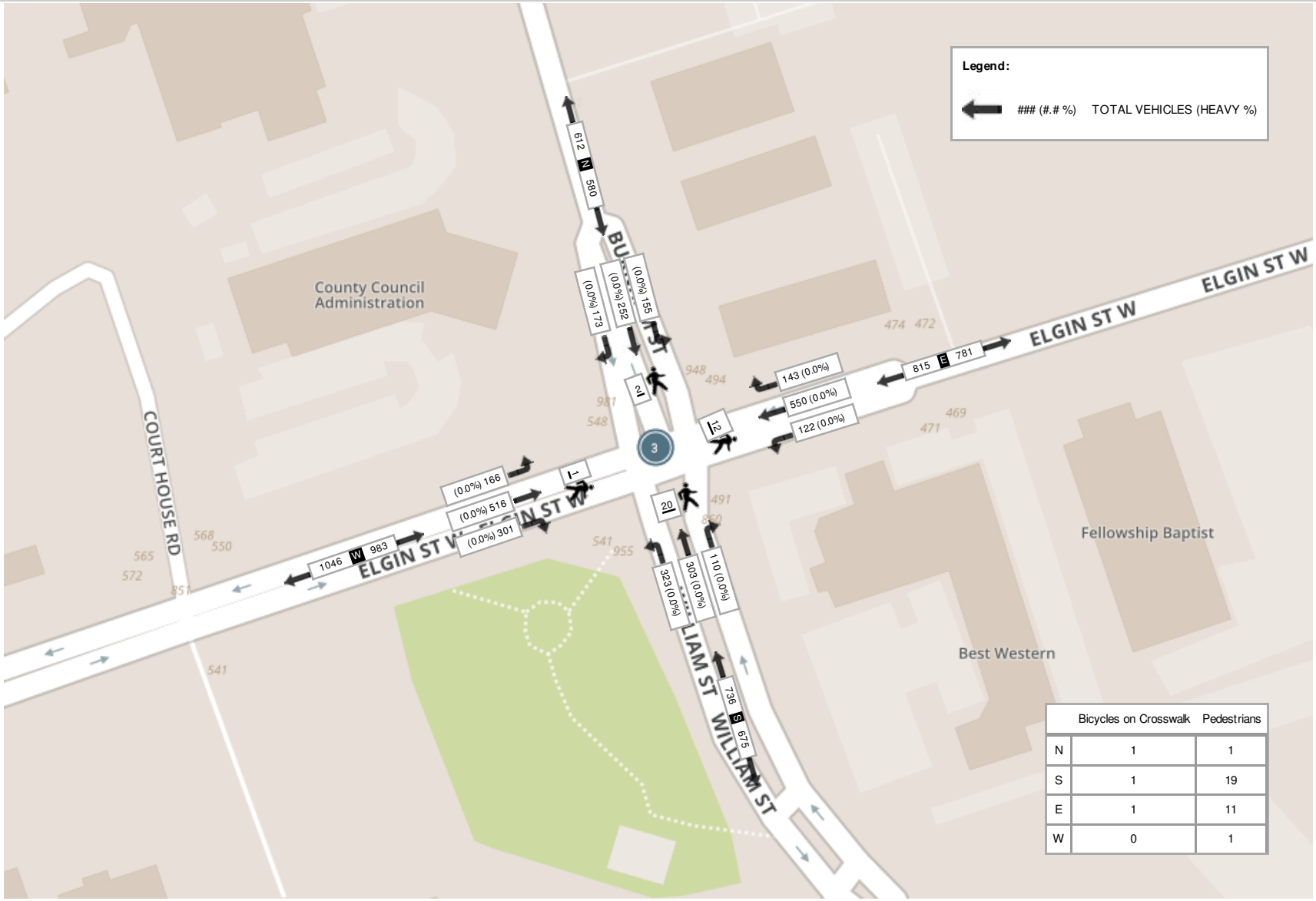
Peak Hour: 11:30 AM - 12:30 PM **Weather: Overcast (2.8 °C)**



Peak Hour: 11:30 AM - 12:30 PM Weather: Overcast (2.8 °C)

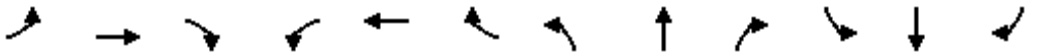
	Bicycles on Crosswalk	Pedestrians
N	0	6
S	0	5
E	0	8
W	1	8

Peak Hour: 11:45 AM - 12:45 PM **Weather: Overcast (2.8 °C)**



APPENDIX D

Synchro Analysis Report



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	240	152	135	326	159	146	290	110	156	372	146
Future Volume (vph)	86	240	152	135	326	159	146	290	110	156	372	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3399		3471	3416		1789	3416	
Flt Permitted	0.24	1.00	1.00	0.52	1.00		0.95	1.00		0.36	1.00	
Satd. Flow (perm)	454	3579	1601	978	3399		3471	3416		675	3416	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	113	276	183	188	423	212	192	349	151	229	413	180
RTOR Reduction (vph)	0	0	142	0	49	0	0	32	0	0	31	0
Lane Group Flow (vph)	113	276	41	188	586	0	192	468	0	229	562	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	31.8	21.6	21.6	35.6	23.5		11.0	30.4		45.8	32.6	
Effective Green, g (s)	31.8	21.6	21.6	35.6	23.5		11.0	30.4		45.8	32.6	
Actuated g/C Ratio	0.33	0.22	0.22	0.37	0.24		0.11	0.31		0.47	0.34	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	288	794	355	458	820		392	1067		468	1144	
v/s Ratio Prot	0.04	0.08		c0.05	c0.17		0.06	0.14		c0.07	c0.16	
v/s Ratio Perm	0.09		0.03	0.10						0.16		
v/c Ratio	0.39	0.35	0.11	0.41	0.72		0.49	0.44		0.49	0.49	
Uniform Delay, d1	24.0	31.9	30.2	21.9	33.8		40.5	26.6		16.0	25.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.3	0.1	0.6	3.0		1.0	1.3		0.8	1.5	
Delay (s)	24.9	32.2	30.4	22.5	36.8		41.5	28.0		16.8	27.3	
Level of Service	C	C	C	C	D		D	C		B	C	
Approach Delay (s)		30.2			33.5			31.7			24.4	
Approach LOS		C			C			C			C	

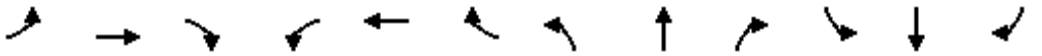
Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	97.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	470	0	0	602	10	0	0	0	27	0	36
Future Volume (vph)	10	470	0	0	602	10	0	0	0	27	0	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.93	
Flt Protected		1.00			1.00						0.98	
Satd. Flow (prot)		3573			3569						1712	
Flt Permitted		0.92			1.00						0.88	
Satd. Flow (perm)		3286			3569						1538	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	18	560	0	0	708	13	0	0	0	45	0	47
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	578	0	0	718	0	0	0	0	0	55	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		17.1			17.1						18.1	
Effective Green, g (s)		17.1			17.1						18.1	
Actuated g/C Ratio		0.36			0.36						0.38	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1190			1293						589	
v/s Ratio Prot					c0.20							
v/s Ratio Perm		0.18									c0.04	
v/c Ratio		0.49			0.56						0.09	
Uniform Delay, d1		11.6			12.0						9.3	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.3			0.5						0.1	
Delay (s)		12.0			12.5						9.4	
Level of Service		B			B						A	
Approach Delay (s)		12.0			12.5			0.0			9.4	
Approach LOS		B			B			A			A	

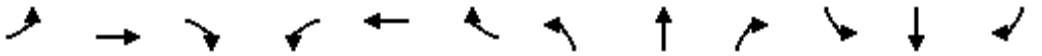
Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	395	75	50	530	33	82	34	31	68	29	35
Future Volume (vph)	12	395	75	50	530	33	82	34	31	68	29	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.94		1.00	0.91	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3462			3512		1772	1682		1789	1717	
Flt Permitted		0.93			0.76		0.70	1.00		0.70	1.00	
Satd. Flow (perm)		3216			2705		1297	1682		1327	1717	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	13	429	82	109	631	48	114	47	34	92	39	56
RTOR Reduction (vph)	0	22	0	0	6	0	0	16	0	0	32	0
Lane Group Flow (vph)	0	502	0	0	782	0	114	65	0	92	63	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.2			24.2		27.2	27.2		27.2	27.2	
Effective Green, g (s)		24.2			24.2		27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.38			0.38		0.43	0.43		0.43	0.43	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1227			1032		556	721		569	736	
v/s Ratio Prot								0.04			0.04	
v/s Ratio Perm		0.16			c0.29		c0.09			0.07		
v/c Ratio		0.41			0.76		0.21	0.09		0.16	0.09	
Uniform Delay, d1		14.4			17.0		11.3	10.8		11.1	10.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			3.2		0.8	0.2		0.6	0.2	
Delay (s)		14.6			20.3		12.2	11.0		11.7	11.0	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		14.6			20.3			11.7			11.3	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	239	153	70	265	220	120	302	62	287	520	228
Future Volume (vph)	146	239	153	70	265	220	120	302	62	287	520	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.94		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3358		1789	3349		1789	3480		1789	3411	
Flt Permitted	0.18	1.00		0.49	1.00		0.22	1.00		0.42	1.00	
Satd. Flow (perm)	332	3358		929	3349		408	3480		785	3411	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	187	263	184	89	335	250	146	325	73	334	584	265
RTOR Reduction (vph)	0	98	0	0	112	0	0	13	0	0	35	0
Lane Group Flow (vph)	187	349	0	89	473	0	146	385	0	334	814	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	41.3	29.4		30.6	22.7		47.2	35.5		55.6	39.9	
Effective Green, g (s)	41.3	29.4		30.6	22.7		47.2	35.5		55.6	39.9	
Actuated g/C Ratio	0.38	0.27		0.28	0.21		0.43	0.33		0.51	0.37	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	321	906		323	698		325	1134		549	1249	
v/s Ratio Prot	c0.08	0.10		0.02	c0.14		0.05	0.11		c0.09	c0.24	
v/s Ratio Perm	0.14			0.06			0.15			0.22		
v/c Ratio	0.58	0.39		0.28	0.68		0.45	0.34		0.61	0.65	
Uniform Delay, d1	24.9	32.4		29.6	39.7		19.9	27.8		16.4	28.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	0.3		0.5	2.6		1.0	0.8		1.9	2.7	
Delay (s)	27.6	32.7		30.1	42.4		20.9	28.6		18.4	31.4	
Level of Service	C	C		C	D		C	C		B	C	
Approach Delay (s)		31.2			40.7			26.6			27.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	92.1	113.3	112.7	36.2	72.2	110.0	111.1	72.8	65.2	79.1	66.1	53.2
Average Queue (m)	40.3	61.2	55.0	8.0	29.0	77.1	84.0	50.0	36.7	40.1	30.9	24.1
95th Queue (m)	76.5	95.8	90.2	28.5	55.0	108.6	113.5	72.9	63.8	65.1	57.0	41.2
Link Distance (m)	108.7	108.7	108.7	108.7	145.3	145.3	145.3	185.8	185.8	185.8	185.8	148.6
Upstream Blk Time (%)		1	1									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	73.1	70.8
Average Queue (m)	47.9	40.7
95th Queue (m)	67.0	63.0
Link Distance (m)	148.6	148.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St W

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	T	T	TR	LTR	LTR
Maximum Queue (m)	79.7	90.1	97.5	111.2	9.1	22.1
Average Queue (m)	51.2	56.5	41.9	74.6	0.3	7.2
95th Queue (m)	86.4	92.4	82.3	108.6	3.0	17.3
Link Distance (m)	75.8	75.8	189.4	189.4	103.3	86.8
Upstream Blk Time (%)	1	5				
Queuing Penalty (veh)	5	24				
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Ontario St & Elgin St W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	101.5	134.6	102.1	116.9	26.9	41.4	22.0	27.4
Average Queue (m)	54.4	70.3	57.1	77.2	12.6	13.5	11.0	10.6
95th Queue (m)	97.6	114.1	93.8	115.0	24.1	27.8	18.9	21.9
Link Distance (m)	189.4	189.4	283.2	283.2	163.9	163.9	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	149.6	71.8	100.3	34.3	72.8	104.8	111.7	79.8	74.8	65.4	104.0	104.0
Average Queue (m)	63.8	35.6	51.3	12.5	37.4	58.1	65.7	53.9	37.6	31.7	72.2	73.5
95th Queue (m)	113.2	58.9	81.8	26.0	60.3	86.1	112.9	73.9	63.2	52.4	103.3	113.6
Link Distance (m)	283.2	283.2	283.2	185.6	185.6	185.6	161.4	161.4	161.4	99.4	99.4	99.4
Upstream Blk Time (%)											2	7
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 15: Entrance & Elgin St W

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (m)	50.6	64.4	35.6	94.4	21.6
Average Queue (m)	4.1	8.4	5.1	3.7	5.6
95th Queue (m)	22.9	36.3	19.6	31.9	14.7
Link Distance (m)	145.3	145.3	75.8	75.8	121.9
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				1	
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 30

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	79.6	113.3	113.3	112.7	60.8	88.5	94.1	81.3	62.4	72.7	77.8	123.9
Average Queue (m)	44.9	68.7	68.1	7.1	29.3	64.2	68.7	45.9	31.2	46.8	37.5	58.7
95th Queue (m)	71.9	103.3	103.0	41.2	55.9	91.6	98.1	65.0	59.2	70.1	67.8	97.9
Link Distance (m)	108.7	108.7	108.7	108.7	86.2	86.2	86.2	185.8	185.8	185.8	185.8	148.6
Upstream Blk Time (%)		2	3	0		2	3					
Queuing Penalty (veh)		0	0	0		6	7					
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	72.1	61.4
Average Queue (m)	48.8	39.8
95th Queue (m)	68.2	65.6
Link Distance (m)	148.6	148.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St W

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	T	TR	LTR	LTR
Maximum Queue (m)	72.0	72.5	152.1	169.6	8.6	15.7
Average Queue (m)	58.1	61.4	48.4	87.2	0.7	6.7
95th Queue (m)	73.1	75.9	129.6	159.1	4.4	16.0
Link Distance (m)	57.1	57.1	189.4	189.4	103.3	86.8
Upstream Blk Time (%)	31	32				
Queuing Penalty (veh)	169	175				
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Ontario St & Elgin St W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	192.3	194.4	185.6	196.7	33.7	21.0	28.4	22.5
Average Queue (m)	128.1	139.8	65.2	82.7	14.6	9.9	11.5	9.6
95th Queue (m)	218.0	222.2	139.0	155.4	28.6	20.5	23.6	20.1
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)	1	4	0	1				
Queuing Penalty (veh)	7	18	0	5				
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	85.2	92.6	101.2	29.5	133.3	141.8	171.9	166.1	160.8	104.0	109.8	104.0
Average Queue (m)	44.2	41.0	56.5	14.1	73.5	109.0	82.3	82.5	62.1	50.5	73.1	63.7
95th Queue (m)	74.3	70.5	88.6	24.5	126.2	152.3	161.5	144.6	108.2	87.4	106.5	101.5
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)					1	12	14	5	0	1	2	1
Queuing Penalty (veh)					0	0	0	0	0	0	0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 15: Entrance & Elgin St W

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (m)	99.0	93.2	53.0	45.7	15.6
Average Queue (m)	45.3	49.1	6.9	4.3	4.0
95th Queue (m)	104.5	106.9	31.8	24.5	12.7
Link Distance (m)	86.2	86.2	57.1	57.1	109.1
Upstream Blk Time (%)	5	6	0		
Queuing Penalty (veh)	28	30	0		
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 445

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	35.2	53.9	53.3	24.2	39.6	82.4	88.3	48.0	44.8	59.6	55.4	52.5
Average Queue (m)	16.8	21.5	23.2	1.4	25.4	42.8	52.5	28.8	11.4	37.9	28.8	25.8
95th Queue (m)	29.7	42.3	40.9	9.9	38.6	75.0	85.2	47.1	36.3	55.2	47.6	43.7
Link Distance (m)	108.7	108.7	108.7	108.7	81.3	81.3	81.3	185.8	185.8	185.8	185.8	148.6
Upstream Blk Time (%)						0	1					
Queuing Penalty (veh)						0	2					
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	69.6	89.6
Average Queue (m)	44.5	34.2
95th Queue (m)	61.0	65.3
Link Distance (m)	148.6	148.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St W

