

Lanes, Volumes, Timings  
1: Brownridge Road/Fifth Line & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	1325	80	25	690	60	15	0	10	35	10	100
Future Volume (vph)	215	1325	80	25	690	60	15	0	10	35	10	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	145.0		65.0	30.0		0.0	20.0		0.0	25.0		25.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	100.0			100.0			20.0			75.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.988			0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	4252	1524	1444	3744	0	1480	1154	0	1289	1900	1468
Flt Permitted	0.355			0.195			0.751			0.751		
Satd. Flow (perm)	630	4252	1524	296	3744	0	1170	1154	0	1019	1900	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		42			91				100
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		486.3			703.6			285.2			91.4	
Travel Time (s)		29.2			42.2			20.5			6.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	22%	6%	25%	38%	24%	22%	0%	40%	40%	0%	10%
Adj. Flow (vph)	215	1325	80	25	690	60	15	0	10	35	10	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	1325	80	25	750	0	15	10	0	35	10	100
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
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	25.0	25.0	25.0	25.0	25.0		10.0	10.0		10.0	10.0	10.0

Lanes, Volumes, Timings  
1: Brownridge Road/Fifth Line & Steeles Avenue

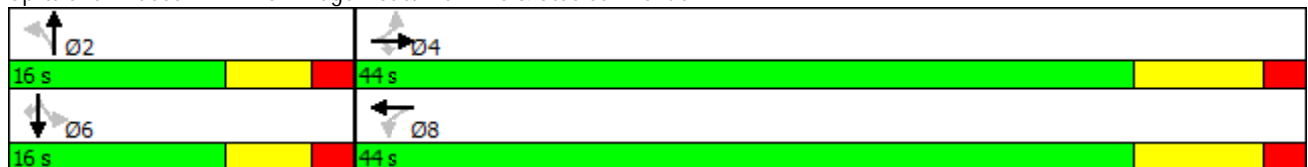


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	33.0	33.0	33.0	33.0	33.0		16.0	16.0		16.0	16.0	16.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0		16.0	16.0		16.0	16.0	16.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	73.3%		26.7%	26.7%		26.7%	26.7%	26.7%
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0		10.0	10.0		10.0	10.0	10.0
Yellow Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max		None	None		None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)	44.0	44.0	44.0	44.0	44.0		10.1	10.1		10.1	10.1	10.1
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70		0.16	0.16		0.16	0.16	0.16
v/c Ratio	0.49	0.45	0.07	0.12	0.29		0.08	0.04		0.22	0.03	0.31
Control Delay	12.0	6.5	1.7	7.1	5.1		22.5	0.3		25.9	21.5	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	12.0	6.5	1.7	7.1	5.1		22.5	0.3		25.9	21.5	8.7
LOS	B	A	A	A	A		C	A		C	C	A
Approach Delay		6.9			5.2			13.6			13.8	
Approach LOS		A			A			B			B	

Intersection Summary

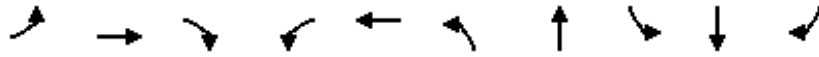
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	63.1
Natural Cycle:	60
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	6.9
Intersection LOS:	A
Intersection Capacity Utilization:	73.4%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 1: Brownridge Road/Fifth Line & Steeles Avenue



Queues  
1: Brownridge Road/Fifth Line & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	215	1325	80	25	750	15	10	35	10	100
v/c Ratio	0.49	0.45	0.07	0.12	0.29	0.08	0.04	0.22	0.03	0.31
Control Delay	12.0	6.5	1.7	7.1	5.1	22.5	0.3	25.9	21.5	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	6.5	1.7	7.1	5.1	22.5	0.3	25.9	21.5	8.7
Queue Length 50th (m)	13.1	28.2	0.0	1.1	12.8	1.5	0.0	3.7	1.0	0.0
Queue Length 95th (m)	34.2	38.0	4.0	4.4	18.6	6.0	0.0	10.7	4.5	10.9
Internal Link Dist (m)		462.3			679.6		261.2		67.4	
Turn Bay Length (m)	145.0		65.0	30.0		20.0		25.0		25.0
Base Capacity (vph)	439	2967	1087	206	2625	187	261	162	303	318
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.45	0.07	0.12	0.29	0.08	0.04	0.22	0.03	0.31

Intersection Summary

# HCM Signalized Intersection Capacity Analysis

## 1: Brownridge Road/Fifth Line & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



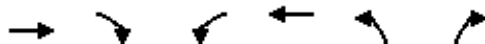
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	1325	80	25	690	60	15	0	10	35	10	100
Future Volume (vph)	215	1325	80	25	690	60	15	0	10	35	10	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1687	4252	1524	1444	3744		1480	1154		1289	1900	1468
Flt Permitted	0.36	1.00	1.00	0.19	1.00		0.75	1.00		0.75	1.00	1.00
Satd. Flow (perm)	631	4252	1524	296	3744		1170	1154		1019	1900	1468
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	1325	80	25	690	60	15	0	10	35	10	100
RTOR Reduction (vph)	0	0	27	0	14	0	0	9	0	0	0	88
Lane Group Flow (vph)	215	1325	53	25	736	0	15	1	0	35	10	12
Heavy Vehicles (%)	7%	22%	6%	25%	38%	24%	22%	0%	40%	40%	0%	10%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	42.3	42.3	42.3	42.3	42.3		7.9	7.9		7.9	7.9	7.9
Effective Green, g (s)	42.3	42.3	42.3	42.3	42.3		7.9	7.9		7.9	7.9	7.9
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.66		0.12	0.12		0.12	0.12	0.12
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	415	2801	1004	195	2466		143	142		125	233	180
v/s Ratio Prot		0.31			0.20			0.00				0.01
v/s Ratio Perm	c0.34		0.03	0.08			0.01			c0.03		0.01
v/c Ratio	0.52	0.47	0.05	0.13	0.30		0.10	0.01		0.28	0.04	0.07
Uniform Delay, d1	5.7	5.4	3.9	4.1	4.6		25.0	24.7		25.6	24.8	24.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	0.6	0.1	1.4	0.3		0.3	0.0		1.2	0.1	0.2
Delay (s)	10.2	6.0	4.0	5.4	5.0		25.3	24.7		26.8	24.9	25.1
Level of Service	B	A	A	A	A		C	C		C	C	C
Approach Delay (s)		6.5			5.0			25.1			25.5	
Approach LOS		A			A			C			C	

### Intersection Summary

HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

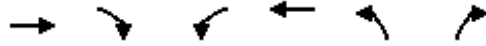
## Lanes, Volumes, Timings 2: Fifth Line South & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1375	35	10	775	10	5
Future Volume (vph)	1375	35	10	775	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	60.0		15.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			100.0		30.0	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4217	1538	1543	3786	1543	1615
Flt Permitted			0.185		0.950	
Satd. Flow (perm)	4217	1538	300	3786	1543	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		35				5
Link Speed (k/h)	60			60	60	
Link Distance (m)	703.6			479.7	556.9	
Travel Time (s)	42.2			28.8	33.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	23%	5%	17%	37%	17%	0%
Adj. Flow (vph)	1375	35	10	775	10	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1375	35	10	775	10	5
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	4			8		
Permitted Phases		4	8		2	2
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	25.0	25.0	25.0	25.0	10.0	10.0

Lanes, Volumes, Timings  
2: Fifth Line South & Steeles Avenue

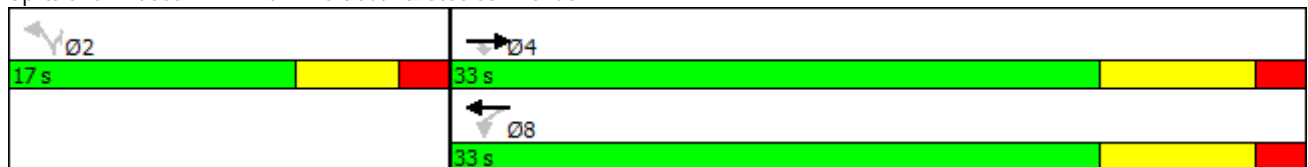


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	33.0	33.0	33.0	33.0	16.0	16.0
Total Split (s)	33.0	33.0	33.0	33.0	17.0	17.0
Total Split (%)	66.0%	66.0%	66.0%	66.0%	34.0%	34.0%
Maximum Green (s)	25.0	25.0	25.0	25.0	11.0	11.0
Yellow Time (s)	6.0	6.0	6.0	6.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	47.4	47.4	47.4	47.4	10.1	10.1
Actuated g/C Ratio	0.93	0.93	0.93	0.93	0.20	0.20
v/c Ratio	0.35	0.02	0.04	0.22	0.03	0.02
Control Delay	2.2	1.4	3.0	1.8	19.8	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.2	1.4	3.0	1.8	19.8	14.0
LOS	A	A	A	A	B	B
Approach Delay	2.2			1.8	17.9	
Approach LOS	A			A	B	

Intersection Summary

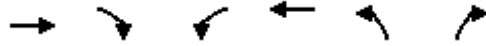
Area Type:	Other
Cycle Length:	50
Actuated Cycle Length:	51.2
Natural Cycle:	50
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.35
Intersection Signal Delay:	2.2
Intersection LOS:	A
Intersection Capacity Utilization	55.0%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 2: Fifth Line South & Steeles Avenue



**Queues**  
**2: Fifth Line South & Steeles Avenue**

2031 Background AM  
 Premier Gateway Phase 1B Employment Area

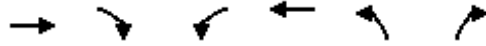


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1375	35	10	775	10	5
v/c Ratio	0.35	0.02	0.04	0.22	0.03	0.02
Control Delay	2.2	1.4	3.0	1.8	19.8	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.2	1.4	3.0	1.8	19.8	14.0
Queue Length 50th (m)	0.0	0.0	0.0	0.0	0.7	0.0
Queue Length 95th (m)	39.8	2.6	2.1	20.1	4.8	2.7
Internal Link Dist (m)	679.6			455.7	532.9	
Turn Bay Length (m)		30.0	60.0		15.0	
Base Capacity (vph)	3901	1425	277	3502	335	355
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.02	0.04	0.22	0.03	0.01
<b>Intersection Summary</b>						

# HCM Signalized Intersection Capacity Analysis

## 2: Fifth Line South & Steeles Avenue

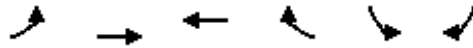
2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1375	35	10	775	10	5
Future Volume (vph)	1375	35	10	775	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	6.0	6.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	4217	1538	1543	3786	1543	1615
Flt Permitted	1.00	1.00	0.19	1.00	0.95	1.00
Satd. Flow (perm)	4217	1538	301	3786	1543	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1375	35	10	775	10	5
RTOR Reduction (vph)	0	10	0	0	0	5
Lane Group Flow (vph)	1375	25	10	775	10	0
Heavy Vehicles (%)	23%	5%	17%	37%	17%	0%
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	4		8			
Permitted Phases	4		8		2 2	
Actuated Green, G (s)	40.5	40.5	40.5	40.5	1.6	1.6
Effective Green, g (s)	40.5	40.5	40.5	40.5	1.6	1.6
Actuated g/C Ratio	0.72	0.72	0.72	0.72	0.03	0.03
Clearance Time (s)	8.0	8.0	8.0	8.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3044	1110	217	2733	44	46
v/s Ratio Prot	c0.33		0.20			
v/s Ratio Perm	0.02		0.03		c0.01 0.00	
v/c Ratio	0.45	0.02	0.05	0.28	0.23	0.00
Uniform Delay, d1	3.2	2.2	2.2	2.7	26.6	26.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.4	0.3	2.6	0.0
Delay (s)	3.7	2.2	2.6	3.0	29.3	26.5
Level of Service	A	A	A	A	C	C
Approach Delay (s)	3.7		3.0		28.3	
Approach LOS	A		A		C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			3.6	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			56.1	Sum of lost time (s)		14.0
Intersection Capacity Utilization			55.0%	ICU Level of Service		B
Analysis Period (min)			15			
c Critical Lane Group						