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (m)	39.2	45.5	70.0	105.1	22.2
Average Queue (m)	19.5	25.6	23.6	54.8	9.7
95th Queue (m)	34.0	41.7	51.0	95.8	19.8
Link Distance (m)	61.7	61.7	189.4	189.4	86.8
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	41.5	81.2	48.9	63.4	39.3	27.9	40.3	22.1
Average Queue (m)	20.6	40.6	30.9	41.2	12.4	10.0	12.9	10.7
95th Queue (m)	38.0	70.1	46.0	60.5	27.7	23.3	26.9	20.0
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	60.3	53.1	85.7	28.5	78.2	108.9	53.3	71.5	68.5	104.0	104.0	104.0
Average Queue (m)	30.0	28.1	40.8	11.4	37.5	66.5	27.9	45.2	33.8	47.0	64.6	59.7
95th Queue (m)	54.1	49.9	71.0	22.3	67.5	99.9	45.1	66.7	62.1	76.6	92.7	93.5
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)										1	1	1
Queuing Penalty (veh)										0	0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 15: Entrance & Elgin St W

Movement	WB	WB	NB
Directions Served	LT	T	LR
Maximum Queue (m)	9.2	15.7	14.9
Average Queue (m)	0.3	0.5	6.0
95th Queue (m)	3.0	5.2	13.3
Link Distance (m)	61.7	61.7	109.5
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 3

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	64.6	77.6	67.3	23.9	48.0	87.2	88.1	91.9	79.8	66.4	62.8	53.6
Average Queue (m)	30.1	44.0	45.0	1.9	23.5	69.7	72.1	51.8	38.8	40.5	30.0	30.1
95th Queue (m)	55.7	65.6	65.3	11.5	40.9	88.1	91.1	75.8	63.1	62.2	55.1	48.5
Link Distance (m)	108.7	108.7	108.7	108.7	80.3	80.3	80.3	185.8	185.8	185.8	185.8	148.6
Upstream Blk Time (%)						4	5					
Queuing Penalty (veh)						12	16					
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	59.8	72.5
Average Queue (m)	37.3	35.0
95th Queue (m)	55.4	65.8
Link Distance (m)	148.6	148.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St W

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (m)	66.6	69.7	136.0	148.8	23.9
Average Queue (m)	30.5	35.7	55.1	89.9	7.6
95th Queue (m)	61.8	60.6	122.5	143.6	17.8
Link Distance (m)	63.0	63.0	189.4	189.4	86.8
Upstream Blk Time (%)	1	1			
Queuing Penalty (veh)	3	3			
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St W/Elgin St. W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	94.4	99.8	52.1	79.4	26.8	27.2	16.1	30.2
Average Queue (m)	41.9	58.9	32.3	54.8	16.1	7.9	7.0	12.0
95th Queue (m)	73.5	89.7	49.6	77.5	25.6	19.4	15.6	25.8
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St. W/Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	104.1	54.5	62.2	22.1	74.2	79.2	78.3	94.2	92.9	62.1	104.0	104.0
Average Queue (m)	57.2	29.4	43.6	10.7	33.1	57.8	38.6	49.0	36.7	26.7	65.0	66.4
95th Queue (m)	88.3	48.9	62.0	21.7	59.2	80.5	65.8	76.2	68.0	46.1	97.1	116.0
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)											2	5
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 15: Entrance & Elgin St W

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (m)	16.8	20.4	41.0	63.0	21.6
Average Queue (m)	1.4	1.7	3.7	11.7	6.4
95th Queue (m)	7.8	10.4	18.2	43.3	16.0
Link Distance (m)	80.3	80.3	63.0	63.0	106.2
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				1	
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 34

Intersection: 3: William St/Burnham St & Elgin St. W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	59.2	78.7	73.4	28.3	67.3	68.4	76.0	60.2	49.5	60.2	66.6	80.1
Average Queue (m)	32.9	50.4	47.0	5.3	23.9	45.7	49.1	38.2	22.8	43.0	32.4	34.6
95th Queue (m)	55.8	75.8	73.2	19.2	46.0	69.1	73.8	58.3	48.1	61.9	56.9	57.7
Link Distance (m)	108.7	108.7	108.7	108.7	66.4	66.4	66.4	185.8	185.8	185.8	185.8	148.5
Upstream Blk Time (%)					0	1	2					
Queuing Penalty (veh)					0	2	6					
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St. W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	71.4	71.4
Average Queue (m)	43.0	37.0
95th Queue (m)	65.6	60.8
Link Distance (m)	148.5	148.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St. W/Elgin St W

Movement	EB	EB	WB	WB	SB
Directions Served	LT	TR	T	TR	LTR
Maximum Queue (m)	80.0	91.4	61.6	92.8	16.4
Average Queue (m)	56.2	61.3	20.0	58.3	4.6
95th Queue (m)	87.8	94.3	47.6	89.3	12.5
Link Distance (m)	76.5	76.5	189.4	189.4	86.8
Upstream Blk Time (%)	3	4			
Queuing Penalty (veh)	16	21			
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St W/Elgin St. W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	142.2	127.5	75.7	87.8	25.5	21.6	22.1	28.9
Average Queue (m)	57.9	72.3	36.4	49.4	12.2	7.8	10.1	10.3
95th Queue (m)	107.4	116.3	62.7	74.8	25.0	16.6	20.3	22.7
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St. W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	84.5	51.8	77.8	27.1	134.0	137.1	72.4	116.8	87.9	60.8	103.4	104.0
Average Queue (m)	43.0	33.6	49.4	13.0	65.3	95.0	46.9	64.9	52.9	34.3	58.5	49.3
95th Queue (m)	74.8	52.3	75.8	22.0	126.5	149.7	73.8	90.5	73.9	55.0	91.1	84.4
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)					1	8					0	0
Queuing Penalty (veh)					0	0					0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 15: Entrance & Elgin St. W

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (m)	46.9	46.3	35.6	41.3	21.4
Average Queue (m)	4.7	5.9	4.6	5.1	4.8
95th Queue (m)	22.1	24.6	20.0	23.8	14.1
Link Distance (m)	66.4	66.4	76.5	76.5	101.6
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 45

Intersection: 3: William St/Burnham St & Elgin St. W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	41.1	54.6	51.0	16.6	40.9	64.3	71.2	47.9	41.3	66.0	52.3	46.8
Average Queue (m)	17.5	18.9	23.2	0.6	21.7	30.7	39.3	24.6	6.7	31.0	21.2	23.5
95th Queue (m)	32.7	39.0	44.8	5.5	37.6	50.5	61.0	39.5	20.8	53.3	42.3	38.9
Link Distance (m)	108.7	108.7	108.7	108.7	82.3	82.3	82.3	185.8	185.8	185.8	185.8	148.6
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St. W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	60.1	56.1
Average Queue (m)	38.6	29.9
95th Queue (m)	60.4	54.5
Link Distance (m)	148.6	148.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St. W/Elgin St W

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (m)	40.0	48.5	51.6	65.1	22.1
Average Queue (m)	16.6	20.6	19.7	43.0	8.0
95th Queue (m)	30.4	41.0	40.5	64.0	17.6
Link Distance (m)	60.6	60.6	189.4	189.4	86.8
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St W/Elgin St. W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	64.0	77.8	60.8	60.3	26.9	22.0	28.4	28.4
Average Queue (m)	20.1	39.2	29.3	40.2	10.4	8.3	10.8	8.9
95th Queue (m)	44.4	64.7	53.0	61.5	22.6	19.6	20.9	20.3
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St. W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	67.8	60.3	60.8	27.8	55.9	77.7	38.5	74.2	61.8	91.9	98.6	104.0
Average Queue (m)	25.3	29.3	39.6	13.1	30.1	54.1	23.1	42.3	28.2	43.1	60.3	55.5
95th Queue (m)	50.3	50.8	61.5	23.9	51.4	80.4	37.6	64.2	55.0	73.3	88.8	86.1
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)											0	1
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 15: Entrance & Elgin St. W

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (m)	16.4	9.1
Average Queue (m)	0.9	5.5
95th Queue (m)	6.3	12.5
Link Distance (m)	60.6	100.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	60.4	101.1	95.9	26.8	84.6	137.4	165.0	94.2	87.2	84.3	92.7	66.8
Average Queue (m)	33.0	63.3	56.9	6.5	31.8	75.5	87.1	59.5	48.9	44.9	39.6	31.0
95th Queue (m)	52.5	92.4	83.8	20.9	60.2	114.6	131.3	80.1	67.9	66.3	69.3	55.2
Link Distance (m)	108.7	108.7	108.7	108.7	232.1	232.1	232.1	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	61.0	89.2
Average Queue (m)	44.5	44.5
95th Queue (m)	61.9	69.9
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St W

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	T	T	TR	LTR	LTR
Maximum Queue (m)	237.2	236.8	189.1	187.2	9.0	14.9
Average Queue (m)	69.1	75.0	58.8	85.8	0.6	5.3
95th Queue (m)	156.7	161.1	131.5	150.8	4.3	13.0
Link Distance (m)	232.1	232.1	189.4	189.4	103.3	82.6
Upstream Blk Time (%)	2	3	0	0		
Queuing Penalty (veh)	11	15	0	0		
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Ontario St & Elgin St W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	202.6	196.0	251.6	255.4	45.7	21.4	22.1	39.3
Average Queue (m)	127.9	132.9	70.3	87.3	17.7	8.6	8.8	10.7
95th Queue (m)	220.9	220.5	172.2	185.3	35.4	17.7	17.8	23.3
Link Distance (m)	189.4	189.4	283.2	283.2	163.9	163.9	97.0	97.0
Upstream Blk Time (%)	9	11						
Queuing Penalty (veh)	41	51						
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	110.8	56.8	82.9	34.4	98.5	136.8	78.2	78.5	78.7	60.4	103.4	104.0
Average Queue (m)	55.8	29.5	46.3	12.5	37.3	59.4	49.4	51.2	37.1	29.9	67.4	70.4
95th Queue (m)	98.2	51.4	76.8	26.1	69.0	94.9	73.8	73.9	68.3	48.8	91.1	109.3
Link Distance (m)	283.2	283.2	283.2	185.6	185.6	185.6	161.4	161.4	161.4	99.4	99.4	99.4
Upstream Blk Time (%)											1	6
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 119

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	71.6	106.7	113.3	22.5	72.0	85.8	97.3	77.0	60.8	92.2	82.1	99.3
Average Queue (m)	37.6	63.7	66.7	4.6	28.6	53.8	61.3	45.8	30.1	54.4	46.5	51.3
95th Queue (m)	61.0	99.2	105.7	17.2	52.4	85.9	90.2	67.1	58.5	81.0	71.3	91.4
Link Distance (m)	108.7	108.7	108.7	108.7	154.2	154.2	154.2	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)		0	1									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	93.6	81.7
Average Queue (m)	57.8	47.0
95th Queue (m)	79.8	74.5
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St W

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	T	TR	LTR	LTR
Maximum Queue (m)	157.9	157.8	88.3	119.2	9.0	21.1
Average Queue (m)	85.4	89.9	25.4	62.2	0.3	7.1
95th Queue (m)	153.3	157.1	64.8	96.0	3.0	16.8
Link Distance (m)	154.2	154.2	189.4	189.4	103.3	82.6
Upstream Blk Time (%)	3	3				
Queuing Penalty (veh)	14	13				
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Ontario St & Elgin St W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	195.4	193.4	79.0	89.6	43.4	27.9	20.7	28.4
Average Queue (m)	127.2	142.0	40.9	59.5	16.1	8.5	6.8	11.0
95th Queue (m)	232.3	239.8	68.1	86.9	31.4	18.6	16.5	20.3
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)	2	7						
Queuing Penalty (veh)	11	33						
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	137.4	90.5	113.4	28.4	131.7	141.8	97.8	114.7	104.0	103.4	104.0	104.0
Average Queue (m)	47.6	38.1	54.5	14.9	57.6	98.8	50.2	73.7	62.0	42.6	66.7	63.7
95th Queue (m)	100.6	62.0	93.0	28.4	108.3	141.1	80.0	102.3	91.2	76.6	98.6	100.8
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)					0	3				0	4	3
Queuing Penalty (veh)					0	0				0	0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 71

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	54.4	40.8	52.8	16.5	52.1	61.0	72.0	41.0	23.0	67.8	62.1	46.7
Average Queue (m)	20.8	22.8	24.5	1.6	22.7	36.9	48.6	27.1	5.8	37.5	25.0	23.6
95th Queue (m)	37.9	38.4	44.4	9.6	37.7	55.4	68.4	39.7	18.6	57.4	48.0	40.3
Link Distance (m)	108.7	108.7	108.7	108.7	154.2	154.2	154.2	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	73.3	75.5
Average Queue (m)	45.0	37.6
95th Queue (m)	63.6	63.5
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St W

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (m)	44.4	60.5	80.8	108.3	21.0
Average Queue (m)	16.1	30.4	18.7	51.6	7.5
95th Queue (m)	31.7	54.8	47.5	81.1	16.6
Link Distance (m)	154.2	154.2	189.4	189.4	82.6
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	80.6	99.0	59.2	69.0	33.2	28.7	22.7	28.6
Average Queue (m)	24.8	43.4	30.2	41.4	12.1	11.5	10.8	9.1
95th Queue (m)	50.8	76.4	52.9	64.1	27.0	25.5	22.3	21.9
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	73.2	56.9	74.0	34.2	79.9	133.3	48.1	79.8	69.0	87.4	103.4	104.0
Average Queue (m)	29.8	32.7	45.3	15.7	41.0	74.0	22.3	49.0	37.6	47.2	71.7	65.5
95th Queue (m)	55.4	49.2	67.0	29.0	71.7	116.3	38.6	71.8	62.8	74.3	101.5	97.3
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)						0					2	2
Queuing Penalty (veh)						0					0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	84.9	59.8	72.1	16.9	59.8	92.7	99.2	72.2	67.2	66.8	55.9	47.5
Average Queue (m)	33.3	42.6	47.6	3.3	21.4	63.7	72.6	49.4	36.7	37.9	31.0	25.0
95th Queue (m)	62.4	62.3	66.9	14.3	41.1	89.2	99.6	68.2	61.8	58.4	52.1	42.0
Link Distance (m)	108.7	108.7	108.7	108.7	154.2	154.2	154.2	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	87.2	72.3
Average Queue (m)	40.6	32.8
95th Queue (m)	63.4	60.8
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St W

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (m)	63.0	82.1	121.0	148.6	19.9
Average Queue (m)	33.2	41.3	41.4	82.1	7.6
95th Queue (m)	57.8	72.1	95.8	129.0	16.8
Link Distance (m)	154.2	154.2	189.4	189.4	82.6
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St W/Elgin St. W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	101.2	100.8	76.9	87.6	44.9	21.7	22.1	23.8
Average Queue (m)	50.7	63.9	35.7	51.4	18.8	9.7	10.7	11.1
95th Queue (m)	80.8	97.5	62.0	74.2	38.4	18.9	23.1	21.0
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St. W/Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	67.5	63.2	73.8	21.2	68.9	92.9	82.4	90.1	83.7	47.6	102.7	109.8
Average Queue (m)	47.7	30.5	47.0	11.7	27.6	52.7	40.0	50.9	41.7	25.5	57.3	60.9
95th Queue (m)	68.7	52.6	68.7	20.8	49.1	80.2	66.8	75.2	70.2	43.9	78.9	100.7
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)											0	2
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: William St/Burnham St & Elgin St. W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	90.5	93.9	76.4	29.4	41.0	84.6	105.6	78.3	53.7	66.7	56.9	54.4
Average Queue (m)	31.0	45.1	46.4	6.1	24.5	49.7	60.8	41.7	26.2	42.1	31.2	37.9
95th Queue (m)	58.6	73.2	69.4	22.1	42.2	80.8	92.8	59.6	54.8	63.5	53.1	57.2
Link Distance (m)	108.7	108.7	108.7	108.7	154.2	154.2	154.2	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St. W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	74.0	70.7
Average Queue (m)	48.6	38.2
95th Queue (m)	71.1	68.5
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St. W/Elgin St W

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	T	TR	LTR	LTR
Maximum Queue (m)	126.7	123.6	62.7	97.7	9.2	21.3
Average Queue (m)	53.3	59.9	26.1	53.6	1.2	5.0
95th Queue (m)	94.8	101.8	52.2	90.8	6.2	13.9
Link Distance (m)	154.2	154.2	189.4	189.4	103.3	82.6
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Ontario St & Elgin St W/Elgin St. W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	192.1	199.9	72.6	114.4	26.8	21.0	29.4	22.7
Average Queue (m)	81.5	95.1	40.2	53.3	13.0	7.2	10.3	10.3
95th Queue (m)	184.4	195.8	67.5	86.0	23.5	16.4	25.6	20.0
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)	1	3						
Queuing Penalty (veh)	5	13						
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St. W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	73.6	66.5	77.6	28.6	136.0	136.0	110.8	111.6	91.6	65.7	93.4	102.8
Average Queue (m)	42.9	31.2	42.3	12.3	58.9	87.5	46.0	64.4	54.0	37.1	63.5	53.3
95th Queue (m)	69.6	52.8	64.5	23.6	122.5	139.8	77.4	95.1	80.0	59.5	87.2	85.8
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)					3	10					0	1
Queuing Penalty (veh)					0	0					0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 18

Intersection: 3: William St/Burnham St & Elgin St. W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	34.4	40.1	53.3	16.9	42.5	86.1	103.7	47.4	41.0	65.8	63.0	40.2
Average Queue (m)	15.0	19.8	21.7	1.7	20.9	35.3	47.8	29.2	13.0	30.5	21.6	21.0
95th Queue (m)	24.7	34.6	40.8	10.0	36.6	59.3	77.3	46.8	36.2	57.7	45.8	33.6
Link Distance (m)	108.7	108.7	108.7	108.7	154.2	154.2	154.2	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St. W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	65.3	57.9
Average Queue (m)	44.1	32.6
95th Queue (m)	65.1	55.1
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St. W/Elgin St W

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (m)	39.8	43.4	77.8	91.3	25.8
Average Queue (m)	16.0	20.3	21.1	44.2	7.7
95th Queue (m)	33.8	33.8	46.4	77.8	18.7
Link Distance (m)	154.2	154.2	189.4	189.4	82.6
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St W/Elgin St. W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	49.8	74.1	55.4	72.5	31.2	42.2	28.6	21.5
Average Queue (m)	20.1	39.9	29.9	42.4	11.0	10.0	9.6	8.6
95th Queue (m)	38.9	62.3	48.4	67.4	24.2	24.5	20.5	17.7
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St. W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	34.9	51.2	69.5	21.8	81.1	99.1	46.2	84.1	67.1	66.0	78.5	90.9
Average Queue (m)	20.7	22.4	34.8	10.3	33.1	57.7	22.6	41.1	28.1	37.3	54.6	48.4
95th Queue (m)	32.5	38.4	58.7	20.7	59.7	88.3	39.5	66.7	54.5	58.2	79.6	82.6
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: William St/Burnham St

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	52.7	85.2	80.7	48.4	57.2	86.2	98.3	80.2	63.5	65.7	54.3	53.8
Average Queue (m)	29.2	48.7	47.9	5.6	27.1	56.2	65.4	48.2	36.4	38.3	28.5	25.9
95th Queue (m)	47.8	70.0	72.3	27.7	49.5	81.6	90.6	66.5	63.8	61.8	51.3	44.6
Link Distance (m)	108.7	108.7	108.7	108.7	154.2	154.2	154.2	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	61.1	68.8
Average Queue (m)	34.7	25.0
95th Queue (m)	57.7	50.3
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Elgin St & Frei St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (m)	72.6	81.1	60.1	107.9	14.2
Average Queue (m)	35.7	42.1	26.8	60.4	5.5
95th Queue (m)	68.6	78.0	52.5	93.0	13.9
Link Distance (m)	154.2	154.2	189.4	189.4	82.6
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	131.3	139.7	66.0	85.4	32.0	29.7	28.8	29.8
Average Queue (m)	55.1	61.5	35.3	49.9	11.6	12.9	8.6	9.0
95th Queue (m)	98.1	106.9	59.6	75.5	23.6	25.4	18.7	21.7
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	115.3	60.2	98.7	21.9	72.7	122.9	68.4	66.5	58.8	65.6	104.0	90.7
Average Queue (m)	46.9	27.4	43.7	8.7	27.4	58.9	40.2	47.3	33.6	31.9	61.7	56.4
95th Queue (m)	86.3	49.8	80.6	19.7	54.7	101.0	63.0	65.1	56.9	58.0	90.9	85.3
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)											1	
Queuing Penalty (veh)											0	
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: William St/Burnham St & Elgin St.W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	66.4	73.4	67.3	29.0	58.8	81.1	109.7	64.6	50.1	66.1	60.5	58.4
Average Queue (m)	35.2	44.7	39.2	2.4	25.0	49.0	58.8	37.7	21.4	39.2	30.2	35.7
95th Queue (m)	53.3	67.9	60.3	14.6	47.4	75.9	90.2	55.4	45.2	58.4	55.4	54.3
Link Distance (m)	108.7	108.7	108.7	108.7	154.2	154.2	154.2	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St.W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	71.4	78.4
Average Queue (m)	45.5	37.7
95th Queue (m)	62.9	65.1
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Frei St & Elgin St.W/Elgin St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	TR	T	TR	LTR
Maximum Queue (m)	87.1	92.3	82.2	99.6	26.2
Average Queue (m)	46.5	51.9	20.4	55.3	7.3
95th Queue (m)	70.7	80.2	43.8	88.1	17.6
Link Distance (m)	154.2	154.2	189.4	189.4	82.6
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St/Elgin St.W

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	97.7	83.8	62.6	78.6	26.2	33.2	28.4	22.0
Average Queue (m)	43.6	53.8	33.6	46.3	12.1	9.7	10.9	7.9
95th Queue (m)	81.7	84.4	53.7	69.5	23.0	21.7	23.7	17.1
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St.W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	67.2	52.1	80.9	33.7	91.6	136.0	86.7	103.6	85.6	72.6	97.7	104.0
Average Queue (m)	36.0	31.3	45.3	13.1	43.4	72.2	43.0	60.3	47.6	34.0	62.4	48.9
95th Queue (m)	62.9	50.2	68.1	24.8	76.1	114.8	73.8	86.0	74.2	59.4	84.5	82.5
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)						1					0	0
Queuing Penalty (veh)						0					0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: William St/Burnham St & Elgin St W

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (m)	47.4	56.4	54.8	16.1	66.7	61.0	79.3	51.3	41.3	55.2	46.9	42.1
Average Queue (m)	16.6	18.0	23.7	1.1	23.7	30.9	43.6	24.4	8.2	30.1	19.3	19.2
95th Queue (m)	34.4	37.5	45.5	7.6	46.1	51.9	68.9	40.7	24.2	50.5	39.0	32.7
Link Distance (m)	108.7	108.7	108.7	108.7	154.2	154.2	154.2	185.8	185.8	185.8	185.8	148.7
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: William St/Burnham St & Elgin St W

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	60.4	59.6
Average Queue (m)	39.5	29.8
95th Queue (m)	60.0	51.9
Link Distance (m)	148.7	148.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Elgin St W & Frei St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (m)	39.4	45.2	47.0	86.1	21.8
Average Queue (m)	14.9	20.1	15.4	38.3	7.0
95th Queue (m)	30.8	37.9	36.2	70.4	16.7
Link Distance (m)	154.2	154.2	189.4	189.4	82.6
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Ontario St & Elgin St W

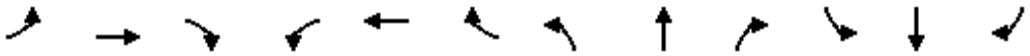
Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	L	TR	L	TR
Maximum Queue (m)	63.6	85.8	46.0	66.9	26.7	27.3	22.2	21.5
Average Queue (m)	20.2	34.8	26.3	37.8	12.1	7.7	8.1	7.1
95th Queue (m)	43.0	65.4	43.9	57.2	22.7	17.6	20.3	16.4
Link Distance (m)	189.4	189.4	188.4	188.4	163.8	163.8	97.0	97.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Divsion St/Division St & Elgin St W

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	46.3	69.1	100.9	28.5	63.2	111.7	47.8	59.4	50.0	59.2	104.0	97.8
Average Queue (m)	21.0	25.6	39.5	13.1	36.3	53.7	20.0	35.7	22.3	38.7	65.5	56.7
95th Queue (m)	40.4	47.1	70.4	22.9	60.2	89.5	40.2	55.9	46.7	58.3	96.6	84.0
Link Distance (m)	188.4	188.4	188.4	131.4	131.4	131.4	161.5	161.5	161.5	99.4	99.4	99.4
Upstream Blk Time (%)											1	0
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Network Summary

Network wide Queuing Penalty: 0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	625	362	149	669	175	388	364	135	189	303	208
Future Volume (vph)	199	625	362	149	669	175	388	364	135	189	303	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3465		3471	3419		1789	3346	
Flt Permitted	0.10	1.00	1.00	0.22	1.00		0.95	1.00		0.28	1.00	
Satd. Flow (perm)	196	3579	1601	423	3465		3471	3419		524	3346	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	262	718	436	207	869	233	511	439	185	278	337	257
RTOR Reduction (vph)	0	0	302	0	18	0	0	33	0	0	101	0
Lane Group Flow (vph)	262	718	134	207	1084	0	511	591	0	278	493	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	54.5	38.5	38.5	49.5	36.0		23.5	34.5		49.2	30.1	
Effective Green, g (s)	54.5	38.5	38.5	49.5	36.0		23.5	34.5		49.2	30.1	
Actuated g/C Ratio	0.43	0.31	0.31	0.39	0.29		0.19	0.27		0.39	0.24	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	287	1097	490	313	993		649	939		397	801	
v/s Ratio Prot	c0.12	0.20		0.07	c0.31		c0.15	0.17		0.11	0.15	
v/s Ratio Perm	0.28		0.08	0.19						c0.17		
v/c Ratio	0.91	0.65	0.27	0.66	1.09		0.79	0.63		0.70	0.62	
Uniform Delay, d1	35.5	37.8	33.0	27.3	44.8		48.7	39.9		28.1	42.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.3	1.4	0.3	5.2	57.0		6.3	3.2		5.5	3.5	
Delay (s)	66.8	39.2	33.3	32.4	101.8		55.0	43.1		33.6	46.1	
Level of Service	E	D	C	C	F		D	D		C	D	
Approach Delay (s)		42.5			90.8			48.5			42.1	
Approach LOS		D			F			D			D	

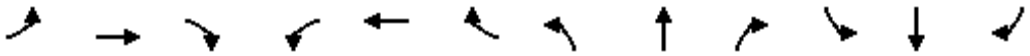
Intersection Summary			
HCM 2000 Control Delay	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	125.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	892	0	0	995	17	4	0	0	15	0	45
Future Volume (vph)	25	892	0	0	995	17	4	0	0	15	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			1.00			0.91	
Flt Protected		1.00			1.00			0.95			0.99	
Satd. Flow (prot)		3571			3568			1789			1680	
Flt Permitted		0.79			1.00			0.70			0.93	
Satd. Flow (perm)		2828			3568			1324			1582	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	45	1062	0	0	1171	23	4	0	0	25	0	58
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	40	0
Lane Group Flow (vph)	0	1107	0	0	1191	0	0	4	0	0	43	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		24.0			24.0			18.0			18.0	
Effective Green, g (s)		24.0			24.0			18.0			18.0	
Actuated g/C Ratio		0.44			0.44			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1256			1585			441			527	
v/s Ratio Prot					0.33							
v/s Ratio Perm		c0.39						0.00			c0.03	
v/c Ratio		0.88			0.75			0.01			0.08	
Uniform Delay, d1		13.7			12.5			12.0			12.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		7.5			2.1			0.0			0.1	
Delay (s)		21.2			14.6			12.1			12.4	
Level of Service		C			B			B			B	
Approach Delay (s)		21.2			14.6			12.1			12.4	
Approach LOS		C			B			B			B	

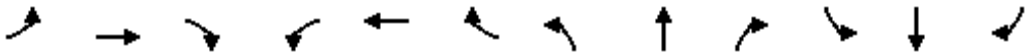
Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	736	116	28	840	83	119	37	40	53	33	52
Future Volume (vph)	51	736	116	28	840	83	119	37	40	53	33	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.93		1.00	0.90	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3472			3511		1772	1662		1789	1699	
Flt Permitted		0.73			0.79		0.68	1.00		0.70	1.00	
Satd. Flow (perm)		2548			2793		1260	1662		1310	1699	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	55	800	126	61	1000	120	165	51	44	72	44	83
RTOR Reduction (vph)	0	15	0	0	10	0	0	21	0	0	46	0
Lane Group Flow (vph)	0	966	0	0	1171	0	165	74	0	72	81	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.3			34.3		27.1	27.1		27.1	27.1	
Effective Green, g (s)		34.3			34.3		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.47			0.47		0.37	0.37		0.37	0.37	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1190			1305		465	613		483	627	
v/s Ratio Prot								0.04			0.05	
v/s Ratio Perm		0.38			c0.42		c0.13			0.05		
v/c Ratio		0.81			0.90		0.35	0.12		0.15	0.13	
Uniform Delay, d1		16.8			17.9		16.8	15.3		15.5	15.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.3			8.4		2.1	0.4		0.7	0.4	
Delay (s)		21.1			26.4		18.9	15.7		16.1	15.8	
Level of Service		C			C		B	B		B	B	
Approach Delay (s)		21.1			26.4			17.7			15.9	
Approach LOS		C			C			B			B	

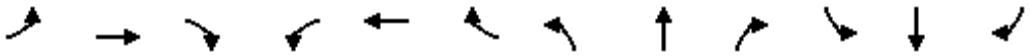
Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	300	248	67	307	204	285	495	69	206	481	326
Future Volume (vph)	297	300	248	67	307	204	285	495	69	206	481	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.94		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3323		1789	3378		1789	3508		1789	3357	
Flt Permitted	0.15	1.00		0.40	1.00		0.10	1.00		0.34	1.00	
Satd. Flow (perm)	289	3323		756	3378		192	3508		647	3357	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	381	330	299	85	389	232	348	532	81	240	540	379
RTOR Reduction (vph)	0	118	0	0	73	0	0	9	0	0	94	0
Lane Group Flow (vph)	381	511	0	85	548	0	348	604	0	240	825	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.3	38.3		34.3	26.3		59.2	40.5		49.9	35.2	
Effective Green, g (s)	50.3	38.3		34.3	26.3		59.2	40.5		49.9	35.2	
Actuated g/C Ratio	0.41	0.32		0.28	0.22		0.49	0.33		0.41	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	366	1047		281	731		356	1169		403	972	
v/s Ratio Prot	c0.17	0.15		0.02	0.16		c0.16	0.17		0.07	0.25	
v/s Ratio Perm	c0.26			0.07			c0.31			0.17		
v/c Ratio	1.04	0.49		0.30	0.75		0.98	0.52		0.60	0.85	
Uniform Delay, d1	33.6	33.7		32.9	44.5		36.8	32.6		24.6	40.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	58.1	0.4		0.6	4.2		41.2	1.6		2.4	9.1	
Delay (s)	91.7	34.0		33.5	48.8		78.0	34.3		27.0	49.8	
Level of Service	F	C		C	D		E	C		C	D	
Approach Delay (s)		55.8			46.9			50.1			45.0	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	121.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	650	307	157	501	195	302	354	126	303	409	164
Future Volume (vph)	228	650	307	157	501	195	302	354	126	303	409	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3425		3471	3424		1789	3413	
Flt Permitted	0.11	1.00	1.00	0.18	1.00		0.95	1.00		0.19	1.00	
Satd. Flow (perm)	203	3579	1601	335	3425		3471	3424		349	3413	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	300	747	370	218	651	260	397	427	173	446	454	202
RTOR Reduction (vph)	0	0	264	0	32	0	0	32	0	0	35	0
Lane Group Flow (vph)	300	747	106	218	879	0	397	568	0	446	621	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	53.1	37.1	37.1	49.9	35.5		20.2	30.1		62.5	38.3	
Effective Green, g (s)	53.1	37.1	37.1	49.9	35.5		20.2	30.1		62.5	38.3	
Actuated g/C Ratio	0.41	0.29	0.29	0.38	0.27		0.16	0.23		0.48	0.29	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	278	1021	456	289	935		539	792		482	1005	
v/s Ratio Prot	c0.13	0.21		0.08	0.26		0.11	0.17		c0.20	0.18	
v/s Ratio Perm	c0.31		0.07	0.21						c0.24		
v/c Ratio	1.08	0.73	0.23	0.75	0.94		0.74	0.72		0.93	0.62	
Uniform Delay, d1	38.5	42.0	35.5	30.0	46.2		52.4	46.0		31.5	39.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	76.6	2.7	0.3	10.6	16.8		5.2	5.5		23.7	2.9	
Delay (s)	115.2	44.7	35.8	40.6	63.0		57.6	51.5		55.2	42.4	
Level of Service	F	D	D	D	E		E	D		E	D	
Approach Delay (s)		57.3			58.7			53.9			47.6	
Approach LOS		E			E			D			D	