Lanes, Volumes, Timings  
3: Steeles Avenue & Sixth Line



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	55	1440	745	20	240	55
Future Volume (vph)	55	1440	745	20	240	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			30.0	30.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	100.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Fr <sub>t</sub>				0.850		0.850
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1752	4217	3842	1077	1031	1568
Fl <sub>t</sub> Permitted	0.950				0.950	
Satd. Flow (perm)	1752	4217	3842	1077	1031	1568
Link Speed (k/h)		60	80		70	
Link Distance (m)		479.7	441.5		3066.1	
Travel Time (s)		28.8	19.9		157.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	23%	35%	50%	75%	3%
Adj. Flow (vph)	55	1440	745	20	240	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	1440	745	20	240	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

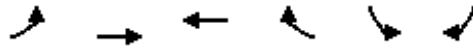
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.8%
Analysis Period (min)	15
	ICU Level of Service A

# HCM Unsignalized Intersection Capacity Analysis

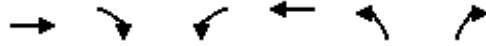
## 3: Steeles Avenue & Sixth Line

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR					
Lane Configurations											
Traffic Volume (veh/h)	55	1440	745	20	240	55					
Future Volume (Veh/h)	55	1440	745	20	240	55					
Sign Control		Free	Free		Stop						
Grade		0%	0%		0%						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Hourly flow rate (vph)	55	1440	745	20	240	55					
Pedestrians											
Lane Width (m)											
Walking Speed (m/s)											
Percent Blockage											
Right turn flare (veh)											
Median type		None	None								
Median storage veh											
Upstream signal (m)											
pX, platoon unblocked											
vC, conflicting volume	765				1335	248					
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	765				1335	248					
tC, single (s)	4.2				8.3	7.0					
tC, 2 stage (s)											
tF (s)	2.2				4.2	3.3					
p0 queue free %	93				0	93					
cM capacity (veh/h)	837				72	749					
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2	
Volume Total	55	480	480	480	248	248	248	20	240	55	
Volume Left	55	0	0	0	0	0	0	0	240	0	
Volume Right	0	0	0	0	0	0	0	20	0	55	
cSH	837	1700	1700	1700	1700	1700	1700	1700	72	749	
Volume to Capacity	0.07	0.28	0.28	0.28	0.15	0.15	0.15	0.01	3.31	0.07	
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Err	1.9	
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Err	10.2	
Lane LOS	A								F	B	
Approach Delay (s)	0.4				0.0				8136.7		
Approach LOS									F		
Intersection Summary											
Average Delay			939.7								
Intersection Capacity Utilization			47.8%	ICU Level of Service					A		
Analysis Period (min)			15								

Lanes, Volumes, Timings  
4: Sixth Line South & Steeles Avenue



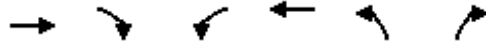
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1230	5	15	765	5	5
Future Volume (vph)	1230	5	15	765	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	60.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			100.0		7.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4433	1615	1736	4021	1597	1509
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4433	1615	1736	4021	1597	1509
Link Speed (k/h)	80			80	50	
Link Distance (m)	463.9			497.0	166.1	
Travel Time (s)	20.9			22.4	12.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	17%	0%	4%	29%	13%	7%
Adj. Flow (vph)	1230	5	15	765	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1230	5	15	765	5	5
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.8%
ICU Level of Service	A
Analysis Period (min)	15

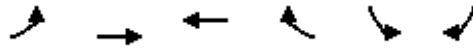
HCM Unsignalized Intersection Capacity Analysis  
4: Sixth Line South & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR							
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗							
Traffic Volume (veh/h)	1230	5	15	765	5	5							
Future Volume (Veh/h)	1230	5	15	765	5	5							
Sign Control	Free			Free		Stop							
Grade	0%			0%		0%							
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00							
Hourly flow rate (vph)	1230	5	15	765	5	5							
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None			None									
Median storage veh													
Upstream signal (m)													
pX, platoon unblocked													
vC, conflicting volume			1235		1515		410						
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol			1235		1515		410						
tC, single (s)			4.2		7.1		7.0						
tC, 2 stage (s)													
tF (s)			2.2		3.6		3.4						
p0 queue free %			97		95		99						
cM capacity (veh/h)			549		96		577						
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2			
Volume Total	410	410	410	5	15	255	255	255	5	5			
Volume Left	0	0	0	0	15	0	0	0	5	0			
Volume Right	0	0	0	5	0	0	0	0	0	5			
cSH	1700	1700	1700	1700	549	1700	1700	1700	96	577			
Volume to Capacity	0.24	0.24	0.24	0.00	0.03	0.15	0.15	0.15	0.05	0.01			
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	1.3	0.2			
Control Delay (s)	0.0	0.0	0.0	0.0	11.7	0.0	0.0	0.0	44.4	11.3			
Lane LOS					B				E		B		
Approach Delay (s)	0.0				0.2				27.8				
Approach LOS									D				
Intersection Summary													
Average Delay			0.2										
Intersection Capacity Utilization			33.8%		ICU Level of Service				A				
Analysis Period (min)			15										

Lanes, Volumes, Timings  
5: Steeles Avenue & Hornby Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	1125	580	25	10	50
Future Volume (vph)	25	1125	580	25	10	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			30.0	30.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	100.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Fr <sub>t</sub>				0.850		0.850
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1687	4183	3732	1509	1543	1509
Fl <sub>t</sub> Permitted	0.950				0.950	
Satd. Flow (perm)	1687	4183	3732	1509	1543	1509
Link Speed (k/h)		60	60		60	
Link Distance (m)		497.0	879.8		1223.8	
Travel Time (s)		29.8	52.8		73.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	24%	39%	7%	17%	7%
Adj. Flow (vph)	25	1125	580	25	10	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	1125	580	25	10	50
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.2	7.2		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

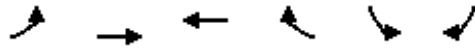
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.7%
Analysis Period (min)	15
	ICU Level of Service A

# HCM Unsignalized Intersection Capacity Analysis

## 5: Steeles Avenue & Hornby Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR				
Lane Configurations										
Traffic Volume (veh/h)	25	1125	580	25	10	50				
Future Volume (Veh/h)	25	1125	580	25	10	50				
Sign Control	Free		Free		Stop					
Grade	0%		0%		0%					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Hourly flow rate (vph)	25	1125	580	25	10	50				
Pedestrians										
Lane Width (m)										
Walking Speed (m/s)										
Percent Blockage										
Right turn flare (veh)										
Median type	None		None							
Median storage veh										
Upstream signal (m)										
pX, platoon unblocked										
vC, conflicting volume	605				1005	193				
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	605				1005	193				
tC, single (s)	4.2				7.1	7.0				
tC, 2 stage (s)										
tF (s)	2.3				3.7	3.4				
p0 queue free %	97				95	94				
cM capacity (veh/h)	935				208	800				
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2
Volume Total	25	375	375	375	193	193	193	25	10	50
Volume Left	25	0	0	0	0	0	0	0	10	0
Volume Right	0	0	0	0	0	0	0	25	0	50
cSH	935	1700	1700	1700	1700	1700	1700	1700	208	800
Volume to Capacity	0.03	0.22	0.22	0.22	0.11	0.11	0.11	0.01	0.05	0.06
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.6
Control Delay (s)	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.2	9.8
Lane LOS	A								C	A
Approach Delay (s)	0.2				0.0				12.0	
Approach LOS									B	
Intersection Summary										
Average Delay			0.5							
Intersection Capacity Utilization			31.7%		ICU Level of Service				A	
Analysis Period (min)			15							

Lanes, Volumes, Timings  
6: Trafalgar Road & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	840	100	705	640	55	65	400	530	230	1390	330
Future Volume (vph)	75	840	100	705	640	55	65	400	530	230	1390	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		40.0	130.0		70.0	100.0		65.0	250.0		80.0
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (m)	100.0			100.0			80.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2633	4433	1179	3400	4084	1455	2148	4550	1524	1752	4940	950
Flt Permitted	0.950			0.950			0.950			0.476		
Satd. Flow (perm)	2633	4433	1179	3400	4084	1455	2148	4550	1524	878	4940	950
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230			172			395			292
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		879.8			311.3			332.0			289.5	
Travel Time (s)		52.8			18.7			17.1			14.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	33%	17%	37%	3%	27%	11%	63%	14%	6%	3%	5%	70%
Adj. Flow (vph)	75	840	100	705	640	55	65	400	530	230	1390	330
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	840	100	705	640	55	65	400	530	230	1390	330
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)		7.2			7.2			7.2			7.2	
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
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0	9.0	20.0	20.0

Lanes, Volumes, Timings  
6: Trafalgar Road & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area

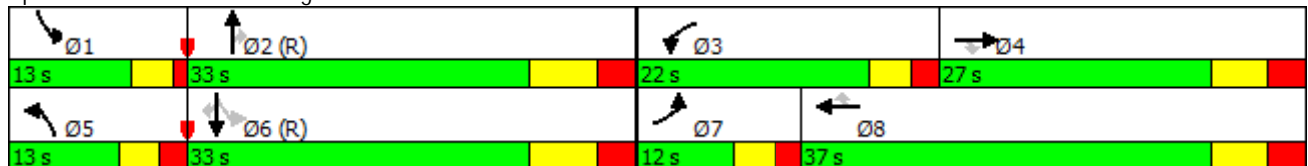


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.0	27.0	27.0	13.0	27.0	27.0	13.0	28.0	28.0	13.0	28.0	28.0
Total Split (s)	12.0	27.0	27.0	22.0	37.0	37.0	13.0	33.0	33.0	13.0	33.0	33.0
Total Split (%)	12.6%	28.4%	28.4%	23.2%	38.9%	38.9%	13.7%	34.7%	34.7%	13.7%	34.7%	34.7%
Maximum Green (s)	7.0	20.0	20.0	17.0	30.0	30.0	8.0	25.0	25.0	9.0	25.0	25.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	0.2	0.2	3.0	0.2	0.2
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
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		26.0	26.0		26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	7.0	20.0	20.0	17.0	32.4	32.4	8.0	25.0	25.0	38.8	27.6	27.6
Actuated g/C Ratio	0.07	0.21	0.21	0.18	0.34	0.34	0.08	0.26	0.26	0.41	0.29	0.29
v/c Ratio	0.39	0.90	0.23	1.16	0.46	0.09	0.36	0.33	0.77	0.52	0.97	0.68
Control Delay	48.1	50.6	1.3	125.6	26.6	0.3	47.2	29.2	16.9	22.5	52.7	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	50.6	1.3	125.6	26.6	0.3	47.2	29.2	16.9	22.5	52.7	14.0
LOS	D	D	A	F	C	A	D	C	B	C	D	B
Approach Delay		45.6			75.4			23.8			42.6	
Approach LOS		D			E			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	95
Actuated Cycle Length:	95
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.16
Intersection Signal Delay:	48.2
Intersection LOS:	D
Intersection Capacity Utilization	91.1%
ICU Level of Service	F
Analysis Period (min)	15