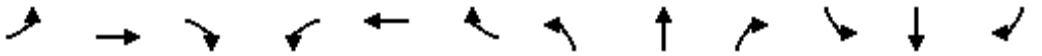
Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	979	4	0	833	14	4	0	0	12	0	33
Future Volume (vph)	57	979	4	0	833	14	4	0	0	12	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			1.00			0.91	
Flt Protected		1.00			1.00			0.95			0.98	
Satd. Flow (prot)		3563			3568			1789			1683	
Flt Permitted		0.69			1.00			0.72			0.93	
Satd. Flow (perm)		2472			3568			1348			1587	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	102	1165	4	0	980	19	4	0	0	20	0	43
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	0	0	40	0
Lane Group Flow (vph)	0	1270	0	0	997	0	0	4	0	0	23	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		25.0			25.0			18.0			18.0	
Effective Green, g (s)		25.0			25.0			18.0			18.0	
Actuated g/C Ratio		0.45			0.45			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1123			1621			441			519	
v/s Ratio Prot					0.28							
v/s Ratio Perm		c0.51						0.00			c0.01	
v/c Ratio		1.13			0.61			0.01			0.04	
Uniform Delay, d1		15.0			11.4			12.5			12.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		70.6			0.7			0.0			0.0	
Delay (s)		85.6			12.1			12.5			12.7	
Level of Service		F			B			B			B	
Approach Delay (s)		85.6			12.1			12.5			12.7	
Approach LOS		F			B			B			B	

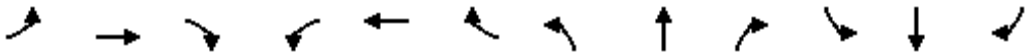
Intersection Summary			
HCM 2000 Control Delay	52.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	723	101	27	746	95	95	68	13	59	23	56
Future Volume (vph)	84	723	101	27	746	95	95	68	13	59	23	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.98		1.00	0.89	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3475			3497		1772	1818		1789	1674	
Flt Permitted		0.64			0.79		0.68	1.00		0.69	1.00	
Satd. Flow (perm)		2231			2761		1268	1818		1296	1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	91	786	110	59	888	138	132	93	14	80	31	89
RTOR Reduction (vph)	0	12	0	0	13	0	0	4	0	0	56	0
Lane Group Flow (vph)	0	975	0	0	1072	0	132	103	0	80	64	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.1			33.1		27.2	27.2		27.2	27.2	
Effective Green, g (s)		33.1			33.1		27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.46			0.46		0.38	0.38		0.38	0.38	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1021			1264		477	683		487	629	
v/s Ratio Prot								0.06			0.04	
v/s Ratio Perm		c0.44			0.39		c0.10			0.06		
v/c Ratio		0.95			0.85		0.28	0.15		0.16	0.10	
Uniform Delay, d1		18.9			17.4		15.7	14.9		15.0	14.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		18.1			5.5		1.4	0.5		0.7	0.3	
Delay (s)		36.9			22.8		17.1	15.4		15.7	15.0	
Level of Service		D			C		B	B		B	B	
Approach Delay (s)		36.9			22.8			16.4			15.3	
Approach LOS		D			C			B			B	

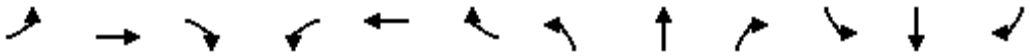
Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	337	243	74	353	305	307	621	100	260	482	214
Future Volume (vph)	253	337	243	74	353	305	307	621	100	260	482	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.93		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3341		1789	3344		1789	3498		1789	3410	
Flt Permitted	0.12	1.00		0.34	1.00		0.13	1.00		0.16	1.00	
Satd. Flow (perm)	217	3341		637	3344		252	3498		299	3410	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	324	370	293	94	447	347	374	668	118	302	542	249
RTOR Reduction (vph)	0	102	0	0	112	0	0	11	0	0	41	0
Lane Group Flow (vph)	324	561	0	94	682	0	374	775	0	302	750	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	54.7	40.5		40.9	30.7		56.4	36.4		53.8	35.1	
Effective Green, g (s)	54.7	40.5		40.9	30.7		56.4	36.4		53.8	35.1	
Actuated g/C Ratio	0.43	0.32		0.33	0.24		0.45	0.29		0.43	0.28	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	344	1075		300	816		357	1012		349	951	
v/s Ratio Prot	c0.15	0.17		0.03	0.20		c0.17	0.22		0.13	0.22	
v/s Ratio Perm	c0.26			0.08			c0.30			0.24		
v/c Ratio	0.94	0.52		0.31	0.84		1.05	0.77		0.87	0.79	
Uniform Delay, d1	36.6	34.8		30.3	45.2		35.3	40.8		27.8	41.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.6	0.5		0.6	7.4		60.6	5.5		19.5	6.6	
Delay (s)	70.2	35.2		30.9	52.6		95.9	46.3		47.2	48.5	
Level of Service	E	D		C	D		F	D		D	D	
Approach Delay (s)		46.7			50.3			62.3			48.2	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	52.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	125.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

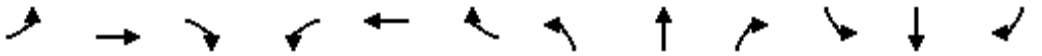
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	279	176	159	384	207	168	349	128	184	431	168
Future Volume (vph)	100	279	176	159	384	207	168	349	128	184	431	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3387		3471	3421		1789	3417	
Flt Permitted	0.16	1.00	1.00	0.48	1.00		0.95	1.00		0.26	1.00	
Satd. Flow (perm)	295	3579	1601	896	3387		3471	3421		486	3417	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	132	321	212	221	499	276	221	420	175	271	479	207
RTOR Reduction (vph)	0	0	159	0	56	0	0	31	0	0	32	0
Lane Group Flow (vph)	132	321	53	221	719	0	221	564	0	271	654	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	37.9	26.5	26.5	41.7	28.4		12.4	30.5		49.9	34.0	
Effective Green, g (s)	37.9	26.5	26.5	41.7	28.4		12.4	30.5		49.9	34.0	
Actuated g/C Ratio	0.36	0.25	0.25	0.39	0.27		0.12	0.29		0.47	0.32	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	265	893	399	463	905		405	982		423	1093	
v/s Ratio Prot	0.05	0.09		c0.06	c0.21		0.06	0.16		c0.10	0.19	
v/s Ratio Perm	0.12		0.03	0.13						c0.20		
v/c Ratio	0.50	0.36	0.13	0.48	0.79		0.55	0.57		0.64	0.60	
Uniform Delay, d1	25.0	32.9	30.9	22.5	36.2		44.2	32.3		18.9	30.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.2	0.2	0.8	4.9		1.5	2.4		3.3	2.4	
Delay (s)	26.5	33.1	31.1	23.2	41.0		45.7	34.7		22.2	32.8	
Level of Service	C	C	C	C	D		D	C		C	C	
Approach Delay (s)		31.1			37.1			37.7			29.8	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	106.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



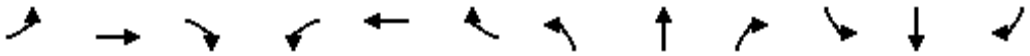
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	554	0	0	699	13	0	0	0	33	0	42
Future Volume (vph)	13	554	0	0	699	13	0	0	0	33	0	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.93	
Flt Protected		1.00			1.00						0.98	
Satd. Flow (prot)		3573			3568						1713	
Flt Permitted		0.91			1.00						0.87	
Satd. Flow (perm)		3244			3568						1522	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	23	660	0	0	822	17	0	0	0	55	0	55
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	38	0
Lane Group Flow (vph)	0	683	0	0	836	0	0	0	0	0	72	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		18.9			18.9						18.1	
Effective Green, g (s)		18.9			18.9						18.1	
Actuated g/C Ratio		0.39			0.39						0.37	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1251			1376						562	
v/s Ratio Prot					c0.23							
v/s Ratio Perm		0.21									c0.05	
v/c Ratio		0.55			0.61						0.13	
Uniform Delay, d1		11.7			12.1						10.2	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.5			0.8						0.1	
Delay (s)		12.2			12.8						10.3	
Level of Service		B			B						B	
Approach Delay (s)		12.2			12.8			0.0			10.3	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	466	90	59	615	39	96	40	37	79	35	41
Future Volume (vph)	15	466	90	59	615	39	96	40	37	79	35	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.94		1.00	0.91	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3462			3511		1772	1678		1789	1719	
Flt Permitted		0.92			0.72		0.68	1.00		0.69	1.00	
Satd. Flow (perm)		3191			2546		1277	1678		1309	1719	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	16	507	98	128	732	57	133	55	41	107	47	65
RTOR Reduction (vph)	0	21	0	0	6	0	0	18	0	0	33	0
Lane Group Flow (vph)	0	600	0	0	911	0	133	78	0	107	79	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		30.0			30.0		27.1	27.1		27.1	27.1	
Effective Green, g (s)		30.0			30.0		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.43			0.43		0.39	0.39		0.39	0.39	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1385			1105		500	658		513	674	
v/s Ratio Prot								0.05			0.05	
v/s Ratio Perm		0.19			c0.36		c0.10			0.08		
v/c Ratio		0.43			0.82		0.27	0.12		0.21	0.12	
Uniform Delay, d1		13.6			17.2		14.3	13.4		13.9	13.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			5.1		1.3	0.4		0.9	0.4	
Delay (s)		13.8			22.4		15.6	13.8		14.8	13.7	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		13.8			22.4			14.8			14.3	
Approach LOS		B			C			B			B	

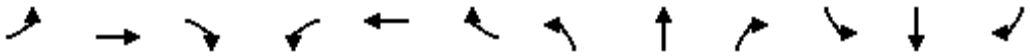
Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	281	180	81	308	253	140	348	72	331	599	265
Future Volume (vph)	171	281	180	81	308	253	140	348	72	331	599	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.94		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3357		1789	3351		1789	3479		1789	3410	
Flt Permitted	0.13	1.00		0.39	1.00		0.14	1.00		0.36	1.00	
Satd. Flow (perm)	254	3357		737	3351		257	3479		676	3410	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	219	309	217	103	390	288	171	374	85	385	673	308
RTOR Reduction (vph)	0	98	0	0	109	0	0	15	0	0	36	0
Lane Group Flow (vph)	219	428	0	103	569	0	171	444	0	385	945	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	45.8	31.3		36.2	25.7		48.4	35.4		57.6	40.6	
Effective Green, g (s)	45.8	31.3		36.2	25.7		48.4	35.4		57.6	40.6	
Actuated g/C Ratio	0.40	0.27		0.31	0.22		0.42	0.31		0.50	0.35	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	314	910		326	746		280	1067		512	1199	
v/s Ratio Prot	c0.10	0.13		0.03	0.17		0.07	0.13		c0.12	c0.28	
v/s Ratio Perm	c0.18			0.07			0.19			0.26		
v/c Ratio	0.70	0.47		0.32	0.76		0.61	0.42		0.75	0.79	
Uniform Delay, d1	26.4	35.1		28.9	42.0		23.7	31.8		19.3	33.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	0.4		0.6	4.6		3.9	1.2		6.2	5.3	
Delay (s)	33.0	35.5		29.5	46.6		27.7	33.0		25.4	38.8	
Level of Service	C	D		C	D		C	C		C	D	
Approach Delay (s)		34.8			44.4			31.5			35.0	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	115.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

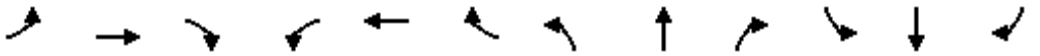
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	566	327	135	606	156	351	329	122	171	274	188
Future Volume (vph)	180	566	327	135	606	156	351	329	122	171	274	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3466		3471	3419		1789	3346	
Flt Permitted	0.10	1.00	1.00	0.28	1.00		0.95	1.00		0.35	1.00	
Satd. Flow (perm)	194	3579	1601	529	3466		3471	3419		651	3346	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	237	651	394	188	787	208	462	396	167	251	304	232
RTOR Reduction (vph)	0	0	270	0	17	0	0	32	0	0	101	0
Lane Group Flow (vph)	237	651	124	188	978	0	462	531	0	251	435	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	54.5	38.9	38.9	48.9	36.1		21.4	35.0		46.6	30.1	
Effective Green, g (s)	54.5	38.9	38.9	48.9	36.1		21.4	35.0		46.6	30.1	
Actuated g/C Ratio	0.44	0.32	0.32	0.40	0.29		0.17	0.28		0.38	0.24	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	287	1130	505	340	1015		602	971		398	817	
v/s Ratio Prot	c0.10	0.18		0.06	c0.28		c0.13	0.16		0.08	0.13	
v/s Ratio Perm	0.26		0.08	0.16						c0.15		
v/c Ratio	0.83	0.58	0.25	0.55	0.96		0.77	0.55		0.63	0.53	
Uniform Delay, d1	32.0	35.3	31.3	25.7	42.9		48.5	37.4		27.9	40.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.3	0.7	0.3	1.9	19.9		5.8	2.2		3.2	2.5	
Delay (s)	49.3	36.0	31.5	27.6	62.8		54.4	39.6		31.2	42.9	
Level of Service	D	D	C	C	E		D	D		C	D	
Approach Delay (s)		37.1			57.2			46.2			39.2	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

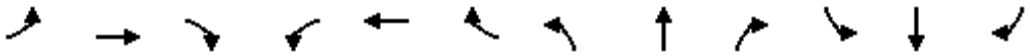
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	809	0	0	902	15	0	0	0	13	0	40
Future Volume (vph)	22	809	0	0	902	15	0	0	0	13	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.91	
Flt Protected		1.00			1.00						0.99	
Satd. Flow (prot)		3572			3569						1680	
Flt Permitted		0.84			1.00						0.93	
Satd. Flow (perm)		3014			3569						1589	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	39	963	0	0	1061	20	0	0	0	22	0	52
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	39	0
Lane Group Flow (vph)	0	1002	0	0	1079	0	0	0	0	0	35	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		22.4			22.4						18.1	
Effective Green, g (s)		22.4			22.4						18.1	
Actuated g/C Ratio		0.43			0.43						0.34	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1285			1522						547	
v/s Ratio Prot					0.30							
v/s Ratio Perm		c0.33									c0.02	
v/c Ratio		0.78			0.71						0.06	
Uniform Delay, d1		12.9			12.4						11.5	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		3.1			1.5						0.0	
Delay (s)		16.0			13.9						11.6	
Level of Service		B			B						B	
Approach Delay (s)		16.0			13.9			0.0			11.6	
Approach LOS		B			B			A			B	

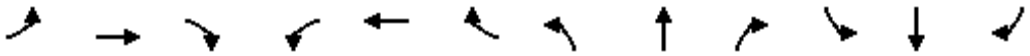
Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	667	105	25	761	75	107	33	36	48	29	47
Future Volume (vph)	46	667	105	25	761	75	107	33	36	48	29	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.93		1.00	0.90	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3472			3511		1772	1659		1789	1698	
Flt Permitted		0.77			0.84		0.68	1.00		0.70	1.00	
Satd. Flow (perm)		2685			2942		1275	1659		1322	1698	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	50	725	114	54	906	109	149	45	40	65	39	75
RTOR Reduction (vph)	0	16	0	0	10	0	0	21	0	0	45	0
Lane Group Flow (vph)	0	873	0	0	1059	0	149	64	0	65	69	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		31.0			31.0		27.1	27.1		27.1	27.1	
Effective Green, g (s)		31.0			31.0		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.44			0.44		0.39	0.39		0.39	0.39	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1187			1301		492	641		511	656	
v/s Ratio Prot								0.04			0.04	
v/s Ratio Perm		0.33			c0.36		c0.12			0.05		
v/c Ratio		0.74			0.81		0.30	0.10		0.13	0.10	
Uniform Delay, d1		16.2			17.0		14.9	13.7		13.9	13.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4			4.0		1.6	0.3		0.5	0.3	
Delay (s)		18.6			21.1		16.5	14.0		14.4	14.1	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		18.6			21.1			15.6			14.2	
Approach LOS		B			C			B			B	

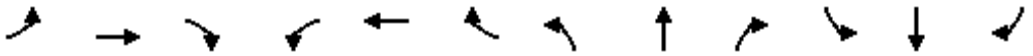
Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	269	272	224	60	278	184	258	448	62	186	435	295
Future Volume (vph)	269	272	224	60	278	184	258	448	62	186	435	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.94		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3324		1789	3379		1789	3508		1789	3357	
Flt Permitted	0.18	1.00		0.44	1.00		0.13	1.00		0.40	1.00	
Satd. Flow (perm)	333	3324		825	3379		237	3508		760	3357	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	345	299	270	76	352	209	315	482	73	216	489	343
RTOR Reduction (vph)	0	121	0	0	74	0	0	8	0	0	94	0
Lane Group Flow (vph)	345	448	0	76	487	0	315	547	0	216	738	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	47.3	35.6		31.2	23.5		58.4	40.8		48.7	35.1	
Effective Green, g (s)	47.3	35.6		31.2	23.5		58.4	40.8		48.7	35.1	
Actuated g/C Ratio	0.40	0.30		0.27	0.20		0.50	0.35		0.41	0.30	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	378	1005		281	674		372	1216		433	1001	
v/s Ratio Prot	c0.15	0.13		0.02	0.14		c0.14	0.16		0.06	0.22	
v/s Ratio Perm	c0.21			0.05			c0.28			0.15		
v/c Ratio	0.91	0.45		0.27	0.72		0.85	0.45		0.50	0.74	
Uniform Delay, d1	28.8	33.1		33.2	44.1		28.8	29.8		23.1	37.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	25.7	0.3		0.5	3.8		16.1	1.2		0.9	4.8	
Delay (s)	54.5	33.4		33.7	47.9		44.9	31.0		24.0	42.0	
Level of Service	D	C		C	D		D	C		C	D	
Approach Delay (s)		41.4			46.2			36.0			38.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	117.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

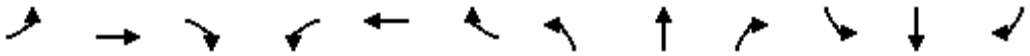
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	589	278	142	454	169	273	315	114	256	355	148
Future Volume (vph)	206	589	278	142	454	169	273	315	114	256	355	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3430		3471	3422		1789	3408	
Flt Permitted	0.11	1.00	1.00	0.24	1.00		0.95	1.00		0.25	1.00	
Satd. Flow (perm)	212	3579	1601	461	3430		3471	3422		478	3408	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	271	677	335	197	590	225	359	380	156	376	394	183
RTOR Reduction (vph)	0	0	237	0	30	0	0	32	0	0	37	0
Lane Group Flow (vph)	271	677	98	197	785	0	359	504	0	376	540	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	51.6	35.5	35.5	45.8	32.6		18.0	30.2		57.0	35.0	
Effective Green, g (s)	51.6	35.5	35.5	45.8	32.6		18.0	30.2		57.0	35.0	
Actuated g/C Ratio	0.42	0.29	0.29	0.38	0.27		0.15	0.25		0.47	0.29	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	298	1043	467	317	918		513	849		469	980	
v/s Ratio Prot	c0.12	0.19		0.07	0.23		0.10	0.15		c0.15	0.16	
v/s Ratio Perm	c0.26		0.06	0.17						c0.22		
v/c Ratio	0.91	0.65	0.21	0.62	0.86		0.70	0.59		0.80	0.55	
Uniform Delay, d1	33.0	37.7	32.5	27.5	42.3		49.3	40.3		23.4	36.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.5	1.4	0.2	3.8	7.8		4.2	3.0		9.5	2.2	
Delay (s)	62.5	39.1	32.7	31.2	50.2		53.4	43.4		33.0	38.9	
Level of Service	E	D	C	C	D		D	D		C	D	
Approach Delay (s)		42.4			46.5			47.4			36.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	121.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

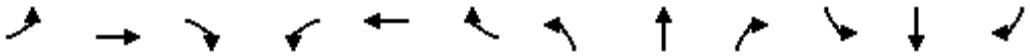
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	887	3	0	755	12	3	0	0	10	0	29
Future Volume (vph)	51	887	3	0	755	12	3	0	0	10	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			1.00			0.91	
Flt Protected		1.00			1.00			0.95			0.98	
Satd. Flow (prot)		3563			3569			1789			1682	
Flt Permitted		0.75			1.00			0.72			0.93	
Satd. Flow (perm)		2676			3569			1358			1593	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	91	1056	3	0	888	16	3	0	0	17	0	38
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	1149	0	0	902	0	0	3	0	0	18	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		25.0			25.0			18.0			18.0	
Effective Green, g (s)		25.0			25.0			18.0			18.0	
Actuated g/C Ratio		0.45			0.45			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1216			1622			444			521	
v/s Ratio Prot					0.25							
v/s Ratio Perm		c0.43						0.00			c0.01	
v/c Ratio		0.95			0.56			0.01			0.03	
Uniform Delay, d1		14.3			10.9			12.5			12.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		14.5			0.4			0.0			0.0	
Delay (s)		28.9			11.4			12.5			12.6	
Level of Service		C			B			B			B	
Approach Delay (s)		28.9			11.4			12.5			12.6	
Approach LOS		C			B			B			B	

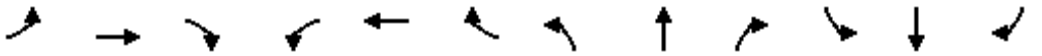
Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	655	91	24	676	86	86	61	11	53	20	50
Future Volume (vph)	76	655	91	24	676	86	86	61	11	53	20	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.98		1.00	0.89	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3476			3497		1772	1821		1789	1673	
Flt Permitted		0.67			0.83		0.69	1.00		0.69	1.00	
Satd. Flow (perm)		2348			2899		1284	1821		1309	1673	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	83	712	99	52	805	125	119	84	12	72	27	79
RTOR Reduction (vph)	0	13	0	0	14	0	0	4	0	0	48	0
Lane Group Flow (vph)	0	881	0	0	968	0	119	92	0	72	58	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		29.1			29.1		27.2	27.2		27.2	27.2	
Effective Green, g (s)		29.1			29.1		27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.43			0.43		0.40	0.40		0.40	0.40	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1000			1235		511	725		521	666	
v/s Ratio Prot								0.05			0.03	
v/s Ratio Perm		c0.38			0.33		c0.09			0.06		
v/c Ratio		0.88			0.78		0.23	0.13		0.14	0.09	
Uniform Delay, d1		18.0			16.9		13.6	13.0		13.1	12.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.2			3.3		1.1	0.4		0.6	0.3	
Delay (s)		27.2			20.2		14.7	13.4		13.6	13.1	
Level of Service		C			C		B	B		B	B	
Approach Delay (s)		27.2			20.2			14.1			13.3	
Approach LOS		C			C			B			B	

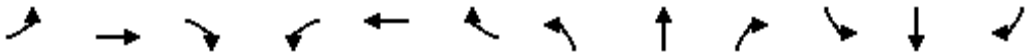
Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	305	220	67	320	276	278	562	90	235	436	194
Future Volume (vph)	229	305	220	67	320	276	278	562	90	235	436	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.93		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3341		1789	3344		1789	3498		1789	3409	
Flt Permitted	0.12	1.00		0.42	1.00		0.18	1.00		0.24	1.00	
Satd. Flow (perm)	231	3341		794	3344		336	3498		460	3409	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	294	335	265	85	405	314	339	604	106	273	490	226
RTOR Reduction (vph)	0	101	0	0	113	0	0	10	0	0	41	0
Lane Group Flow (vph)	294	499	0	85	606	0	339	700	0	273	675	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.8	39.9		36.5	28.6		57.9	38.5		51.3	35.2	
Effective Green, g (s)	51.8	39.9		36.5	28.6		57.9	38.5		51.3	35.2	
Actuated g/C Ratio	0.42	0.33		0.30	0.23		0.47	0.31		0.42	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	342	1089		300	781		389	1100		367	980	
v/s Ratio Prot	c0.13	0.15		0.02	0.18		c0.14	0.20		0.10	0.20	
v/s Ratio Perm	c0.23			0.07			c0.27			0.21		
v/c Ratio	0.86	0.46		0.28	0.78		0.87	0.64		0.74	0.69	
Uniform Delay, d1	32.6	32.7		31.6	43.9		24.4	35.9		25.4	38.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.9	0.3		0.5	4.9		18.8	2.8		7.9	4.0	
Delay (s)	51.4	33.0		32.2	48.8		43.2	38.8		33.4	42.7	
Level of Service	D	C		C	D		D	D		C	D	
Approach Delay (s)		39.1			47.0			40.2			40.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	122.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

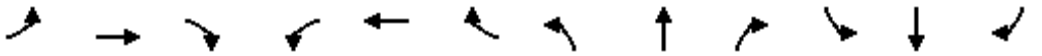
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	252	159	144	348	170	152	302	116	164	388	152
Future Volume (vph)	90	252	159	144	348	170	152	302	116	164	388	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3399		3471	3415		1789	3416	
Flt Permitted	0.21	1.00	1.00	0.50	1.00		0.95	1.00		0.33	1.00	
Satd. Flow (perm)	403	3579	1601	947	3399		3471	3415		624	3416	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	118	290	192	200	452	227	200	364	159	241	431	188
RTOR Reduction (vph)	0	0	148	0	48	0	0	33	0	0	31	0
Lane Group Flow (vph)	118	290	44	200	631	0	200	490	0	241	588	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	33.7	23.2	23.2	37.7	25.2		11.4	30.5		47.1	33.1	
Effective Green, g (s)	33.7	23.2	23.2	37.7	25.2		11.4	30.5		47.1	33.1	
Actuated g/C Ratio	0.34	0.23	0.23	0.38	0.25		0.11	0.30		0.47	0.33	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	280	828	370	461	854		394	1039		456	1128	
v/s Ratio Prot	0.04	0.08		c0.05	c0.19		0.06	0.14		c0.07	0.17	
v/s Ratio Perm	0.10		0.03	0.11						c0.17		
v/c Ratio	0.42	0.35	0.12	0.43	0.74		0.51	0.47		0.53	0.52	
Uniform Delay, d1	24.3	32.2	30.4	22.0	34.5		41.8	28.3		16.8	27.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.3	0.1	0.7	3.4		1.0	1.5		1.1	1.7	
Delay (s)	25.3	32.5	30.6	22.7	37.9		42.8	29.8		18.0	28.9	
Level of Service	C	C	C	C	D		D	C		B	C	
Approach Delay (s)		30.5			34.4			33.4			25.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

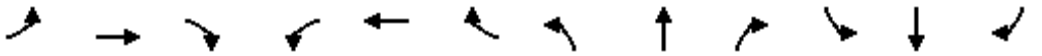
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	503	0	0	633	11	0	0	0	29	0	38
Future Volume (vph)	11	503	0	0	633	11	0	0	0	29	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.93	
Flt Protected		1.00			1.00						0.98	
Satd. Flow (prot)		3573			3568						1713	
Flt Permitted		0.91			1.00						0.87	
Satd. Flow (perm)		3271			3568						1532	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	20	599	0	0	745	15	0	0	0	48	0	49
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	619	0	0	757	0	0	0	0	0	60	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		17.7			17.7						18.1	
Effective Green, g (s)		17.7			17.7						18.1	
Actuated g/C Ratio		0.37			0.37						0.38	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1211			1321						580	
v/s Ratio Prot					c0.21							
v/s Ratio Perm		0.19									c0.04	
v/c Ratio		0.51			0.57						0.10	
Uniform Delay, d1		11.7			12.0						9.6	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.4			0.6						0.1	
Delay (s)		12.1			12.6						9.7	
Level of Service		B			B						A	
Approach Delay (s)		12.1			12.6			0.0			9.7	
Approach LOS		B			B			A			A	

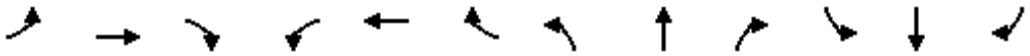
Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	423	81	53	557	35	87	36	33	71	31	37
Future Volume (vph)	13	423	81	53	557	35	87	36	33	71	31	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.94		1.00	0.91	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3462			3512		1772	1680		1789	1717	
Flt Permitted		0.93			0.75		0.69	1.00		0.70	1.00	
Satd. Flow (perm)		3210			2639		1291	1680		1322	1717	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	14	460	88	115	663	51	121	49	36	96	41	59
RTOR Reduction (vph)	0	22	0	0	6	0	0	16	0	0	33	0
Lane Group Flow (vph)	0	540	0	0	823	0	121	69	0	96	67	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.1			26.1		27.2	27.2		27.2	27.2	
Effective Green, g (s)		26.1			26.1		27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.40			0.40		0.42	0.42		0.42	0.42	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1283			1054		537	699		550	715	
v/s Ratio Prot								0.04			0.04	
v/s Ratio Perm		0.17			c0.31		c0.09			0.07		
v/c Ratio		0.42			0.78		0.23	0.10		0.17	0.09	
Uniform Delay, d1		14.1			17.1		12.3	11.6		12.0	11.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			3.8		1.0	0.3		0.7	0.3	
Delay (s)		14.4			20.9		13.2	11.9		12.7	11.8	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		14.4			20.9			12.7			12.2	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	255	163	73	279	229	126	315	65	299	542	240
Future Volume (vph)	155	255	163	73	279	229	126	315	65	299	542	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.94		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3358		1789	3351		1789	3480		1789	3410	
Flt Permitted	0.16	1.00		0.48	1.00		0.19	1.00		0.40	1.00	
Satd. Flow (perm)	304	3358		903	3351		359	3480		754	3410	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	199	280	196	92	353	260	154	339	76	348	609	279
RTOR Reduction (vph)	0	96	0	0	111	0	0	14	0	0	36	0
Lane Group Flow (vph)	199	380	0	92	502	0	154	401	0	348	852	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	42.9	30.9		31.7	23.7		47.6	35.5		56.1	40.0	
Effective Green, g (s)	42.9	30.9		31.7	23.7		47.6	35.5		56.1	40.0	
Actuated g/C Ratio	0.39	0.28		0.29	0.21		0.43	0.32		0.51	0.36	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	320	934		321	715		309	1112		535	1228	
v/s Ratio Prot	c0.08	0.11		0.02	c0.15		0.05	0.12		c0.10	c0.25	
v/s Ratio Perm	0.16			0.06			0.16			0.23		
v/c Ratio	0.62	0.41		0.29	0.70		0.50	0.36		0.65	0.69	
Uniform Delay, d1	25.3	32.6		29.9	40.4		21.1	29.0		17.4	30.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	0.3		0.5	3.1		1.3	0.9		2.8	3.2	
Delay (s)	29.0	32.9		30.4	43.5		22.3	29.9		20.2	33.5	
Level of Service	C	C		C	D		C	C		C	C	
Approach Delay (s)		31.7			41.8			27.9			29.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	618	362	147	660	173	388	364	133	187	303	208
Future Volume (vph)	199	618	362	147	660	173	388	364	133	187	303	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3465		3471	3421		1789	3346	
Flt Permitted	0.10	1.00	1.00	0.23	1.00		0.95	1.00		0.28	1.00	
Satd. Flow (perm)	195	3579	1601	434	3465		3471	3421		535	3346	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	262	710	436	204	857	231	511	439	182	275	337	257
RTOR Reduction (vph)	0	0	302	0	18	0	0	31	0	0	101	0
Lane Group Flow (vph)	262	710	134	204	1070	0	511	590	0	275	493	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	54.6	38.6	38.6	49.6	36.1		23.5	34.7		49.0	30.1	
Effective Green, g (s)	54.6	38.6	38.6	49.6	36.1		23.5	34.7		49.0	30.1	
Actuated g/C Ratio	0.43	0.31	0.31	0.39	0.29		0.19	0.28		0.39	0.24	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	287	1099	491	316	995		648	944		397	801	
v/s Ratio Prot	c0.12	0.20		0.07	c0.31		c0.15	0.17		0.10	0.15	
v/s Ratio Perm	0.28		0.08	0.19						c0.17		
v/c Ratio	0.91	0.65	0.27	0.65	1.08		0.79	0.62		0.69	0.62	
Uniform Delay, d1	35.6	37.6	32.9	27.1	44.8		48.7	39.8		28.2	42.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.3	1.3	0.3	4.5	51.1		6.3	3.1		5.2	3.5	
Delay (s)	66.9	39.0	33.2	31.6	95.9		55.1	42.9		33.4	46.2	
Level of Service	E	D	C	C	F		E	D		C	D	
Approach Delay (s)		42.4			85.8			48.4			42.1	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	55.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	125.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	880	0	0	982	17	4	0	0	15	0	44
Future Volume (vph)	25	880	0	0	982	17	4	0	0	15	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			1.00			0.91	
Flt Protected		1.00			1.00			0.95			0.98	
Satd. Flow (prot)		3571			3568			1789			1681	
Flt Permitted		0.80			1.00			0.70			0.93	
Satd. Flow (perm)		2845			3568			1325			1582	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	45	1048	0	0	1155	23	4	0	0	25	0	57
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	40	0
Lane Group Flow (vph)	0	1093	0	0	1175	0	0	4	0	0	42	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		23.9			23.9			18.0			18.0	
Effective Green, g (s)		23.9			23.9			18.0			18.0	
Actuated g/C Ratio		0.44			0.44			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1261			1582			442			528	
v/s Ratio Prot					0.33							
v/s Ratio Perm		c0.38						0.00			c0.03	
v/c Ratio		0.87			0.74			0.01			0.08	
Uniform Delay, d1		13.6			12.4			12.0			12.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		6.5			1.9			0.0			0.1	
Delay (s)		20.1			14.4			12.0			12.3	
Level of Service		C			B			B			B	
Approach Delay (s)		20.1			14.4			12.0			12.3	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