Splits and Phases: 6: Trafalgar Road & Steeles Avenue





Queues  
6: Trafalgar Road & Steeles Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	840	100	705	640	55	65	400	530	230	1390	330
v/c Ratio	0.39	0.90	0.23	1.16	0.46	0.09	0.36	0.33	0.77	0.52	0.97	0.68
Control Delay	48.1	50.6	1.3	125.6	26.6	0.3	47.2	29.2	16.9	22.5	52.7	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	50.6	1.3	125.6	26.6	0.3	47.2	29.2	16.9	22.5	52.7	14.0
Queue Length 50th (m)	7.2	58.2	0.0	-83.6	36.4	0.0	6.2	22.8	21.5	27.7	-109.7	5.6
Queue Length 95th (m)	14.6	#82.0	0.0	#119.4	48.2	0.0	13.0	32.1	66.1	45.1	#139.4	39.9
Internal Link Dist (m)		855.8			287.3			308.0			265.5	
Turn Bay Length (m)	115.0		40.0	130.0		70.0	100.0		65.0	250.0		80.0
Base Capacity (vph)	194	933	429	608	1392	609	180	1197	692	441	1435	483
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.90	0.23	1.16	0.46	0.09	0.36	0.33	0.77	0.52	0.97	0.68

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 6: Trafalgar Road & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	840	100	705	640	55	65	400	530	230	1390	330
Future Volume (vph)	75	840	100	705	640	55	65	400	530	230	1390	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Fr <sub>t</sub>	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2633	4433	1179	3400	4084	1455	2148	4550	1524	1752	4940	950
Fl <sub>t</sub> Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	2633	4433	1179	3400	4084	1455	2148	4550	1524	878	4940	950
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	75	840	100	705	640	55	65	400	530	230	1390	330
RTOR Reduction (vph)	0	0	78	0	0	36	0	0	295	0	0	213
Lane Group Flow (vph)	75	840	22	705	640	19	65	400	235	230	1390	117
Heavy Vehicles (%)	33%	17%	37%	3%	27%	11%	63%	14%	6%	3%	5%	70%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2	6		6
Actuated Green, G (s)	5.6	21.0	21.0	17.0	32.4	32.4	6.4	24.0	24.0	34.6	25.6	25.6
Effective Green, g (s)	5.6	21.0	21.0	17.0	32.4	32.4	6.4	24.0	24.0	34.6	25.6	25.6
Actuated g/C Ratio	0.06	0.22	0.22	0.18	0.34	0.34	0.07	0.25	0.25	0.36	0.27	0.27
Clearance Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	0.2	0.2	3.0	0.2	0.2
Lane Grp Cap (vph)	155	979	260	608	1392	496	144	1149	385	402	1331	256
v/s Ratio Prot	0.03	c0.19		c0.21	0.16		0.03	0.09		c0.05	c0.28	
v/s Ratio Perm			0.02			0.01			0.15	0.15		0.12
v/c Ratio	0.48	0.86	0.09	1.16	0.46	0.04	0.45	0.35	0.61	0.57	1.04	0.46
Uniform Delay, d <sub>1</sub>	43.3	35.6	29.4	39.0	24.5	20.9	42.6	29.1	31.4	22.1	34.7	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d <sub>2</sub>	2.4	7.6	0.1	89.1	0.2	0.0	3.0	0.8	7.0	2.0	37.1	5.8
Delay (s)	45.7	43.1	29.5	128.1	24.7	20.9	45.7	29.9	38.4	24.1	71.8	34.7
Level of Service	D	D	C	F	C	C	D	C	D	C	E	C
Approach Delay (s)		42.0			76.6			35.5			59.9	
Approach LOS		D			E			D			E	

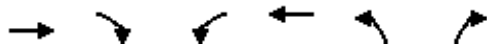
### Intersection Summary

HCM 2000 Control Delay	56.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

# Lanes, Volumes, Timings

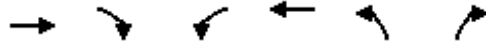
## 7: Toronto Premier Outlets & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖↗	↗
Traffic Volume (vph)	1535	10	10	1380	35	10
Future Volume (vph)	1535	10	10	1380	35	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		130.0	45.0		0.0	40.0
Storage Lanes		1	1		2	1
Taper Length (m)			80.0		7.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4848	1615	1543	4590	3045	1615
Flt Permitted			0.124		0.950	
Satd. Flow (perm)	4848	1615	201	4590	3045	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		10				10
Link Speed (k/h)	60			60	50	
Link Distance (m)	311.3			200.7	119.1	
Travel Time (s)	18.7			12.0	8.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	0%	17%	13%	15%	0%
Adj. Flow (vph)	1535	10	10	1380	35	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1535	10	10	1380	35	10
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4	8			2
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	20.0	20.0	6.0	20.0	10.0	10.0

Lanes, Volumes, Timings  
7: Toronto Premier Outlets & Steeles Avenue

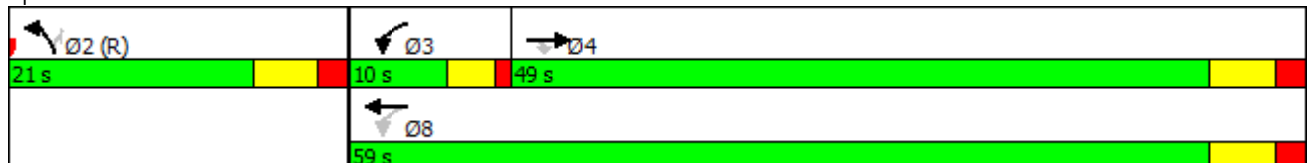


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	26.0	26.0	10.0	26.0	17.0	17.0
Total Split (s)	49.0	49.0	10.0	59.0	21.0	21.0
Total Split (%)	61.3%	61.3%	12.5%	73.8%	26.3%	26.3%
Maximum Green (s)	43.0	43.0	6.0	53.0	15.0	15.0
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	0.2	0.2	3.0	0.2	4.0	4.0
Recall Mode	Max	Max	None	Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	51.0	51.0	55.0	53.0	15.0	15.0
Actuated g/C Ratio	0.64	0.64	0.69	0.66	0.19	0.19
v/c Ratio	0.50	0.01	0.04	0.45	0.06	0.03
Control Delay	8.9	4.2	4.3	7.1	27.1	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	4.2	4.3	7.1	27.1	15.1
LOS	A	A	A	A	C	B
Approach Delay	8.9			7.1	24.5	
Approach LOS	A			A	C	

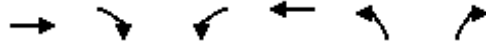
Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	8.3
Intersection Capacity Utilization	48.0%
Analysis Period (min)	15
Intersection LOS:	A
ICU Level of Service	A

Splits and Phases: 7: Toronto Premier Outlets & Steeles Avenue



Queues  
7: Toronto Premier Outlets & Steeles Avenue

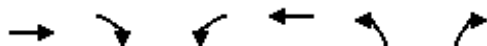


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1535	10	10	1380	35	10
v/c Ratio	0.50	0.01	0.04	0.45	0.06	0.03
Control Delay	8.9	4.2	4.3	7.1	27.1	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	4.2	4.3	7.1	27.1	15.1
Queue Length 50th (m)	38.4	0.0	0.4	33.8	2.3	0.0
Queue Length 95th (m)	70.4	2.2	1.8	42.5	6.2	4.2
Internal Link Dist (m)	287.3			176.7	95.1	
Turn Bay Length (m)		130.0	45.0			40.0
Base Capacity (vph)	3090	1033	238	3040	570	310
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.01	0.04	0.45	0.06	0.03
<b>Intersection Summary</b>						

# HCM Signalized Intersection Capacity Analysis

## 7: Toronto Premier Outlets & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↖	↗
Traffic Volume (vph)	1535	10	10	1380	35	10
Future Volume (vph)	1535	10	10	1380	35	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	4.0	6.0	6.0	6.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	4848	1615	1543	4590	3045	1615
Flt Permitted	1.00	1.00	0.12	1.00	0.95	1.00
Satd. Flow (perm)	4848	1615	202	4590	3045	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1535	10	10	1380	35	10
RTOR Reduction (vph)	0	4	0	0	0	9
Lane Group Flow (vph)	1535	6	10	1380	35	1
Heavy Vehicles (%)	7%	0%	17%	13%	15%	0%
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	51.0	51.0	56.2	56.2	11.8	11.8
Effective Green, g (s)	51.0	51.0	56.2	56.2	11.8	11.8
Actuated g/C Ratio	0.64	0.64	0.70	0.70	0.15	0.15
Clearance Time (s)	6.0	6.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	0.2	0.2	3.0	0.2	4.0	4.0
Lane Grp Cap (vph)	3090	1029	162	3224	449	238
v/s Ratio Prot	c0.32		0.00	c0.30	c0.01	
v/s Ratio Perm		0.00	0.04			0.00
v/c Ratio	0.50	0.01	0.06	0.43	0.08	0.01
Uniform Delay, d1	7.7	5.3	4.4	5.1	29.4	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	0.2	0.4	0.3	0.0
Delay (s)	8.3	5.3	4.5	5.5	29.7	29.1
Level of Service	A	A	A	A	C	C
Approach Delay (s)	8.2			5.5	29.6	
Approach LOS	A			A	C	

### Intersection Summary

HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1410	20	45	855	35	5	5	15	280	10	555
Future Volume (vph)	120	1410	20	45	855	35	5	5	15	280	10	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		55.0	30.0		30.0	0.0		0.0	85.0		0.0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (m)	55.0			90.0			7.5			45.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>			0.850			0.850		0.887			0.853	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	4673	1404	1752	4287	1482	2633	1536	0	1787	1605	0
Fl <sub>t</sub> Permitted	0.231			0.117			0.950			0.744		
Satd. Flow (perm)	418	4673	1404	216	4287	1482	2633	1536	0	1400	1605	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164			164		15			384	
Link Speed (k/h)		60			60			50			70	
Link Distance (m)		200.7			870.8			218.1			3086.4	
Travel Time (s)		12.0			52.2			15.7			158.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	11%	15%	3%	21%	9%	33%	0%	13%	1%	0%	1%
Adj. Flow (vph)	120	1410	20	45	855	35	5	5	15	280	10	555
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1410	20	45	855	35	5	20	0	280	565	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			7.2			7.2	
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
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2				6
Permitted Phases	4		4	8		8				6		
Detector Phase	7	4	4	3	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		10.0	10.0	