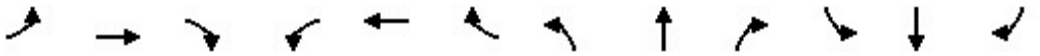
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	727	114	28	829	83	118	37	40	53	33	51
Future Volume (vph)	50	727	114	28	829	83	118	37	40	53	33	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.93		1.00	0.90	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3472			3511		1772	1662		1789	1700	
Flt Permitted		0.74			0.80		0.68	1.00		0.70	1.00	
Satd. Flow (perm)		2572			2804		1262	1662		1310	1700	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	54	790	124	61	987	120	164	51	44	72	44	81
RTOR Reduction (vph)	0	15	0	0	10	0	0	21	0	0	45	0
Lane Group Flow (vph)	0	953	0	0	1158	0	164	74	0	72	80	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.1			34.1		27.1	27.1		27.1	27.1	
Effective Green, g (s)		34.1			34.1		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.47			0.47		0.37	0.37		0.37	0.37	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1198			1306		467	615		484	629	
v/s Ratio Prot								0.04			0.05	
v/s Ratio Perm		0.37			c0.41		c0.13			0.05		
v/c Ratio		0.80			0.89		0.35	0.12		0.15	0.13	
Uniform Delay, d1		16.6			17.8		16.7	15.2		15.4	15.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.7			7.6		2.1	0.4		0.6	0.4	
Delay (s)		20.3			25.4		18.8	15.6		16.0	15.7	
Level of Service		C			C		B	B		B	B	
Approach Delay (s)		20.3			25.4			17.6			15.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	296	246	67	303	204	282	495	69	206	481	322
Future Volume (vph)	294	296	246	67	303	204	282	495	69	206	481	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.94		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3323		1789	3376		1789	3508		1789	3359	
Flt Permitted	0.15	1.00		0.41	1.00		0.10	1.00		0.35	1.00	
Satd. Flow (perm)	290	3323		771	3376		193	3508		651	3359	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	377	325	296	85	384	232	344	532	81	240	540	374
RTOR Reduction (vph)	0	119	0	0	75	0	0	9	0	0	93	0
Lane Group Flow (vph)	377	502	0	85	541	0	344	604	0	240	821	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	49.9	37.9		33.9	25.9		59.1	40.5		49.7	35.1	
Effective Green, g (s)	49.9	37.9		33.9	25.9		59.1	40.5		49.7	35.1	
Actuated g/C Ratio	0.41	0.31		0.28	0.21		0.49	0.33		0.41	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	367	1040		283	722		358	1174		404	974	
v/s Ratio Prot	c0.17	0.15		0.02	0.16		c0.16	0.17		0.07	0.24	
v/s Ratio Perm	c0.25			0.06			c0.31			0.17		
v/c Ratio	1.03	0.48		0.30	0.75		0.96	0.51		0.59	0.84	
Uniform Delay, d1	33.6	33.6		32.9	44.5		36.2	32.4		24.5	40.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	54.1	0.4		0.6	4.3		37.2	1.6		2.3	8.8	
Delay (s)	87.7	34.0		33.5	48.8		73.4	34.0		26.8	49.2	
Level of Service	F	C		C	D		E	C		C	D	
Approach Delay (s)		54.3			46.9			48.1			44.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	121.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	639	307	155	495	193	302	354	125	298	409	164
Future Volume (vph)	228	639	307	155	495	193	302	354	125	298	409	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3425		3471	3425		1789	3413	
Flt Permitted	0.11	1.00	1.00	0.19	1.00		0.95	1.00		0.19	1.00	
Satd. Flow (perm)	204	3579	1601	356	3425		3471	3425		358	3413	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	300	734	370	215	643	257	397	427	171	438	454	202
RTOR Reduction (vph)	0	0	264	0	32	0	0	31	0	0	35	0
Lane Group Flow (vph)	300	734	106	215	868	0	397	567	0	438	621	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	53.0	37.0	37.0	49.4	35.2		20.2	30.2		61.8	37.6	
Effective Green, g (s)	53.0	37.0	37.0	49.4	35.2		20.2	30.2		61.8	37.6	
Actuated g/C Ratio	0.41	0.29	0.29	0.38	0.27		0.16	0.23		0.48	0.29	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	280	1026	459	294	934		543	801		477	994	
v/s Ratio Prot	c0.13	0.21		0.08	0.25		0.11	0.17		c0.20	0.18	
v/s Ratio Perm	c0.31		0.07	0.20						c0.24		
v/c Ratio	1.07	0.72	0.23	0.73	0.93		0.73	0.71		0.92	0.63	
Uniform Delay, d1	38.2	41.3	35.1	29.6	45.7		51.8	45.3		30.4	39.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	74.0	2.4	0.3	9.0	15.0		5.0	5.2		22.5	3.0	
Delay (s)	112.2	43.7	35.4	38.6	60.7		56.8	50.6		52.9	42.6	
Level of Service	F	D	D	D	E		E	D		D	D	
Approach Delay (s)		56.1			56.4			53.1			46.7	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	129.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

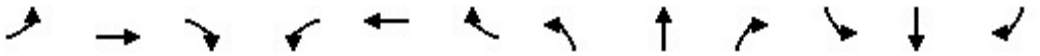
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	971	4	0	821	14	4	0	0	12	0	33
Future Volume (vph)	57	971	4	0	821	14	4	0	0	12	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			1.00			0.91	
Flt Protected		1.00			1.00			0.95			0.98	
Satd. Flow (prot)		3562			3568			1789			1683	
Flt Permitted		0.70			1.00			0.72			0.93	
Satd. Flow (perm)		2489			3568			1348			1587	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	102	1156	4	0	966	19	4	0	0	20	0	43
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	0	0	40	0
Lane Group Flow (vph)	0	1261	0	0	982	0	0	4	0	0	23	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		25.0			25.0			18.0			18.0	
Effective Green, g (s)		25.0			25.0			18.0			18.0	
Actuated g/C Ratio		0.45			0.45			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1131			1621			441			519	
v/s Ratio Prot					0.28							
v/s Ratio Perm		c0.51						0.00			c0.01	
v/c Ratio		1.12			0.61			0.01			0.04	
Uniform Delay, d1		15.0			11.3			12.5			12.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		64.3			0.6			0.0			0.0	
Delay (s)		79.3			11.9			12.5			12.7	
Level of Service		E			B			B			B	
Approach Delay (s)		79.3			11.9			12.5			12.7	
Approach LOS		E			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	48.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	717	100	27	736	95	94	68	13	59	23	55
Future Volume (vph)	83	717	100	27	736	95	94	68	13	59	23	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.98		1.00	0.89	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3475			3496		1772	1818		1789	1675	
Flt Permitted		0.64			0.79		0.68	1.00		0.69	1.00	
Satd. Flow (perm)		2247			2765		1270	1818		1296	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	90	779	109	59	876	138	131	93	14	80	31	87
RTOR Reduction (vph)	0	13	0	0	13	0	0	4	0	0	54	0
Lane Group Flow (vph)	0	965	0	0	1060	0	131	103	0	80	64	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		32.8			32.8		27.2	27.2		27.2	27.2	
Effective Green, g (s)		32.8			32.8		27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.46			0.46		0.38	0.38		0.38	0.38	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1023			1259		479	686		489	632	
v/s Ratio Prot								0.06			0.04	
v/s Ratio Perm		c0.43			0.38		c0.10			0.06		
v/c Ratio		0.94			0.84		0.27	0.15		0.16	0.10	
Uniform Delay, d1		18.7			17.3		15.5	14.8		14.9	14.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.3			5.3		1.4	0.5		0.7	0.3	
Delay (s)		35.0			22.6		17.0	15.2		15.6	14.8	
Level of Service		C			C		B	B		B	B	
Approach Delay (s)		35.0			22.6			16.2			15.1	
Approach LOS		C			C			B			B	

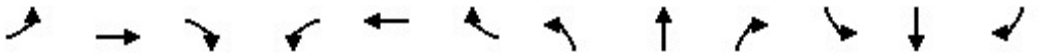
Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	335	241	74	348	305	304	621	100	260	482	212
Future Volume (vph)	251	335	241	74	348	305	304	621	100	260	482	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.93		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3342		1789	3342		1789	3498		1789	3410	
Flt Permitted	0.12	1.00		0.34	1.00		0.14	1.00		0.16	1.00	
Satd. Flow (perm)	220	3342		644	3342		256	3498		304	3410	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	322	368	290	94	441	347	371	668	118	302	542	247
RTOR Reduction (vph)	0	103	0	0	113	0	0	11	0	0	40	0
Lane Group Flow (vph)	322	555	0	94	675	0	371	775	0	302	749	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	54.3	40.1		40.5	30.3		56.5	36.5		53.7	35.1	
Effective Green, g (s)	54.3	40.1		40.5	30.3		56.5	36.5		53.7	35.1	
Actuated g/C Ratio	0.43	0.32		0.32	0.24		0.45	0.29		0.43	0.28	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	345	1068		301	807		359	1018		350	954	
v/s Ratio Prot	c0.15	0.17		0.03	0.20		c0.16	0.22		0.13	0.22	
v/s Ratio Perm	c0.26			0.08			c0.30			0.24		
v/c Ratio	0.93	0.52		0.31	0.84		1.03	0.76		0.86	0.78	
Uniform Delay, d1	36.2	34.8		30.4	45.2		34.9	40.5		27.3	41.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.6	0.4		0.6	7.5		56.4	5.4		19.2	6.5	
Delay (s)	67.8	35.2		31.0	52.7		91.3	45.9		46.5	48.1	
Level of Service	E	D		C	D		F	D		D	D	
Approach Delay (s)		45.9			50.4			60.4			47.7	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	125.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	277	176	156	376	203	168	349	127	183	431	168
Future Volume (vph)	100	277	176	156	376	203	168	349	127	183	431	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3387		3471	3421		1789	3417	
Flt Permitted	0.16	1.00	1.00	0.48	1.00		0.95	1.00		0.26	1.00	
Satd. Flow (perm)	309	3579	1601	904	3387		3471	3421		493	3417	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	132	318	212	217	488	271	221	420	174	269	479	207
RTOR Reduction (vph)	0	0	160	0	57	0	0	31	0	0	32	0
Lane Group Flow (vph)	132	318	52	217	702	0	221	563	0	269	654	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	37.5	26.1	26.1	41.1	27.9		12.3	30.5		49.6	33.9	
Effective Green, g (s)	37.5	26.1	26.1	41.1	27.9		12.3	30.5		49.6	33.9	
Actuated g/C Ratio	0.36	0.25	0.25	0.39	0.26		0.12	0.29		0.47	0.32	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	269	885	396	462	895		404	989		424	1097	
v/s Ratio Prot	0.05	0.09		c0.06	c0.21		0.06	0.16		c0.09	0.19	
v/s Ratio Perm	0.12		0.03	0.12						c0.20		
v/c Ratio	0.49	0.36	0.13	0.47	0.78		0.55	0.57		0.63	0.60	
Uniform Delay, d1	24.9	32.8	30.9	22.5	36.0		44.0	31.9		18.7	30.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.3	0.2	0.8	4.5		1.5	2.4		3.1	2.4	
Delay (s)	26.3	33.0	31.0	23.2	40.5		45.5	34.3		21.8	32.4	
Level of Service	C	C	C	C	D		D	C		C	C	
Approach Delay (s)		31.1			36.7			37.3			29.4	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	105.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

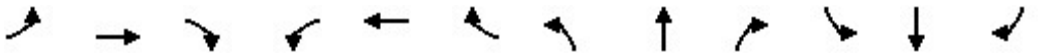
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	540	0	0	693	13	0	0	0	33	0	42
Future Volume (vph)	13	540	0	0	693	13	0	0	0	33	0	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.93	
Flt Protected		1.00			1.00						0.98	
Satd. Flow (prot)		3572			3568						1713	
Flt Permitted		0.91			1.00						0.87	
Satd. Flow (perm)		3242			3568						1522	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	23	643	0	0	815	17	0	0	0	55	0	55
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	38	0
Lane Group Flow (vph)	0	666	0	0	829	0	0	0	0	0	72	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		18.8			18.8						18.1	
Effective Green, g (s)		18.8			18.8						18.1	
Actuated g/C Ratio		0.38			0.38						0.37	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1246			1371						563	
v/s Ratio Prot					c0.23							
v/s Ratio Perm		0.21									c0.05	
v/c Ratio		0.53			0.60						0.13	
Uniform Delay, d1		11.7			12.1						10.2	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.4			0.8						0.1	
Delay (s)		12.1			12.8						10.3	
Level of Service		B			B						B	
Approach Delay (s)		12.1			12.8			0.0			10.3	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	48.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	454	88	59	610	39	95	40	37	79	35	41
Future Volume (vph)	15	454	88	59	610	39	95	40	37	79	35	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.94		1.00	0.91	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3461			3511		1772	1678		1789	1719	
Flt Permitted		0.92			0.73		0.68	1.00		0.69	1.00	
Satd. Flow (perm)		3188			2567		1277	1678		1309	1719	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	16	493	96	128	726	57	132	55	41	107	47	65
RTOR Reduction (vph)	0	21	0	0	6	0	0	18	0	0	33	0
Lane Group Flow (vph)	0	584	0	0	905	0	132	78	0	107	79	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		29.5			29.5		27.1	27.1		27.1	27.1	
Effective Green, g (s)		29.5			29.5		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.43			0.43		0.40	0.40		0.40	0.40	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1370			1103		504	662		517	679	
v/s Ratio Prot								0.05			0.05	
v/s Ratio Perm		0.18			c0.35		c0.10			0.08		
v/c Ratio		0.43			0.82		0.26	0.12		0.21	0.12	
Uniform Delay, d1		13.6			17.2		14.0	13.2		13.7	13.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			5.0		1.3	0.4		0.9	0.4	
Delay (s)		13.9			22.2		15.3	13.5		14.6	13.5	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		13.9			22.2			14.5			14.0	
Approach LOS		B			C			B			B	