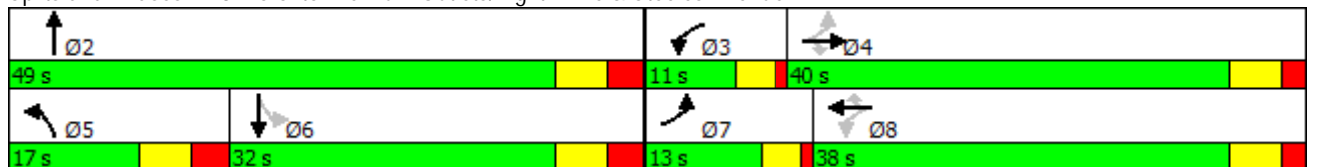


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	26.0	26.0	11.0	26.0	26.0	17.0	17.0		17.0	17.0	
Total Split (s)	13.0	40.0	40.0	11.0	38.0	38.0	17.0	49.0		32.0	32.0	
Total Split (%)	13.0%	40.0%	40.0%	11.0%	38.0%	38.0%	17.0%	49.0%		32.0%	32.0%	
Maximum Green (s)	9.0	34.0	34.0	7.0	32.0	32.0	10.0	42.0		25.0	25.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	0.2	0.2	3.0	0.2	0.2	4.0	4.0		3.0	3.0	
Recall Mode	None	Max	Max	None	Max	Max	None	None		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0				
Flash Dont Walk (s)		17.0	17.0		17.0	17.0		21.0				
Pedestrian Calls (#/hr)		0	0		0	0		0				
Act Effct Green (s)	45.3	38.2	38.2	41.4	32.4	32.4	10.1	28.1		25.2	25.2	
Actuated g/C Ratio	0.53	0.45	0.45	0.48	0.38	0.38	0.12	0.33		0.29	0.29	
v/c Ratio	0.35	0.68	0.03	0.20	0.53	0.05	0.02	0.04		0.68	0.76	
Control Delay	13.8	23.1	0.1	13.1	23.2	0.1	37.0	10.7		38.4	17.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	13.8	23.1	0.1	13.1	23.2	0.1	37.0	10.7		38.4	17.3	
LOS	B	C	A	B	C	A	D	B		D	B	
Approach Delay		22.1			21.8			15.9			24.3	
Approach LOS		C			C			B			C	

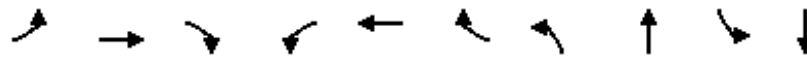
Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	85.8
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	22.5
Intersection LOS:	C
Intersection Capacity Utilization:	82.1%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 8: Toronto Premium Outlets/Eighth Line & Steeles Avenue







Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	1410	20	45	855	35	5	20	280	565
v/c Ratio	0.35	0.68	0.03	0.20	0.53	0.05	0.02	0.04	0.68	0.76
Control Delay	13.8	23.1	0.1	13.1	23.2	0.1	37.0	10.7	38.4	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	23.1	0.1	13.1	23.2	0.1	37.0	10.7	38.4	17.3
Queue Length 50th (m)	8.6	70.6	0.0	3.1	38.4	0.0	0.4	0.6	40.5	24.4
Queue Length 95th (m)	24.3	#120.9	0.0	11.1	68.4	0.0	2.3	5.1	#96.5	#96.5
Internal Link Dist (m)		176.7			846.8			194.1		3062.4
Turn Bay Length (m)	105.0		55.0	30.0		30.0			85.0	
Base Capacity (vph)	358	2080	715	230	1617	661	309	764	410	742
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.68	0.03	0.20	0.53	0.05	0.02	0.03	0.68	0.76

#### Intersection Summary

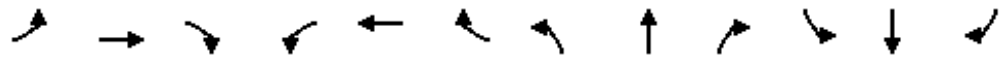
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

2031 Background AM

## 8: Toronto Premium Outlets/Eighth Line & Steeles Avenue Premier Gateway Phase 1B Employment Area

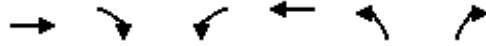


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1410	20	45	855	35	5	5	15	280	10	555
Future Volume (vph)	120	1410	20	45	855	35	5	5	15	280	10	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	4673	1404	1752	4287	1482	2633	1536		1787	1604	
Flt Permitted	0.23	1.00	1.00	0.12	1.00	1.00	0.95	1.00		0.74	1.00	
Satd. Flow (perm)	419	4673	1404	216	4287	1482	2633	1536		1400	1604	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	1410	20	45	855	35	5	5	15	280	10	555
RTOR Reduction (vph)	0	0	12	0	0	22	0	10	0	0	280	0
Lane Group Flow (vph)	120	1410	8	45	855	13	5	10	0	280	285	0
Heavy Vehicles (%)	5%	11%	15%	3%	21%	9%	33%	0%	13%	1%	0%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2				6
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)	46.3	38.2	38.2	38.2	34.1	34.1	1.7	33.9		25.2	25.2	
Effective Green, g (s)	46.3	38.2	38.2	38.2	34.1	34.1	1.7	33.9		25.2	25.2	
Actuated g/C Ratio	0.50	0.41	0.41	0.41	0.37	0.37	0.02	0.36		0.27	0.27	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	0.2	0.2	3.0	0.2	0.2	4.0	4.0		3.0	3.0	
Lane Grp Cap (vph)	322	1915	575	156	1568	542	48	558		378	433	
v/s Ratio Prot	c0.03	c0.30		0.01	0.20		c0.00	0.01				0.18
v/s Ratio Perm	0.15		0.01	0.11		0.01				c0.20		
v/c Ratio	0.37	0.74	0.01	0.29	0.55	0.02	0.10	0.02		0.74	0.66	
Uniform Delay, d1	13.4	23.2	16.3	17.6	23.4	18.9	45.0	19.0		31.0	30.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	2.6	0.0	1.0	1.4	0.1	1.3	0.0		12.3	7.6	
Delay (s)	14.2	25.8	16.4	18.6	24.8	19.0	46.3	19.0		43.3	37.8	
Level of Service	B	C	B	B	C	B	D	B		D	D	
Approach Delay (s)		24.8			24.3			24.5			39.6	
Approach LOS		C			C			C			D	

### Intersection Summary

HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
 9: Eighth Line South & Steeles Avenue

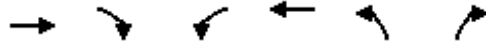


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑↑	↵	↵
Traffic Volume (vph)	1705	5	5	935	5	0
Future Volume (vph)	1705	5	5	935	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	90.0		30.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt						
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4717	0	1805	4359	1805	1900
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4717	0	1805	4359	1805	1900
Link Speed (k/h)	70			70	50	
Link Distance (m)	870.8			525.4	458.2	
Travel Time (s)	44.8			27.0	33.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	0%	0%	19%	0%	0%
Adj. Flow (vph)	1705	5	5	935	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1710	0	5	935	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.1% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 9: Eighth Line South & Steeles Avenue

2031 Background AM  
 Premier Gateway Phase 1B Employment Area

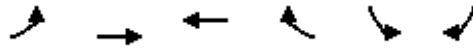


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑↑	↵	↵
Traffic Volume (veh/h)	1705	5	5	935	5	0
Future Volume (Veh/h)	1705	5	5	935	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1705	5	5	935	5	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			1710		2029	571
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1710		2029	571
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		90	100
cM capacity (veh/h)			376		50	469

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	682	682	346	5	312	312	312	5	0
Volume Left	0	0	0	5	0	0	0	5	0
Volume Right	0	0	5	0	0	0	0	0	0
cSH	1700	1700	1700	376	1700	1700	1700	50	1700
Volume to Capacity	0.40	0.40	0.20	0.01	0.18	0.18	0.18	0.10	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.3	0.0	0.0	0.0	2.5	0.0
Control Delay (s)	0.0	0.0	0.0	14.7	0.0	0.0	0.0	84.2	0.0
Lane LOS				B				F	A
Approach Delay (s)	0.0			0.1				84.2	
Approach LOS								F	

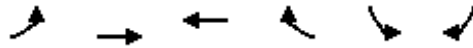
Intersection Summary										
Average Delay			0.2							
Intersection Capacity Utilization			43.1%		ICU Level of Service				A	
Analysis Period (min)			15							

Lanes, Volumes, Timings  
10: Steeles Avenue & Ninth Line



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	120	1620	860	335	890	115
Future Volume (vph)	120	1620	860	335	890	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0			75.0	90.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	100.0				40.0	
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1556	4759	4396	1509	3433	1324
Flt Permitted	0.239				0.950	
Satd. Flow (perm)	391	4759	4396	1509	3433	1324
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				335		115
Link Speed (k/h)		70	70		70	
Link Distance (m)		525.4	169.8		3120.2	
Travel Time (s)		27.0	8.7		160.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	16%	9%	18%	7%	2%	22%
Adj. Flow (vph)	120	1620	860	335	890	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	1620	860	335	890	115
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		7.2	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	10.0	10.0

Lanes, Volumes, Timings  
10: Steeles Avenue & Ninth Line

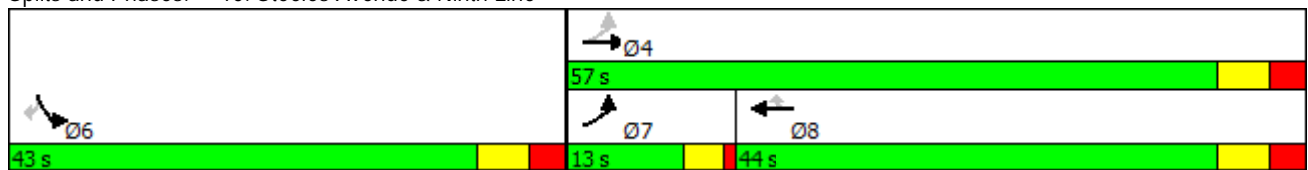


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	11.0	27.0	27.0	27.0	17.0	17.0
Total Split (s)	13.0	57.0	44.0	44.0	43.0	43.0
Total Split (%)	13.0%	57.0%	44.0%	44.0%	43.0%	43.0%
Maximum Green (s)	9.0	50.0	37.0	37.0	36.0	36.0
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead		Lag		Lag	
Lead-Lag Optimize?	Yes		Yes		Yes	
Vehicle Extension (s)	3.0	0.2	0.2	0.2	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max
Act Effect Green (s)	53.0	50.0	37.6	37.6	36.0	36.0
Actuated g/C Ratio	0.53	0.50	0.38	0.38	0.36	0.36
v/c Ratio	0.39	0.68	0.52	0.43	0.72	0.21
Control Delay	16.0	20.8	25.8	4.4	31.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	20.8	25.8	4.4	31.7	5.2
LOS	B	C	C	A	C	A
Approach Delay	20.5		19.8		28.7	
Approach LOS	C		B		C	

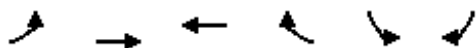
Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Natural Cycle:	60
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	22.3
Intersection LOS:	C
Intersection Capacity Utilization	68.4%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 10: Steeles Avenue & Ninth Line



Queues  
10: Steeles Avenue & Ninth Line



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	120	1620	860	335	890	115
v/c Ratio	0.39	0.68	0.52	0.43	0.72	0.21
Control Delay	16.0	20.8	25.8	4.4	31.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	20.8	25.8	4.4	31.7	5.2
Queue Length 50th (m)	11.9	88.0	49.5	0.0	79.7	0.0
Queue Length 95th (m)	21.5	105.1	62.7	17.9	102.7	11.6
Internal Link Dist (m)		501.4	145.8		3096.2	
Turn Bay Length (m)	65.0			75.0	90.0	
Base Capacity (vph)	312	2379	1651	775	1235	550
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.68	0.52	0.43	0.72	0.21
<b>Intersection Summary</b>						