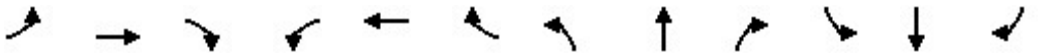
Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	275	177	81	305	253	139	348	72	331	599	263
Future Volume (vph)	168	275	177	81	305	253	139	348	72	331	599	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.94		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3357		1789	3349		1789	3479		1789	3411	
Flt Permitted	0.14	1.00		0.40	1.00		0.14	1.00		0.36	1.00	
Satd. Flow (perm)	255	3357		750	3349		261	3479		677	3411	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	215	302	213	103	386	288	170	374	85	385	673	306
RTOR Reduction (vph)	0	99	0	0	111	0	0	15	0	0	36	0
Lane Group Flow (vph)	215	416	0	103	563	0	170	444	0	385	943	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	45.4	30.9		36.0	25.5		48.4	35.4		57.6	40.6	
Effective Green, g (s)	45.4	30.9		36.0	25.5		48.4	35.4		57.6	40.6	
Actuated g/C Ratio	0.39	0.27		0.31	0.22		0.42	0.31		0.50	0.35	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	312	902		329	742		282	1070		515	1204	
v/s Ratio Prot	c0.10	0.12		0.03	c0.17		0.07	0.13		c0.12	c0.28	
v/s Ratio Perm	0.18			0.07			0.19			0.26		
v/c Ratio	0.69	0.46		0.31	0.76		0.60	0.42		0.75	0.78	
Uniform Delay, d1	26.3	35.1		28.9	41.9		23.5	31.6		19.1	33.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.2	0.4		0.5	4.5		3.6	1.2		5.9	5.1	
Delay (s)	32.5	35.5		29.4	46.4		27.1	32.8		24.9	38.4	
Level of Service	C	D		C	D		C	C		C	D	
Approach Delay (s)		34.6			44.1			31.2			34.6	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	559	327	133	597	156	351	329	120	169	274	188
Future Volume (vph)	180	559	327	133	597	156	351	329	120	169	274	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3465		3471	3421		1789	3346	
Flt Permitted	0.10	1.00	1.00	0.29	1.00		0.95	1.00		0.35	1.00	
Satd. Flow (perm)	193	3579	1601	542	3465		3471	3421		663	3346	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	237	643	394	185	775	208	462	396	164	249	304	232
RTOR Reduction (vph)	0	0	269	0	18	0	0	31	0	0	101	0
Lane Group Flow (vph)	237	643	125	185	965	0	462	529	0	249	435	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	54.6	39.0	39.0	48.8	36.1		21.4	35.2		46.4	30.1	
Effective Green, g (s)	54.6	39.0	39.0	48.8	36.1		21.4	35.2		46.4	30.1	
Actuated g/C Ratio	0.44	0.32	0.32	0.40	0.29		0.17	0.29		0.38	0.24	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	287	1132	506	343	1015		602	977		398	817	
v/s Ratio Prot	c0.10	0.18		0.06	c0.28		c0.13	0.15		0.08	0.13	
v/s Ratio Perm	0.26		0.08	0.16						c0.15		
v/c Ratio	0.83	0.57	0.25	0.54	0.95		0.77	0.54		0.63	0.53	
Uniform Delay, d1	32.0	35.1	31.2	25.7	42.7		48.5	37.2		28.0	40.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.3	0.7	0.3	1.6	17.6		5.8	2.2		3.1	2.5	
Delay (s)	49.3	35.7	31.5	27.3	60.3		54.4	39.3		31.1	42.9	
Level of Service	D	D	C	C	E		D	D		C	D	
Approach Delay (s)		36.9			55.1			46.1			39.2	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	797	0	0	889	15	0	0	0	13	0	39
Future Volume (vph)	22	797	0	0	889	15	0	0	0	13	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.91	
Flt Protected		1.00			1.00						0.99	
Satd. Flow (prot)		3571			3568						1680	
Flt Permitted		0.85			1.00						0.93	
Satd. Flow (perm)		3026			3568						1589	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	39	949	0	0	1046	20	0	0	0	22	0	51
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	39	0
Lane Group Flow (vph)	0	988	0	0	1064	0	0	0	0	0	34	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		22.2			22.2						18.1	
Effective Green, g (s)		22.2			22.2						18.1	
Actuated g/C Ratio		0.42			0.42						0.35	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1284			1514						549	
v/s Ratio Prot					0.30							
v/s Ratio Perm		c0.33									c0.02	
v/c Ratio		0.77			0.70						0.06	
Uniform Delay, d1		12.9			12.3						11.4	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		2.8			1.5						0.0	
Delay (s)		15.7			13.8						11.5	
Level of Service		B			B						B	
Approach Delay (s)		15.7			13.8			0.0			11.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

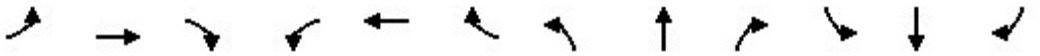
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	658	103	25	750	75	106	33	36	48	29	46
Future Volume (vph)	45	658	103	25	750	75	106	33	36	48	29	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.93		1.00	0.90	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3472			3511		1772	1659		1789	1699	
Flt Permitted		0.78			0.84		0.68	1.00		0.70	1.00	
Satd. Flow (perm)		2708			2952		1277	1659		1322	1699	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	49	715	112	54	893	109	147	45	40	65	39	73
RTOR Reduction (vph)	0	16	0	0	10	0	0	21	0	0	44	0
Lane Group Flow (vph)	0	860	0	0	1046	0	147	64	0	65	68	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		30.7			30.7		27.1	27.1		27.1	27.1	
Effective Green, g (s)		30.7			30.7		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.44			0.44		0.39	0.39		0.39	0.39	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1191			1298		495	644		513	659	
v/s Ratio Prot								0.04			0.04	
v/s Ratio Perm		0.32			c0.35		c0.12			0.05		
v/c Ratio		0.72			0.81		0.30	0.10		0.13	0.10	
Uniform Delay, d1		16.1			17.0		14.8	13.6		13.7	13.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2			3.8		1.5	0.3		0.5	0.3	
Delay (s)		18.2			20.7		16.3	13.9		14.2	13.9	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		18.2			20.7			15.4			14.0	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	16.5
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	268	222	60	274	184	255	448	62	186	435	291
Future Volume (vph)	266	268	222	60	274	184	255	448	62	186	435	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.94		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3324		1789	3377		1789	3508		1789	3359	
Flt Permitted	0.18	1.00		0.44	1.00		0.13	1.00		0.40	1.00	
Satd. Flow (perm)	341	3324		831	3377		245	3508		757	3359	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	341	295	267	76	347	209	311	482	73	216	489	338
RTOR Reduction (vph)	0	120	0	0	75	0	0	8	0	0	92	0
Lane Group Flow (vph)	341	442	0	76	481	0	311	547	0	216	735	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	47.0	35.3		31.1	23.4		58.3	40.7		48.8	35.2	
Effective Green, g (s)	47.0	35.3		31.1	23.4		58.3	40.7		48.8	35.2	
Actuated g/C Ratio	0.40	0.30		0.27	0.20		0.50	0.35		0.42	0.30	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	378	1000		283	673		373	1217		434	1007	
v/s Ratio Prot	c0.15	0.13		0.02	0.14		c0.14	0.16		0.06	0.22	
v/s Ratio Perm	c0.21			0.05			c0.28			0.15		
v/c Ratio	0.90	0.44		0.27	0.71		0.83	0.45		0.50	0.73	
Uniform Delay, d1	27.9	33.1		33.1	43.8		27.6	29.6		22.8	36.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.9	0.3		0.5	3.6		14.7	1.2		0.9	4.6	
Delay (s)	51.8	33.4		33.6	47.4		42.3	30.8		23.7	41.4	
Level of Service	D	C		C	D		D	C		C	D	
Approach Delay (s)		40.3			45.8			35.0			37.8	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	117.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

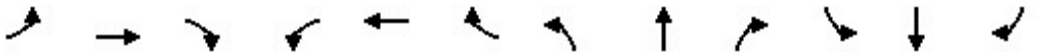
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	578	278	140	448	167	273	315	113	251	355	148
Future Volume (vph)	206	578	278	140	448	167	273	315	113	251	355	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3430		3471	3423		1789	3408	
Flt Permitted	0.11	1.00	1.00	0.26	1.00		0.95	1.00		0.26	1.00	
Satd. Flow (perm)	213	3579	1601	484	3430		3471	3423		483	3408	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	271	664	335	194	582	223	359	380	155	369	394	183
RTOR Reduction (vph)	0	0	237	0	30	0	0	32	0	0	37	0
Lane Group Flow (vph)	271	664	98	194	775	0	359	503	0	369	540	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	51.5	35.4	35.4	45.3	32.3		18.0	30.2		56.6	34.6	
Effective Green, g (s)	51.5	35.4	35.4	45.3	32.3		18.0	30.2		56.6	34.6	
Actuated g/C Ratio	0.43	0.29	0.29	0.37	0.27		0.15	0.25		0.47	0.29	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	300	1047	468	321	915		516	854		467	974	
v/s Ratio Prot	c0.12	0.19		0.06	0.23		0.10	0.15		c0.15	0.16	
v/s Ratio Perm	c0.26		0.06	0.16						c0.22		
v/c Ratio	0.90	0.63	0.21	0.60	0.85		0.70	0.59		0.79	0.55	
Uniform Delay, d1	32.6	37.2	32.3	27.3	42.0		48.9	39.9		23.2	36.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	28.5	1.3	0.2	3.2	7.3		4.1	3.0		8.8	2.3	
Delay (s)	61.1	38.4	32.5	30.5	49.3		53.0	42.9		32.0	38.9	
Level of Service	E	D	C	C	D		D	D		C	D	
Approach Delay (s)		41.7			45.7			47.0			36.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	121.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	879	3	0	743	12	3	0	0	10	0	29
Future Volume (vph)	51	879	3	0	743	12	3	0	0	10	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			1.00			0.91	
Flt Protected		1.00			1.00			0.95			0.98	
Satd. Flow (prot)		3563			3569			1789			1682	
Flt Permitted		0.75			1.00			0.72			0.93	
Satd. Flow (perm)		2692			3569			1358			1593	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	91	1046	3	0	874	16	3	0	0	17	0	38
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	1139	0	0	888	0	0	3	0	0	18	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		25.0			25.0			18.0			18.0	
Effective Green, g (s)		25.0			25.0			18.0			18.0	
Actuated g/C Ratio		0.45			0.45			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1223			1622			444			521	
v/s Ratio Prot					0.25							
v/s Ratio Perm		c0.42						0.00			c0.01	
v/c Ratio		0.93			0.55			0.01			0.03	
Uniform Delay, d1		14.2			10.9			12.5			12.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		12.6			0.4			0.0			0.0	
Delay (s)		26.8			11.3			12.5			12.6	
Level of Service		C			B			B			B	
Approach Delay (s)		26.8			11.3			12.5			12.6	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

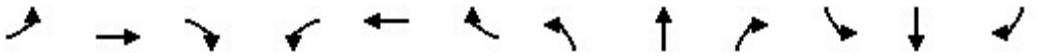
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	649	90	24	666	86	85	61	11	53	20	49
Future Volume (vph)	75	649	90	24	666	86	85	61	11	53	20	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.98		1.00	0.89	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3476			3496		1772	1821		1789	1674	
Flt Permitted		0.68			0.83		0.69	1.00		0.69	1.00	
Satd. Flow (perm)		2363			2898		1285	1821		1309	1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	82	705	98	52	793	125	118	84	12	72	27	78
RTOR Reduction (vph)	0	13	0	0	14	0	0	4	0	0	47	0
Lane Group Flow (vph)	0	872	0	0	956	0	118	92	0	72	58	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.6			28.6		27.2	27.2		27.2	27.2	
Effective Green, g (s)		28.6			28.6		27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.42			0.42		0.40	0.40		0.40	0.40	
Clearance Time (s)		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	
Lane Grp Cap (vph)		996			1222		515	730		525	671	
v/s Ratio Prot								0.05			0.03	
v/s Ratio Perm		c0.37			0.33		c0.09			0.06		
v/c Ratio		0.88			0.78		0.23	0.13		0.14	0.09	
Uniform Delay, d1		18.0			16.9		13.4	12.8		12.9	12.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.7			3.3		1.0	0.4		0.5	0.3	
Delay (s)		26.7			20.3		14.4	13.2		13.4	12.9	
Level of Service		C			C		B	B		B	B	
Approach Delay (s)		26.7			20.3			13.9			13.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	16.5
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	303	218	67	315	276	275	562	90	235	436	192
Future Volume (vph)	227	303	218	67	315	276	275	562	90	235	436	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.93		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3342		1789	3342		1789	3498		1789	3411	
Flt Permitted	0.12	1.00		0.42	1.00		0.18	1.00		0.24	1.00	
Satd. Flow (perm)	235	3342		796	3342		346	3498		460	3411	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	291	333	263	85	399	314	335	604	106	273	490	223
RTOR Reduction (vph)	0	102	0	0	116	0	0	10	0	0	40	0
Lane Group Flow (vph)	291	494	0	85	597	0	335	700	0	273	673	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.1	39.2		36.0	28.1		57.5	38.3		51.3	35.2	
Effective Green, g (s)	51.1	39.2		36.0	28.1		57.5	38.3		51.3	35.2	
Actuated g/C Ratio	0.42	0.32		0.30	0.23		0.47	0.32		0.42	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	341	1078		300	772		391	1102		370	988	
v/s Ratio Prot	c0.13	0.15		0.02	0.18		c0.14	0.20		0.10	0.20	
v/s Ratio Perm	c0.23			0.07			c0.27			0.21		
v/c Ratio	0.85	0.46		0.28	0.77		0.86	0.63		0.74	0.68	
Uniform Delay, d1	31.9	32.7		31.6	43.7		23.8	35.6		25.0	38.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.3	0.3		0.5	4.8		16.6	2.8		7.5	3.8	
Delay (s)	50.2	33.0		32.1	48.6		40.4	38.4		32.5	42.0	
Level of Service	D	C		C	D		D	D		C	D	
Approach Delay (s)		38.7			46.8			39.1			39.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	121.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	250	159	141	340	166	152	302	115	163	388	152
Future Volume (vph)	90	250	159	141	340	166	152	302	115	163	388	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3400		3471	3416		1789	3416	
Flt Permitted	0.22	1.00	1.00	0.51	1.00		0.95	1.00		0.34	1.00	
Satd. Flow (perm)	419	3579	1601	956	3400		3471	3416		633	3416	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	118	287	192	196	442	221	200	364	158	240	431	188
RTOR Reduction (vph)	0	0	148	0	47	0	0	33	0	0	31	0
Lane Group Flow (vph)	118	287	44	196	616	0	200	489	0	240	588	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	33.3	22.8	22.8	37.1	24.7		11.4	30.6		46.8	33.0	
Effective Green, g (s)	33.3	22.8	22.8	37.1	24.7		11.4	30.6		46.8	33.0	
Actuated g/C Ratio	0.33	0.23	0.23	0.37	0.25		0.11	0.31		0.47	0.33	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	284	819	366	459	843		397	1049		457	1131	
v/s Ratio Prot	0.04	0.08		c0.05	c0.18		0.06	0.14		c0.07	0.17	
v/s Ratio Perm	0.09		0.03	0.11						c0.17		
v/c Ratio	0.42	0.35	0.12	0.43	0.73		0.50	0.47		0.53	0.52	
Uniform Delay, d1	24.2	32.2	30.4	22.1	34.4		41.4	27.9		16.7	26.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.3	0.1	0.6	3.3		1.0	1.5		1.1	1.7	
Delay (s)	25.2	32.5	30.6	22.7	37.7		42.5	29.4		17.8	28.6	
Level of Service	C	C	C	C	D		D	C		B	C	
Approach Delay (s)		30.4			34.3			33.0			25.6	
Approach LOS		C			C			C			C	

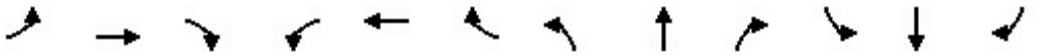
Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	489	0	0	627	11	0	0	0	29	0	38
Future Volume (vph)	11	489	0	0	627	11	0	0	0	29	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.93	
Flt Protected		1.00			1.00						0.98	
Satd. Flow (prot)		3573			3568						1713	
Flt Permitted		0.91			1.00						0.87	
Satd. Flow (perm)		3269			3568						1532	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	20	582	0	0	738	15	0	0	0	48	0	49
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	602	0	0	750	0	0	0	0	0	60	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		17.6			17.6						18.1	
Effective Green, g (s)		17.6			17.6						18.1	
Actuated g/C Ratio		0.37			0.37						0.38	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1206			1316						581	
v/s Ratio Prot					c0.21							
v/s Ratio Perm		0.18									c0.04	
v/c Ratio		0.50			0.57						0.10	
Uniform Delay, d1		11.6			12.0						9.6	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.3			0.6						0.1	
Delay (s)		12.0			12.6						9.6	
Level of Service		B			B						A	
Approach Delay (s)		12.0			12.6			0.0			9.6	
Approach LOS		B			B			A			A	

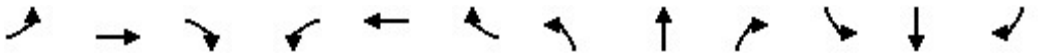
Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	411	79	53	552	35	86	36	33	71	31	37
Future Volume (vph)	13	411	79	53	552	35	86	36	33	71	31	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.94		1.00	0.91	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3462			3511		1772	1680		1789	1717	
Flt Permitted		0.93			0.75		0.69	1.00		0.70	1.00	
Satd. Flow (perm)		3208			2661		1291	1680		1322	1717	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	14	447	86	115	657	51	119	49	36	96	41	59
RTOR Reduction (vph)	0	22	0	0	6	0	0	16	0	0	33	0
Lane Group Flow (vph)	0	525	0	0	817	0	119	69	0	96	67	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.8			25.8		27.2	27.2		27.2	27.2	
Effective Green, g (s)		25.8			25.8		27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.40			0.40		0.42	0.42		0.42	0.42	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1273			1056		540	703		553	718	
v/s Ratio Prot								0.04			0.04	
v/s Ratio Perm		0.16			c0.31		c0.09			0.07		
v/c Ratio		0.41			0.77		0.22	0.10		0.17	0.09	
Uniform Delay, d1		14.1			17.1		12.1	11.5		11.9	11.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			3.6		0.9	0.3		0.7	0.3	
Delay (s)		14.4			20.6		13.0	11.7		12.5	11.7	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		14.4			20.6			12.5			12.1	
Approach LOS		B			C			B			B	