# HCM Signalized Intersection Capacity Analysis

## 10: Steeles Avenue & Ninth Line

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	120	1620	860	335	890	115
Future Volume (vph)	120	1620	860	335	890	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1556	4759	4396	1509	3433	1324
Flt Permitted	0.24	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	392	4759	4396	1509	3433	1324
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	1620	860	335	890	115
RTOR Reduction (vph)	0	0	0	209	0	74
Lane Group Flow (vph)	120	1620	860	126	890	41
Heavy Vehicles (%)	16%	9%	18%	7%	2%	22%
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	50.0	50.0	37.6	37.6	36.0	36.0
Effective Green, g (s)	50.0	50.0	37.6	37.6	36.0	36.0
Actuated g/C Ratio	0.50	0.50	0.38	0.38	0.36	0.36
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	0.2	0.2	0.2	3.0	3.0
Lane Grp Cap (vph)	293	2379	1652	567	1235	476
v/s Ratio Prot	0.03	c0.34	0.20		c0.26	
v/s Ratio Perm	0.17			0.08		0.03
v/c Ratio	0.41	0.68	0.52	0.22	0.72	0.09
Uniform Delay, d1	14.2	19.0	24.2	21.2	27.7	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.6	1.2	0.9	3.7	0.4
Delay (s)	15.2	20.6	25.4	22.1	31.3	21.5
Level of Service	B	C	C	C	C	C
Approach Delay (s)		20.2	24.5		30.2	
Approach LOS		C	C		C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			24.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.73			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			68.4%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						



Lanes, Volumes, Timings  
11: Trafalgar Rd & Hornby Rd



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	10	5	480	1850	30
Future Volume (vph)	20	10	5	480	1850	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.955				0.998	
Flt Protected	0.968			0.999		
Satd. Flow (prot)	1436	0	0	3100	3434	0
Flt Permitted	0.968			0.999		
Satd. Flow (perm)	1436	0	0	3100	3434	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	54.4			135.9	215.8	
Travel Time (s)	3.3			6.1	9.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	17%	50%	16%	5%	0%
Adj. Flow (vph)	20	10	5	480	1850	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	0	0	485	1880	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.1%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 11: Trafalgar Rd & Hornby Rd

2031 Background AM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	10	5	480	1850	30
Future Volume (Veh/h)	20	10	5	480	1850	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	20	10	5	480	1850	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2115	940	1850			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2115	940	1850			
tC, single (s)	7.3	7.2	5.1			
tC, 2 stage (s)						
tF (s)	3.8	3.5	2.7			
p0 queue free %	37	96	97			
cM capacity (veh/h)	32	238	179			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	30	165	320	1233	647	
Volume Left	20	5	0	0	0	
Volume Right	10	0	0	0	30	
cSH	45	179	1700	1700	1700	
Volume to Capacity	0.67	0.03	0.19	0.73	0.38	
Queue Length 95th (m)	20.5	0.7	0.0	0.0	0.0	
Control Delay (s)	184.8	1.5	0.0	0.0	0.0	
Lane LOS	F	A				
Approach Delay (s)	184.8	0.5		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			62.1%	ICU Level of Service	B	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
12: Fifth Line & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	20	885	20	35	255	5	10	35	30	60	75	40
Future Volume (vph)	20	885	20	35	255	5	10	35	30	60	75	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.998			0.946			0.969	
Flt Protected		0.999			0.994			0.993			0.983	
Satd. Flow (prot)	0	1849	0	0	1786	0	0	1530	0	0	1727	0
Flt Permitted		0.999			0.994			0.993			0.983	
Satd. Flow (perm)	0	1849	0	0	1786	0	0	1530	0	0	1727	0
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		320.1			648.3			2473.7			211.2	
Travel Time (s)		19.2			38.9			127.2			10.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	9%	10%	5%	0%	25%	20%	10%	9%	4%	0%
Adj. Flow (vph)	20	885	20	35	255	5	10	35	30	60	75	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	925	0	0	295	0	0	75	0	0	175	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	74.5%
ICU Level of Service	D
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 12: Fifth Line & 5 Side Road

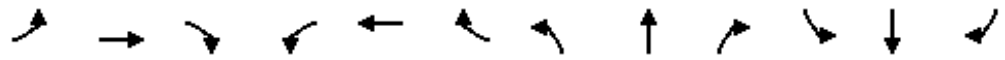
2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	20	885	20	35	255	5	10	35	30	60	75	40
Future Volume (Veh/h)	20	885	20	35	255	5	10	35	30	60	75	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	20	885	20	35	255	5	10	35	30	60	75	40
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	260			905			1340	1265	895	1310	1272	258
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	260			905			1340	1265	895	1310	1272	258
tC, single (s)	4.2			4.2			7.3	6.7	6.3	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.7	4.2	3.4	3.6	4.0	3.3
p0 queue free %	98			95			85	76	91	35	52	95
cM capacity (veh/h)	1259			719			65	146	328	93	155	786
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	925	295	75	175								
Volume Left	20	35	10	60								
Volume Right	20	5	30	40								
cSH	1259	719	155	148								
Volume to Capacity	0.02	0.05	0.48	1.18								
Queue Length 95th (m)	0.4	1.2	18.3	79.5								
Control Delay (s)	0.4	1.7	48.3	190.4								
Lane LOS	A	A	E	F								
Approach Delay (s)	0.4	1.7	48.3	190.4								
Approach LOS			E	F								
<b>Intersection Summary</b>												
Average Delay			25.7									
Intersection Capacity Utilization			74.5%		ICU Level of Service				D			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
13: Sixth Line & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	710	230	15	255	5	20	15	50	35	30	25
Future Volume (vph)	15	710	230	15	255	5	20	15	50	35	30	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.967			0.998			0.921			0.962	
Flt Protected		0.999			0.997			0.988			0.981	
Satd. Flow (prot)	0	1787	0	0	1796	0	0	1572	0	0	1726	0
Flt Permitted		0.999			0.997			0.988			0.981	
Satd. Flow (perm)	0	1787	0	0	1796	0	0	1572	0	0	1726	0
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		620.4			640.8			3066.1			190.9	
Travel Time (s)		37.2			38.4			157.7			9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	14%	3%	1%	0%	5%	33%	0%	0%	17%	10%	0%	0%
Adj. Flow (vph)	15	710	230	15	255	5	20	15	50	35	30	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	955	0	0	275	0	0	85	0	0	90	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	71.2%
ICU Level of Service	C
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 13: Sixth Line & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	15	710	230	15	255	5	20	15	50	35	30	25
Future Volume (Veh/h)	15	710	230	15	255	5	20	15	50	35	30	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	710	230	15	255	5	20	15	50	35	30	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	260			940			1182	1145	825	1200	1258	258
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	260			940			1182	1145	825	1200	1258	258
tC, single (s)	4.2			4.1			7.1	6.5	6.4	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.5	3.6	4.0	3.3
p0 queue free %	99			98			85	92	86	72	82	97
cM capacity (veh/h)	1238			737			137	195	350	123	167	786
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	955	275	85	90								
Volume Left	15	15	20	35								
Volume Right	230	5	50	25								
cSH	1238	737	232	181								
Volume to Capacity	0.01	0.02	0.37	0.50								
Queue Length 95th (m)	0.3	0.5	12.7	19.5								
Control Delay (s)	0.3	0.8	29.2	43.0								
Lane LOS	A	A	D	E								
Approach Delay (s)	0.3	0.8	29.2	43.0								
Approach LOS			D	E								
<b>Intersection Summary</b>												
Average Delay			4.9									
Intersection Capacity Utilization			71.2%		ICU Level of Service				C			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
14: Trafalgar Rd & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	550	150	90	150	15	10	500	50	45	1705	50
Future Volume (vph)	55	550	150	90	150	15	10	500	50	45	1705	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		40.0	40.0		0.0	40.0		0.0	50.0		20.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	80.0			80.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.986			0.986				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3539	1568	1687	3338	0	1444	2860	0	1480	3374	1292
Flt Permitted	0.648			0.227			0.091			0.397		
Satd. Flow (perm)	1130	3539	1568	403	3338	0	138	2860	0	618	3374	1292
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			150		10			16				133
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		223.8			665.2			264.1			262.0	
Travel Time (s)		13.4			39.9			11.9			11.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	2%	3%	7%	1%	63%	25%	25%	19%	22%	7%	25%
Adj. Flow (vph)	55	550	150	90	150	15	10	500	50	45	1705	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	550	150	90	165	0	10	550	0	45	1705	50
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
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	7	4	4	3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		7.0	25.0		7.0	25.0	25.0

Lanes, Volumes, Timings  
14: Trafalgar Rd & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	9.0	22.0	22.0	9.0	22.0		11.0	32.0		11.0	32.0	32.0
Total Split (s)	9.0	22.0	22.0	9.0	22.0		11.0	48.0		11.0	48.0	48.0
Total Split (%)	10.0%	24.4%	24.4%	10.0%	24.4%		12.2%	53.3%		12.2%	53.3%	53.3%
Maximum Green (s)	5.0	16.0	16.0	5.0	16.0		7.0	42.0		7.0	42.0	42.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0		3.0	5.0	5.0
Recall Mode	None	None	None	None	None		None	Max		None	Max	Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0			20.0			20.0	20.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	21.8	15.9	15.9	22.7	17.8		48.4	42.5		49.9	46.6	46.6
Actuated g/C Ratio	0.26	0.19	0.19	0.27	0.21		0.58	0.51		0.60	0.56	0.56
v/c Ratio	0.17	0.82	0.36	0.48	0.23		0.05	0.38		0.10	0.91	0.06
Control Delay	23.9	45.1	8.5	32.8	28.9		7.6	14.5		7.7	26.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	23.9	45.1	8.5	32.8	28.9		7.6	14.5		7.7	26.7	0.2
LOS	C	D	A	C	C		A	B		A	C	A
Approach Delay		36.3			30.3			14.3			25.5	
Approach LOS		D			C			B			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	83.6
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	26.4
Intersection LOS:	C
Intersection Capacity Utilization:	80.7%
ICU Level of Service:	D
Analysis Period (min):	15

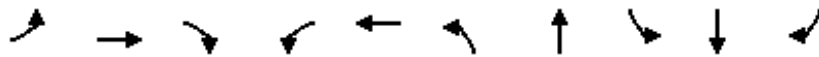
Splits and Phases: 14: Trafalgar Rd & 5 Side Road

Ø1	Ø2	Ø3	Ø4
11 s	48 s	9 s	22 s
Ø5	Ø6	Ø7	Ø8
11 s	48 s	9 s	22 s



Queues  
14: Trafalgar Rd & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	55	550	150	90	165	10	550	45	1705	50
v/c Ratio	0.17	0.82	0.36	0.48	0.23	0.05	0.38	0.10	0.91	0.06
Control Delay	23.9	45.1	8.5	32.8	28.9	7.6	14.5	7.7	26.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	45.1	8.5	32.8	28.9	7.6	14.5	7.7	26.7	0.2
Queue Length 50th (m)	7.2	51.8	0.0	12.1	12.9	0.7	32.3	3.0	125.1	0.0
Queue Length 95th (m)	16.2	#80.5	16.0	24.0	22.3	2.6	45.6	7.2	#228.4	0.0
Internal Link Dist (m)		199.8			641.2		240.1		238.0	
Turn Bay Length (m)	40.0		40.0	40.0		40.0		50.0		20.0
Base Capacity (vph)	326	685	424	187	729	190	1461	441	1878	778
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.80	0.35	0.48	0.23	0.05	0.38	0.10	0.91	0.06

Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 14: Trafalgar Rd & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	550	150	90	150	15	10	500	50	45	1705	50
Future Volume (vph)	55	550	150	90	150	15	10	500	50	45	1705	50
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	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	3539	1568	1687	3339		1444	2861		1480	3374	1292
Flt Permitted	0.65	1.00	1.00	0.23	1.00		0.09	1.00		0.40	1.00	1.00
Satd. Flow (perm)	1129	3539	1568	403	3339		138	2861		619	3374	1292
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	55	550	150	90	150	15	10	500	50	45	1705	50
RTOR Reduction (vph)	0	0	122	0	8	0	0	8	0	0	0	24
Lane Group Flow (vph)	55	550	28	90	157	0	10	542	0	45	1705	26
Heavy Vehicles (%)	9%	2%	3%	7%	1%	63%	25%	25%	19%	22%	7%	25%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	19.6	16.8	16.8	21.6	17.8		45.3	44.0		50.5	46.6	46.6
Effective Green, g (s)	19.6	16.8	16.8	21.6	17.8		45.3	44.0		50.5	46.6	46.6
Actuated g/C Ratio	0.22	0.19	0.19	0.24	0.20		0.51	0.50		0.57	0.53	0.53
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0		3.0	5.0	5.0
Lane Grp Cap (vph)	266	671	297	153	671		89	1422		391	1776	680
v/s Ratio Prot	0.01	c0.16		c0.03	0.05		0.00	0.19		c0.01	c0.51	
v/s Ratio Perm	0.04		0.02	0.12			0.06			0.06		0.02
v/c Ratio	0.21	0.82	0.10	0.59	0.23		0.11	0.38		0.12	0.96	0.04
Uniform Delay, d1	27.7	34.4	29.6	27.2	29.6		16.9	13.8		8.6	20.1	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	8.7	0.3	5.7	0.4		0.6	0.8		0.1	13.8	0.1
Delay (s)	28.1	43.1	29.9	32.9	30.0		17.5	14.6		8.7	33.8	10.2
Level of Service	C	D	C	C	C		B	B		A	C	B
Approach Delay (s)		39.4			31.0			14.6			32.6	
Approach LOS		D			C			B			C	

### Intersection Summary

HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	88.5	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			

Lanes, Volumes, Timings  
15: Eighth Line & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	25	565	15	50	180	20	5	135	40	105	775	105
Future Volume (vph)	25	565	15	50	180	20	5	135	40	105	775	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Fr <sub>t</sub>		0.996			0.988			0.970			0.986	
Fl <sub>t</sub> Protected		0.998			0.990			0.999			0.995	
Satd. Flow (prot)	0	3492	0	0	3389	0	0	1811	0	0	1862	0
Fl <sub>t</sub> Permitted		0.930			0.649			0.978			0.941	
Satd. Flow (perm)	0	3254	0	0	2221	0	0	1773	0	0	1761	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			11			34			14	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		643.4			668.7			3086.4			454.5	
Travel Time (s)		38.6			40.1			158.7			23.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	13%	2%	14%	7%	3%	8%	0%	1%	4%	0%	0%	1%
Adj. Flow (vph)	25	565	15	50	180	20	5	135	40	105	775	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	0	0	250	0	0	180	0	0	985	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			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
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	24.0	24.0		24.0	24.0		51.0	51.0		51.0	51.0	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%		68.0%	68.0%	

Lanes, Volumes, Timings  
15: Eighth Line & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	18.0	18.0		18.0	18.0		45.0	45.0		45.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.2			17.2			45.0			45.0	
Actuated g/C Ratio		0.23			0.23			0.61			0.61	
v/c Ratio		0.80			0.48			0.17			0.92	
Control Delay		36.1			27.0			5.7			28.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		36.1			27.0			5.7			28.7	
LOS		D			C			A			C	
Approach Delay		36.1			27.0			5.7			28.7	
Approach LOS		D			C			A			C	

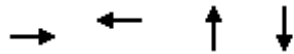
Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	74.2
Natural Cycle:	75
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	28.7
Intersection LOS:	C
Intersection Capacity Utilization:	114.8%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 15: Eighth Line & 5 Side Road



Queues  
15: Eighth Line & 5 Side Road



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	605	250	180	985
v/c Ratio	0.80	0.48	0.17	0.92
Control Delay	36.1	27.0	5.7	28.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	36.1	27.0	5.7	28.7
Queue Length 50th (m)	44.1	16.0	8.5	117.4
Queue Length 95th (m)	#64.3	27.0	16.7	#214.4
Internal Link Dist (m)	619.4	644.7	3062.4	430.5
Turn Bay Length (m)				
Base Capacity (vph)	792	547	1089	1074
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.76	0.46	0.17	0.92

Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 15: Eighth Line & 5 Side Road

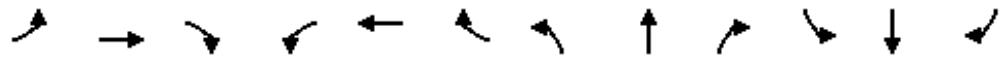
2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	25	565	15	50	180	20	5	135	40	105	775	105
Future Volume (vph)	25	565	15	50	180	20	5	135	40	105	775	105
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			0.99			0.97			0.99	
Flt Protected		1.00			0.99			1.00			0.99	
Satd. Flow (prot)		3493			3389			1811			1861	
Flt Permitted		0.93			0.65			0.98			0.94	
Satd. Flow (perm)		3254			2222			1773			1761	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	25	565	15	50	180	20	5	135	40	105	775	105
RTOR Reduction (vph)	0	2	0	0	8	0	0	13	0	0	6	0
Lane Group Flow (vph)	0	603	0	0	242	0	0	167	0	0	979	0
Heavy Vehicles (%)	13%	2%	14%	7%	3%	8%	0%	1%	4%	0%	0%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.2			17.2			45.0			45.0	
Effective Green, g (s)		17.2			17.2			45.0			45.0	
Actuated g/C Ratio		0.23			0.23			0.61			0.61	
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)		754			515			1075			1067	
v/s Ratio Prot												
v/s Ratio Perm		c0.19			0.11			0.09			c0.56	
v/c Ratio		0.80			0.47			0.15			0.92	
Uniform Delay, d1		26.9			24.6			6.3			13.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.9			0.7			0.3			13.8	
Delay (s)		32.8			25.2			6.6			26.7	
Level of Service		C			C			A			C	
Approach Delay (s)		32.8			25.2			6.6			26.7	
Approach LOS		C			C			A			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		26.6			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.88										
Actuated Cycle Length (s)		74.2			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		114.8%			ICU Level of Service			H				
Analysis Period (min)		15										
c Critical Lane Group												

Lanes, Volumes, Timings  
16: Ninth Line & 5 Side Road

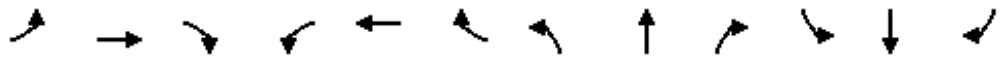
2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	700	45	5	175	20	15	475	35	415	1015	45
Future Volume (vph)	35	700	45	5	175	20	15	475	35	415	1015	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	40.0		40.0	40.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.991				0.850		0.990			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	3436	0	1805	3539	1615	1289	3215	0	1805	3388	0
Flt Permitted	0.641			0.203			0.270			0.349		
Satd. Flow (perm)	1107	3436	0	386	3539	1615	366	3215	0	663	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				95		9			9	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		580.9			458.3			3120.2			329.9	
Travel Time (s)		34.9			27.5			160.5			17.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	4%	6%	0%	2%	0%	40%	12%	0%	0%	6%	4%
Adj. Flow (vph)	35	700	45	5	175	20	15	475	35	415	1015	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	745	0	5	175	20	15	510	0	415	1060	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
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0	15.0	15.0	15.0		7.0	20.0	

Lanes, Volumes, Timings  
16: Ninth Line & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area

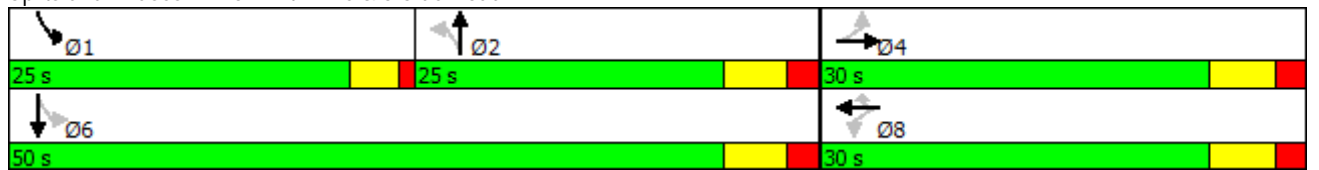


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	21.0	21.0		11.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	25.0	25.0		25.0	50.0	
Total Split (%)	37.5%	37.5%		37.5%	37.5%	37.5%	31.3%	31.3%		31.3%	62.5%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	19.0	19.0		21.0	44.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	5.5	5.5		3.0	5.5	
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Walk Time (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	21.4	21.4		21.4	21.4	21.4	24.9	24.9		46.1	44.1	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28	0.32	0.32		0.59	0.57	
v/c Ratio	0.11	0.78		0.05	0.18	0.04	0.13	0.49		0.67	0.55	
Control Delay	21.7	32.0		21.4	21.6	0.1	26.5	24.5		14.8	12.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	21.7	32.0		21.4	21.6	0.1	26.5	24.5		14.8	12.1	
LOS	C	C		C	C	A	C	C		B	B	
Approach Delay		31.5			19.4			24.6			12.9	
Approach LOS		C			B			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	77.5
Natural Cycle:	60
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	20.3
Intersection LOS:	C
Intersection Capacity Utilization:	86.1%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 16: Ninth Line & 5 Side Road





Queues  
16: Ninth Line & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	745	5	175	20	15	510	415	1060
v/c Ratio	0.11	0.78	0.05	0.18	0.04	0.13	0.49	0.67	0.55
Control Delay	21.7	32.0	21.4	21.6	0.1	26.5	24.5	14.8	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	32.0	21.4	21.6	0.1	26.5	24.5	14.8	12.1
Queue Length 50th (m)	4.0	55.0	0.6	10.7	0.0	1.7	33.5	32.3	51.8
Queue Length 95th (m)	10.9	75.1	3.2	18.4	0.0	7.4	55.0	52.7	71.3
Internal Link Dist (m)		556.9		434.3			3096.2		305.9
Turn Bay Length (m)	40.0		40.0		40.0	40.0		40.0	
Base Capacity (vph)	343	1071	119	1097	566	117	1040	704	1930
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.70	0.04	0.16	0.04	0.13	0.49	0.59	0.55
<b>Intersection Summary</b>									