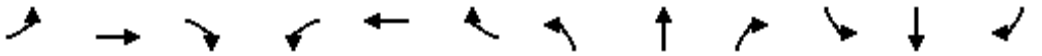
Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	249	160	73	276	229	125	315	65	299	542	238
Future Volume (vph)	152	249	160	73	276	229	125	315	65	299	542	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.94		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3357		1789	3349		1789	3480		1789	3411	
Flt Permitted	0.16	1.00		0.48	1.00		0.19	1.00		0.40	1.00	
Satd. Flow (perm)	307	3357		911	3349		364	3480		756	3411	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	195	274	193	92	349	260	152	339	76	348	609	277
RTOR Reduction (vph)	0	98	0	0	113	0	0	14	0	0	36	0
Lane Group Flow (vph)	195	369	0	92	496	0	152	401	0	348	850	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	42.5	30.5		31.5	23.5		47.5	35.5		56.0	40.0	
Effective Green, g (s)	42.5	30.5		31.5	23.5		47.5	35.5		56.0	40.0	
Actuated g/C Ratio	0.38	0.28		0.29	0.21		0.43	0.32		0.51	0.36	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	319	926		323	712		311	1118		537	1234	
v/s Ratio Prot	c0.08	0.11		0.02	c0.15		0.05	0.12		c0.10	c0.25	
v/s Ratio Perm	0.15			0.06			0.16			0.23		
v/c Ratio	0.61	0.40		0.28	0.70		0.49	0.36		0.65	0.69	
Uniform Delay, d1	25.2	32.5		29.8	40.2		20.8	28.8		17.2	30.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	0.3		0.5	3.0		1.2	0.9		2.7	3.2	
Delay (s)	28.6	32.8		30.3	43.2		22.0	29.7		19.9	33.1	
Level of Service	C	C		C	D		C	C		B	C	
Approach Delay (s)		31.6			41.5			27.6			29.4	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

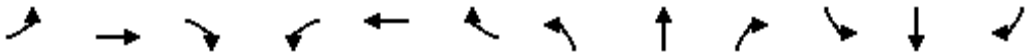
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	537	314	127	573	149	337	316	115	162	263	180
Future Volume (vph)	173	537	314	127	573	149	337	316	115	162	263	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3465		3471	3421		1789	3347	
Flt Permitted	0.10	1.00	1.00	0.31	1.00		0.95	1.00		0.37	1.00	
Satd. Flow (perm)	193	3579	1601	585	3465		3471	3421		700	3347	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	228	617	378	176	744	199	443	381	158	238	292	222
RTOR Reduction (vph)	0	0	257	0	18	0	0	31	0	0	99	0
Lane Group Flow (vph)	228	617	121	176	925	0	443	508	0	238	415	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	54.5	39.1	39.1	48.5	36.1		20.6	35.1		45.7	30.1	
Effective Green, g (s)	54.5	39.1	39.1	48.5	36.1		20.6	35.1		45.7	30.1	
Actuated g/C Ratio	0.45	0.32	0.32	0.40	0.30		0.17	0.29		0.37	0.25	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	287	1145	512	354	1023		585	982		400	824	
v/s Ratio Prot	c0.10	0.17		0.05	c0.27		c0.13	0.15		0.08	0.12	
v/s Ratio Perm	0.25		0.08	0.15						c0.15		
v/c Ratio	0.79	0.54	0.24	0.50	0.90		0.76	0.52		0.60	0.50	
Uniform Delay, d1	30.4	34.1	30.6	25.1	41.4		48.4	36.5		27.8	39.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.0	0.5	0.2	1.1	11.1		5.6	1.9		2.4	2.2	
Delay (s)	44.4	34.6	30.8	26.2	52.5		54.0	38.4		30.2	41.8	
Level of Service	D	C	C	C	D		D	D		C	D	
Approach Delay (s)		35.3			48.4			45.4			38.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	122.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

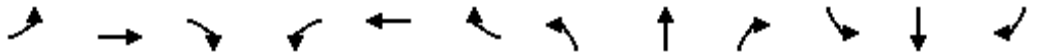
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	766	0	0	854	14	0	0	0	12	0	37
Future Volume (vph)	21	766	0	0	854	14	0	0	0	12	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.90	
Flt Protected		1.00			1.00						0.99	
Satd. Flow (prot)		3571			3569						1679	
Flt Permitted		0.86			1.00						0.93	
Satd. Flow (perm)		3077			3569						1593	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	38	912	0	0	1005	19	0	0	0	20	0	48
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	39	0
Lane Group Flow (vph)	0	950	0	0	1022	0	0	0	0	0	29	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		21.6			21.6						18.1	
Effective Green, g (s)		21.6			21.6						18.1	
Actuated g/C Ratio		0.42			0.42						0.35	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1285			1491						557	
v/s Ratio Prot					0.29							
v/s Ratio Perm		c0.31									c0.02	
v/c Ratio		0.74			0.69						0.05	
Uniform Delay, d1		12.7			12.3						11.1	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		2.3			1.3						0.0	
Delay (s)		14.9			13.6						11.2	
Level of Service		B			B						B	
Approach Delay (s)		14.9			13.6			0.0			11.2	
Approach LOS		B			B			A			B	

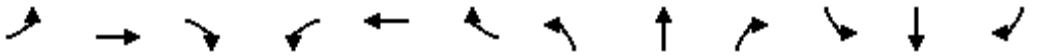
Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	632	99	24	720	72	101	31	34	46	27	44
Future Volume (vph)	43	632	99	24	720	72	101	31	34	46	27	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.93		1.00	0.90	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3472			3511		1772	1660		1789	1697	
Flt Permitted		0.79			0.85		0.69	1.00		0.71	1.00	
Satd. Flow (perm)		2757			2993		1284	1660		1329	1697	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	47	687	108	52	857	104	140	42	37	62	36	70
RTOR Reduction (vph)	0	16	0	0	10	0	0	20	0	0	42	0
Lane Group Flow (vph)	0	826	0	0	1003	0	140	59	0	62	64	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		29.1			29.1		27.1	27.1		27.1	27.1	
Effective Green, g (s)		29.1			29.1		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.43			0.43		0.40	0.40		0.40	0.40	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1176			1277		510	659		528	674	
v/s Ratio Prot								0.04			0.04	
v/s Ratio Perm		0.30			c0.34		c0.11			0.05		
v/c Ratio		0.70			0.79		0.27	0.09		0.12	0.09	
Uniform Delay, d1		16.0			16.9		13.9	12.8		13.0	12.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.9			3.2		1.3	0.3		0.5	0.3	
Delay (s)		17.9			20.1		15.2	13.1		13.4	13.1	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		17.9			20.1			14.5			13.3	
Approach LOS		B			C			B			B	

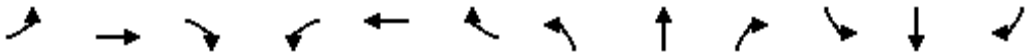
Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	16.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	257	213	57	263	176	245	430	59	178	418	279
Future Volume (vph)	255	257	213	57	263	176	245	430	59	178	418	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.94		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3323		1789	3377		1789	3509		1789	3360	
Flt Permitted	0.19	1.00		0.45	1.00		0.15	1.00		0.42	1.00	
Satd. Flow (perm)	364	3323		850	3377		289	3509		793	3360	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	327	282	257	72	333	200	299	462	69	207	470	324
RTOR Reduction (vph)	0	123	0	0	76	0	0	8	0	0	91	0
Lane Group Flow (vph)	327	416	0	72	457	0	299	523	0	207	703	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	45.6	34.0		29.9	22.3		57.3	40.3		48.2	35.2	
Effective Green, g (s)	45.6	34.0		29.9	22.3		57.3	40.3		48.2	35.2	
Actuated g/C Ratio	0.40	0.30		0.26	0.19		0.50	0.35		0.42	0.31	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	383	983		283	655		380	1230		445	1029	
v/s Ratio Prot	c0.14	0.13		0.02	0.14		c0.12	0.15		0.05	0.21	
v/s Ratio Perm	c0.19			0.05			c0.27			0.14		
v/c Ratio	0.85	0.42		0.25	0.70		0.79	0.43		0.47	0.68	
Uniform Delay, d1	27.2	32.6		32.8	43.2		22.0	28.5		21.9	35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.6	0.3		0.5	3.3		10.3	1.1		0.8	3.7	
Delay (s)	43.8	32.9		33.2	46.4		32.3	29.5		22.7	38.6	
Level of Service	D	C		C	D		C	C		C	D	
Approach Delay (s)		37.0			44.8			30.5			35.3	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	114.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

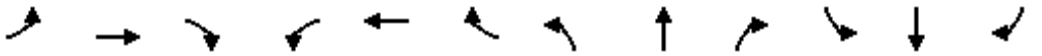
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	555	267	134	430	160	262	302	108	241	341	142
Future Volume (vph)	198	555	267	134	430	160	262	302	108	241	341	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3579	1601	1789	3430		3471	3423		1789	3409	
Flt Permitted	0.12	1.00	1.00	0.28	1.00		0.95	1.00		0.28	1.00	
Satd. Flow (perm)	226	3579	1601	521	3430		3471	3423		533	3409	
Peak-hour factor, PHF	0.76	0.87	0.83	0.72	0.77	0.75	0.76	0.83	0.73	0.68	0.90	0.81
Adj. Flow (vph)	261	638	322	186	558	213	345	364	148	354	379	175
RTOR Reduction (vph)	0	0	229	0	30	0	0	31	0	0	37	0
Lane Group Flow (vph)	261	638	93	186	741	0	345	481	0	354	517	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	50.1	34.1	34.1	43.5	30.8		17.3	30.3		55.2	34.1	
Effective Green, g (s)	50.1	34.1	34.1	43.5	30.8		17.3	30.3		55.2	34.1	
Actuated g/C Ratio	0.42	0.29	0.29	0.37	0.26		0.15	0.26		0.47	0.29	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	307	1032	461	327	893		508	877		473	983	
v/s Ratio Prot	c0.11	0.18		0.06	0.22		0.10	0.14		c0.13	0.15	
v/s Ratio Perm	c0.25		0.06	0.15						c0.22		
v/c Ratio	0.85	0.62	0.20	0.57	0.83		0.68	0.55		0.75	0.53	
Uniform Delay, d1	29.6	36.4	31.8	26.9	41.2		47.8	38.0		22.2	35.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.6	1.1	0.2	2.3	6.4		3.6	2.5		6.4	2.0	
Delay (s)	49.2	37.5	32.0	29.2	47.7		51.4	40.5		28.6	37.3	
Level of Service	D	D	C	C	D		D	D		C	D	
Approach Delay (s)		38.6			44.1			44.9			33.9	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	118.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

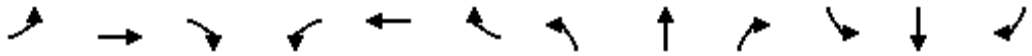
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	844	2	0	714	11	0	0	0	9	0	27
Future Volume (vph)	49	844	2	0	714	11	0	0	0	9	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		1.00			1.00						0.91	
Flt Protected		1.00			1.00						0.99	
Satd. Flow (prot)		3563			3569						1680	
Flt Permitted		0.77			1.00						0.94	
Satd. Flow (perm)		2745			3569						1598	
Peak-hour factor, PHF	0.56	0.84	0.92	0.92	0.85	0.75	0.92	0.92	0.92	0.60	0.92	0.77
Adj. Flow (vph)	88	1005	2	0	840	15	0	0	0	15	0	35
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	33	0
Lane Group Flow (vph)	0	1095	0	0	853	0	0	0	0	0	17	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		24.2			24.2						18.0	
Effective Green, g (s)		24.2			24.2						18.0	
Actuated g/C Ratio		0.45			0.45						0.33	
Clearance Time (s)		6.0			6.0						6.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		1225			1593						530	
v/s Ratio Prot					0.24							
v/s Ratio Perm		c0.40									c0.01	
v/c Ratio		0.89			0.54						0.03	
Uniform Delay, d1		13.8			10.9						12.2	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		8.6			0.3						0.0	
Delay (s)		22.5			11.3						12.2	
Level of Service		C			B						B	
Approach Delay (s)		22.5			11.3			0.0			12.2	
Approach LOS		C			B			A			B	

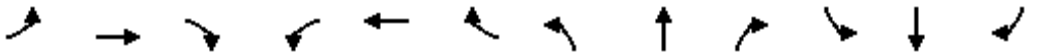
Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	623	86	23	640	82	81	58	10	50	19	47
Future Volume (vph)	72	623	86	23	640	82	81	58	10	50	19	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.98		1.00	0.89	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3476			3497		1772	1823		1789	1672	
Flt Permitted		0.69			0.84		0.69	1.00		0.70	1.00	
Satd. Flow (perm)		2412			2937		1291	1823		1316	1672	
Peak-hour factor, PHF	0.92	0.92	0.92	0.46	0.84	0.69	0.72	0.73	0.91	0.74	0.75	0.63
Adj. Flow (vph)	78	677	93	50	762	119	112	79	11	68	25	75
RTOR Reduction (vph)	0	14	0	0	14	0	0	3	0	0	44	0
Lane Group Flow (vph)	0	834	0	0	917	0	113	87	0	68	56	0
Heavy Vehicles (%)	2%	3%	2%	4%	2%	2%	3%	2%	14%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.8			26.8		27.2	27.2		27.2	27.2	
Effective Green, g (s)		26.8			26.8		27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.41			0.41		0.41	0.41		0.41	0.41	
Clearance Time (s)		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	
Lane Grp Cap (vph)		979			1192		532	751		542	689	
v/s Ratio Prot								0.05			0.03	
v/s Ratio Perm		c0.35			0.31		c0.09			0.05		
v/c Ratio		0.85			0.77		0.21	0.12		0.13	0.08	
Uniform Delay, d1		17.8			16.9		12.5	12.0		12.0	11.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.3			3.0		0.9	0.3		0.5	0.2	
Delay (s)		25.1			20.0		13.4	12.3		12.5	12.0	
Level of Service		C			B		B	B		B	B	
Approach Delay (s)		25.1			20.0			12.9			12.2	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	291	209	64	302	265	264	540	86	225	419	184
Future Volume (vph)	218	291	209	64	302	265	264	540	86	225	419	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.93		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	3342		1789	3342		1789	3499		1789	3411	
Flt Permitted	0.13	1.00		0.44	1.00		0.21	1.00		0.27	1.00	
Satd. Flow (perm)	245	3342		823	3342		393	3499		508	3411	
Peak-hour factor, PHF	0.78	0.91	0.83	0.79	0.79	0.88	0.82	0.93	0.85	0.86	0.89	0.86
Adj. Flow (vph)	279	320	252	81	382	301	322	581	101	262	471	214
RTOR Reduction (vph)	0	102	0	0	116	0	0	10	0	0	39	0
Lane Group Flow (vph)	279	470	0	81	567	0	322	672	0	262	646	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	49.2	37.5		34.5	26.8		56.5	38.3		50.5	35.3	
Effective Green, g (s)	49.2	37.5		34.5	26.8		56.5	38.3		50.5	35.3	
Actuated g/C Ratio	0.41	0.32		0.29	0.23		0.48	0.32		0.43	0.30	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	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)	340	1055		301	754		401	1128		380	1014	
v/s Ratio Prot	c0.13	0.14		0.02	0.17		c0.12	0.19		0.09	0.19	
v/s Ratio Perm	c0.21			0.06			c0.26			0.20		
v/c Ratio	0.82	0.45		0.27	0.75		0.80	0.60		0.69	0.64	
Uniform Delay, d1	29.6	32.3		31.3	42.8		22.3	33.7		23.7	36.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.6	0.3		0.5	4.2		11.1	2.3		5.2	3.1	
Delay (s)	44.2	32.6		31.8	47.1		33.3	36.0		28.9	39.2	
Level of Service	D	C		C	D		C	D		C	D	
Approach Delay (s)		36.4			45.5			35.2			36.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	118.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group