# HCM Signalized Intersection Capacity Analysis

## 16: Ninth Line & 5 Side Road

2031 Background AM  
Premier Gateway Phase 1B Employment Area

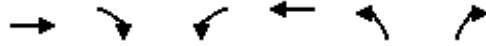


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	
Traffic Volume (vph)	35	700	45	5	175	20	15	475	35	415	1015	45
Future Volume (vph)	35	700	45	5	175	20	15	475	35	415	1015	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	3436		1805	3539	1615	1289	3214		1805	3387	
Flt Permitted	0.64	1.00		0.20	1.00	1.00	0.27	1.00		0.35	1.00	
Satd. Flow (perm)	1108	3436		386	3539	1615	366	3214		663	3387	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	700	45	5	175	20	15	475	35	415	1015	45
RTOR Reduction (vph)	0	6	0	0	0	14	0	6	0	0	4	0
Lane Group Flow (vph)	35	739	0	5	175	6	15	504	0	415	1056	0
Heavy Vehicles (%)	10%	4%	6%	0%	2%	0%	40%	12%	0%	0%	6%	4%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	21.4	21.4		21.4	21.4	21.4	25.0	25.0		44.1	44.1	
Effective Green, g (s)	21.4	21.4		21.4	21.4	21.4	25.0	25.0		44.1	44.1	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28	0.32	0.32		0.57	0.57	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	5.5	5.5		3.0	5.5	
Lane Grp Cap (vph)	305	948		106	977	445	118	1036		599	1927	
v/s Ratio Prot		c0.22			0.05			0.16		c0.13	0.31	
v/s Ratio Perm	0.03			0.01		0.00	0.04			c0.26		
v/c Ratio	0.11	0.78		0.05	0.18	0.01	0.13	0.49		0.69	0.55	
Uniform Delay, d1	21.0	25.9		20.6	21.4	20.4	18.5	21.1		10.0	10.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	4.2		0.2	0.1	0.0	2.2	1.6		3.5	1.1	
Delay (s)	21.2	30.1		20.8	21.5	20.4	20.8	22.7		13.4	11.6	
Level of Service	C	C		C	C	C	C	C		B	B	
Approach Delay (s)		29.7			21.3			22.7			12.1	
Approach LOS		C			C			C			B	

### Intersection Summary

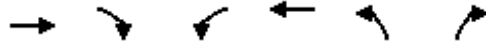
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
21: "Street D" & Steeles Avenue



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖↗	↑↑↑	↖↗	↗
Traffic Volume (vph)	1190	450	190	580	150	45
Future Volume (vph)	1190	450	190	580	150	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		50.0	50.0		0.0	0.0
Storage Lanes		1	2		2	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.91	1.00	0.97	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5085	1583	3433	5085	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5085	1583	3433	5085	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		450				45
Link Speed (k/h)	80			80	50	
Link Distance (m)	441.5			463.9	423.9	
Travel Time (s)	19.9			20.9	30.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1190	450	190	580	150	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1190	450	190	580	150	45
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5

Lanes, Volumes, Timings  
 21: "Street D" & Steeles Avenue

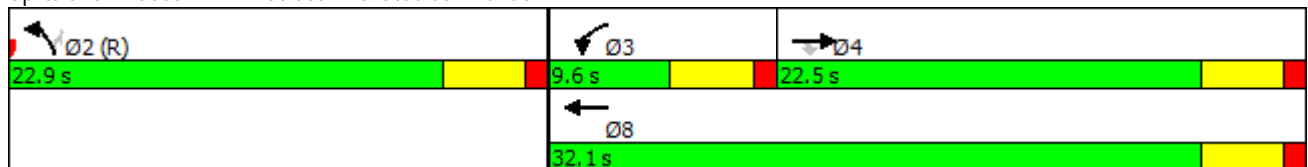


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	22.5	22.5	9.6	32.1	22.9	22.9
Total Split (%)	40.9%	40.9%	17.5%	58.4%	41.6%	41.6%
Maximum Green (s)	18.0	18.0	5.1	27.6	18.4	18.4
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	17.5	17.5	5.1	27.1	18.9	18.9
Actuated g/C Ratio	0.32	0.32	0.09	0.49	0.34	0.34
v/c Ratio	0.73	0.55	0.60	0.23	0.13	0.08
Control Delay	19.8	4.8	32.9	8.2	13.1	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	4.8	32.9	8.2	13.1	5.2
LOS	B	A	C	A	B	A
Approach Delay	15.6			14.3	11.3	
Approach LOS	B			B	B	

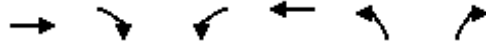
Intersection Summary

Area Type:	Other
Cycle Length:	55
Actuated Cycle Length:	55
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	14.9
Intersection Capacity Utilization	43.9%
Analysis Period (min)	15
Intersection LOS:	B
ICU Level of Service	A

Splits and Phases: 21: "Street D" & Steeles Avenue



Queues  
21: "Street D" & Steeles Avenue



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1190	450	190	580	150	45
v/c Ratio	0.73	0.55	0.60	0.23	0.13	0.08
Control Delay	19.8	4.8	32.9	8.2	13.1	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	4.8	32.9	8.2	13.1	5.2
Queue Length 50th (m)	39.2	0.0	10.1	11.3	5.5	0.0
Queue Length 95th (m)	52.9	16.6	#20.6	16.8	10.7	5.4
Internal Link Dist (m)	417.5			439.9	399.9	
Turn Bay Length (m)		50.0	50.0			
Base Capacity (vph)	1664	820	318	2551	1177	572
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.55	0.60	0.23	0.13	0.08

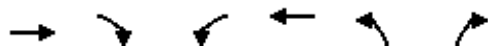
Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 21: "Street D" & Steeles Avenue

2031 Background AM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖↗	↑↑↑	↖↗	↗
Traffic Volume (vph)	1190	450	190	580	150	45
Future Volume (vph)	1190	450	190	580	150	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.91	1.00	0.97	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	3433	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1190	450	190	580	150	45
RTOR Reduction (vph)	0	307	0	0	0	30
Lane Group Flow (vph)	1190	143	190	580	150	15
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	17.5	17.5	5.1	27.1	18.9	18.9
Effective Green, g (s)	17.5	17.5	5.1	27.1	18.9	18.9
Actuated g/C Ratio	0.32	0.32	0.09	0.49	0.34	0.34
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1617	503	318	2505	1179	543
v/s Ratio Prot	c0.23		c0.06	0.11	c0.04	
v/s Ratio Perm		0.09				0.01
v/c Ratio	0.74	0.28	0.60	0.23	0.13	0.03
Uniform Delay, d1	16.7	14.1	24.0	8.0	12.4	12.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.3	3.0	0.0	0.2	0.1
Delay (s)	18.5	14.4	27.0	8.0	12.6	12.1
Level of Service	B	B	C	A	B	B
Approach Delay (s)	17.3			12.7	12.5	
Approach LOS	B			B	B	

### Intersection Summary

HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

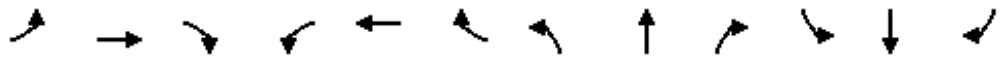
Lanes, Volumes, Timings  
1: Brownridge Road/Fifth Line & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	750	5	5	1655	20	70	15	40	70	5	160
Future Volume (vph)	75	750	5	5	1655	20	70	15	40	70	5	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	145.0		65.0	30.0		0.0	20.0		0.0	25.0		25.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	100.0			100.0			20.0			75.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998			0.891				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	4433	1214	1203	4740	0	1687	1507	0	1583	1429	1568
Flt Permitted	0.123			0.355			0.754			0.721		
Satd. Flow (perm)	220	4433	1214	450	4740	0	1339	1507	0	1202	1429	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55		5			40				91
Link Speed (k/h)		60			60			50				50
Link Distance (m)		486.3			703.6			285.2				91.4
Travel Time (s)		29.2			42.2			20.5				6.6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	17%	33%	50%	9%	27%	7%	0%	17%	14%	33%	3%
Adj. Flow (vph)	75	750	5	5	1655	20	70	15	40	70	5	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	750	5	5	1675	0	70	55	0	70	5	160
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
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	25.0	25.0	25.0	25.0	25.0		10.0	10.0		10.0	10.0	10.0

Lanes, Volumes, Timings  
1: Brownridge Road/Fifth Line & Steeles Avenue

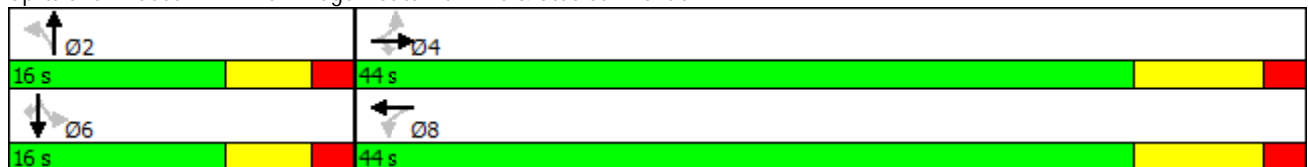


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	33.0	33.0	33.0	33.0	33.0		16.0	16.0		16.0	16.0	16.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0		16.0	16.0		16.0	16.0	16.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	73.3%		26.7%	26.7%		26.7%	26.7%	26.7%
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0		10.0	10.0		10.0	10.0	10.0
Yellow Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max		None	None		None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)	40.7	40.7	40.7	40.7	40.7		10.0	10.0		10.0	10.0	10.0
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68		0.17	0.17		0.17	0.17	0.17
v/c Ratio	0.50	0.25	0.01	0.02	0.52		0.31	0.19		0.35	0.02	0.47
Control Delay	24.9	5.4	0.0	5.2	7.2		26.4	12.6		27.7	21.2	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	24.9	5.4	0.0	5.2	7.2		26.4	12.6		27.7	21.2	16.3
LOS	C	A	A	A	A		C	B		C	C	B
Approach Delay		7.1			7.2			20.3			19.8	
Approach LOS		A			A			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	59.8
Natural Cycle:	60
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	8.8
Intersection LOS:	A
Intersection Capacity Utilization:	82.1%
ICU Level of Service:	E
Analysis Period (min):	15

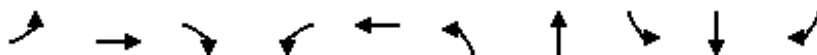
Splits and Phases: 1: Brownridge Road/Fifth Line & Steeles Avenue





Queues  
1: Brownridge Road/Fifth Line & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	75	750	5	5	1675	70	55	70	5	160
v/c Ratio	0.50	0.25	0.01	0.02	0.52	0.31	0.19	0.35	0.02	0.47
Control Delay	24.9	5.4	0.0	5.2	7.2	26.4	12.6	27.7	21.2	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	5.4	0.0	5.2	7.2	26.4	12.6	27.7	21.2	16.3
Queue Length 50th (m)	4.6	13.2	0.0	0.2	37.8	7.2	1.5	7.3	0.5	7.1
Queue Length 95th (m)	#25.2	18.6	0.0	1.3	49.5	17.7	9.8	18.0	3.0	22.3
Internal Link Dist (m)		462.3			679.6		261.2		67.4	
Turn Bay Length (m)	145.0		65.0	30.0		20.0		25.0		25.0
Base Capacity (vph)	150	3014	843	306	3225	224	285	201	239	338
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.25	0.01	0.02	0.52	0.31	0.19	0.35	0.02	0.47

Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 1: Brownridge Road/Fifth Line & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



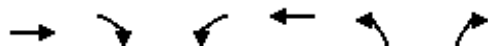
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	750	5	5	1655	20	70	15	40	70	5	160
Future Volume (vph)	75	750	5	5	1655	20	70	15	40	70	5	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	4433	1214	1203	4741		1687	1506		1583	1429	1568
Flt Permitted	0.12	1.00	1.00	0.36	1.00		0.75	1.00		0.72	1.00	1.00
Satd. Flow (perm)	220	4433	1214	450	4741		1340	1506		1202	1429	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	75	750	5	5	1655	20	70	15	40	70	5	160
RTOR Reduction (vph)	0	0	2	0	2	0	0	35	0	0	0	79
Lane Group Flow (vph)	75	750	3	5	1673	0	70	20	0	70	5	81
Heavy Vehicles (%)	6%	17%	33%	50%	9%	27%	7%	0%	17%	14%	33%	3%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	39.0	39.0	39.0	39.0	39.0		8.0	8.0		8.0	8.0	8.0
Effective Green, g (s)	39.0	39.0	39.0	39.0	39.0		8.0	8.0		8.0	8.0	8.0
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.64		0.13	0.13		0.13	0.13	0.13
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	140	2834	776	287	3031		175	197		157	187	205
v/s Ratio Prot		0.17			c0.35			0.01			0.00	
v/s Ratio Perm	0.34		0.00	0.01			0.05			c0.06		0.05
v/c Ratio	0.54	0.26	0.00	0.02	0.55		0.40	0.10		0.45	0.03	0.39
Uniform Delay, d1	6.0	4.8	4.0	4.0	6.1		24.3	23.3		24.5	23.1	24.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.9	0.2	0.0	0.1	0.7		1.5	0.2		2.0	0.1	1.3
Delay (s)	19.9	5.0	4.0	4.1	6.9		25.8	23.6		26.5	23.2	25.5
Level of Service	B	A	A	A	A		C	C		C	C	C
Approach Delay (s)		6.3			6.9			24.8			25.8	
Approach LOS		A			A			C			C	

### Intersection Summary

HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

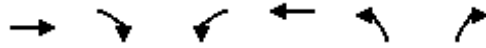
## Lanes, Volumes, Timings 2: Fifth Line South & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	875	5	5	1685	25	10
Future Volume (vph)	875	5	5	1685	25	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	60.0		15.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			100.0		30.0	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4433	1615	1203	4759	1687	1380
Flt Permitted			0.312		0.950	
Satd. Flow (perm)	4433	1615	395	4759	1687	1380
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5				10
Link Speed (k/h)	60			60	60	
Link Distance (m)	703.6			479.7	556.9	
Travel Time (s)	42.2			28.8	33.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	17%	0%	50%	9%	7%	17%
Adj. Flow (vph)	875	5	5	1685	25	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	875	5	5	1685	25	10
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	4			8		
Permitted Phases		4	8		2	2
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	25.0	25.0	25.0	25.0	10.0	10.0

Lanes, Volumes, Timings  
2: Fifth Line South & Steeles Avenue

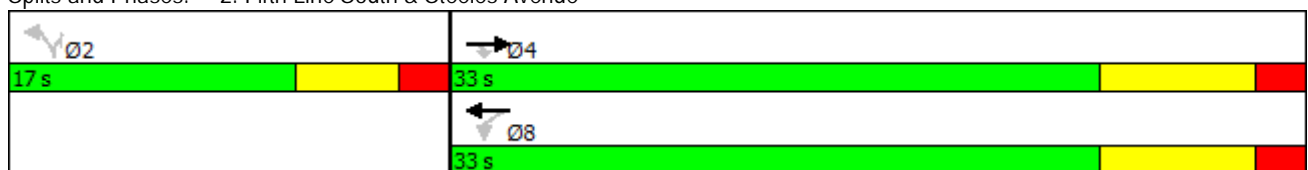


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	33.0	33.0	33.0	33.0	16.0	16.0
Total Split (s)	33.0	33.0	33.0	33.0	17.0	17.0
Total Split (%)	66.0%	66.0%	66.0%	66.0%	34.0%	34.0%
Maximum Green (s)	25.0	25.0	25.0	25.0	11.0	11.0
Yellow Time (s)	6.0	6.0	6.0	6.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	44.3	44.3	44.3	44.3	10.1	10.1
Actuated g/C Ratio	0.84	0.84	0.84	0.84	0.19	0.19
v/c Ratio	0.24	0.00	0.02	0.42	0.08	0.04
Control Delay	3.4	3.4	4.8	4.3	20.5	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.4	3.4	4.8	4.3	20.5	12.4
LOS	A	A	A	A	C	B
Approach Delay	3.4			4.3	18.2	
Approach LOS	A			A	B	

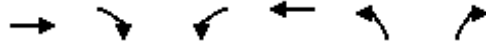
Intersection Summary

Area Type:	Other
Cycle Length:	50
Actuated Cycle Length:	52.8
Natural Cycle:	50
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	4.2
Intersection LOS:	A
Intersection Capacity Utilization	55.0%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 2: Fifth Line South & Steeles Avenue



**Queues**  
**2: Fifth Line South & Steeles Avenue**

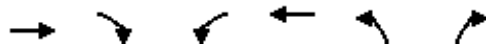


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	875	5	5	1685	25	10
v/c Ratio	0.24	0.00	0.02	0.42	0.08	0.04
Control Delay	3.4	3.4	4.8	4.3	20.5	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.4	3.4	4.8	4.3	20.5	12.4
Queue Length 50th (m)	0.0	0.0	0.0	0.0	1.8	0.0
Queue Length 95th (m)	22.4	1.1	1.4	50.8	7.7	3.4
Internal Link Dist (m)	679.6			455.7	532.9	
Turn Bay Length (m)		30.0	60.0		15.0	
Base Capacity (vph)	3720	1356	331	3994	356	299
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.00	0.02	0.42	0.07	0.03
<b>Intersection Summary</b>						

# HCM Signalized Intersection Capacity Analysis

## 2: Fifth Line South & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area

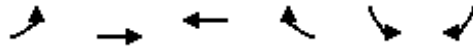


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗
Traffic Volume (vph)	875	5	5	1685	25	10
Future Volume (vph)	875	5	5	1685	25	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	6.0	6.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	4433	1615	1203	4759	1687	1380
Flt Permitted	1.00	1.00	0.31	1.00	0.95	1.00
Satd. Flow (perm)	4433	1615	396	4759	1687	1380
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	875	5	5	1685	25	10
RTOR Reduction (vph)	0	2	0	0	0	9
Lane Group Flow (vph)	875	3	5	1685	25	1
Heavy Vehicles (%)	17%	0%	50%	9%	7%	17%
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	4			8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	39.0	39.0	39.0	39.0	3.5	3.5
Effective Green, g (s)	39.0	39.0	39.0	39.0	3.5	3.5
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.06	0.06
Clearance Time (s)	8.0	8.0	8.0	8.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3059	1114	273	3284	104	85
v/s Ratio Prot	0.20			c0.35		
v/s Ratio Perm		0.00	0.01		c0.01	0.00
v/c Ratio	0.29	0.00	0.02	0.51	0.24	0.01
Uniform Delay, d1	3.4	2.7	2.7	4.2	25.2	24.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1	0.6	1.2	0.0
Delay (s)	3.6	2.7	2.9	4.8	26.4	24.9
Level of Service	A	A	A	A	C	C
Approach Delay (s)	3.6			4.8	26.0	
Approach LOS	A			A	C	

### Intersection Summary

HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
3: Steeles Avenue & Sixth Line



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	70	1230	1735	115	45	50
Future Volume (vph)	70	1230	1735	115	45	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			30.0	30.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	100.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Fr <sub>t</sub>				0.850		0.850
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	4287	4715	1524	1805	1615
Fl <sub>t</sub> Permitted	0.950				0.950	
Satd. Flow (perm)	1770	4287	4715	1524	1805	1615
Link Speed (k/h)		60	80		70	
Link Distance (m)		479.7	441.5		3066.1	
Travel Time (s)		28.8	19.9		157.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	21%	10%	6%	0%	0%
Adj. Flow (vph)	70	1230	1735	115	45	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	1230	1735	115	45	50
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

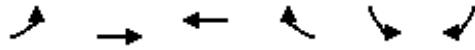
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.7%
ICU Level of Service	A
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 3: Steeles Avenue & Sixth Line

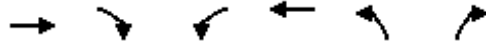
2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR					
Lane Configurations											
Traffic Volume (veh/h)	70	1230	1735	115	45	50					
Future Volume (Veh/h)	70	1230	1735	115	45	50					
Sign Control		Free	Free		Stop						
Grade		0%	0%		0%						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Hourly flow rate (vph)	70	1230	1735	115	45	50					
Pedestrians											
Lane Width (m)											
Walking Speed (m/s)											
Percent Blockage											
Right turn flare (veh)											
Median type		None	None								
Median storage veh											
Upstream signal (m)											
pX, platoon unblocked											
vC, conflicting volume	1850				2285	578					
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	1850				2285	578					
tC, single (s)	4.1				6.8	6.9					
tC, 2 stage (s)											
tF (s)	2.2				3.5	3.3					
p0 queue free %	78				0	89					
cM capacity (veh/h)	324				27	464					
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2	
Volume Total	70	410	410	410	578	578	578	115	45	50	
Volume Left	70	0	0	0	0	0	0	0	45	0	
Volume Right	0	0	0	0	0	0	0	115	0	50	
cSH	324	1700	1700	1700	1700	1700	1700	1700	27	464	
Volume to Capacity	0.22	0.24	0.24	0.24	0.34	0.34	0.34	0.07	1.68	0.11	
Queue Length 95th (m)	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.2	2.9	
Control Delay (s)	19.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	644.6	13.7	
Lane LOS	C								F	B	
Approach Delay (s)	1.0				0.0				312.5		
Approach LOS									F		
Intersection Summary											
Average Delay			9.6								
Intersection Capacity Utilization			50.7%	ICU Level of Service					A		
Analysis Period (min)			15								



Lanes, Volumes, Timings  
4: Sixth Line South & Steeles Avenue



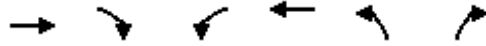
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	515	5	30	1850	5	15
Future Volume (vph)	515	5	30	1850	5	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	60.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			100.0		7.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4252	1615	1805	4715	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4252	1615	1805	4715	1805	1615
Link Speed (k/h)	80			80	50	
Link Distance (m)	463.9			497.0	166.1	
Travel Time (s)	20.9			22.4	12.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	22%	0%	0%	10%	0%	0%
Adj. Flow (vph)	515	5	30	1850	5	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	515	5	30	1850	5	15
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.7%
ICU Level of Service	A
Analysis Period (min)	15

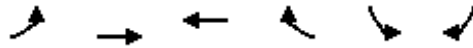
HCM Unsignalized Intersection Capacity Analysis  
 4: Sixth Line South & Steeles Avenue

2031 Background PM  
 Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR				
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗				
Traffic Volume (veh/h)	515	5	30	1850	5	15				
Future Volume (Veh/h)	515	5	30	1850	5	15				
Sign Control	Free			Free	Stop					
Grade	0%			0%	0%					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Hourly flow rate (vph)	515	5	30	1850	5	15				
Pedestrians										
Lane Width (m)										
Walking Speed (m/s)										
Percent Blockage										
Right turn flare (veh)										
Median type	None			None						
Median storage veh										
Upstream signal (m)										
pX, platoon unblocked										
vC, conflicting volume	520			1192	172					
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	520			1192	172					
tC, single (s)	4.1			6.8	6.9					
tC, 2 stage (s)										
tF (s)	2.2			3.5	3.3					
p0 queue free %	97			97	98					
cM capacity (veh/h)	1056			178	848					
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	172	172	172	5	30	617	617	617	5	15
Volume Left	0	0	0	0	30	0	0	0	5	0
Volume Right	0	0	0	5	0	0	0	0	0	15
cSH	1700	1700	1700	1700	1056	1700	1700	1700	178	848
Volume to Capacity	0.10	0.10	0.10	0.00	0.03	0.36	0.36	0.36	0.03	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.7	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0	25.8	9.3
Lane LOS					A				D	A
Approach Delay (s)	0.0				0.1				13.5	
Approach LOS									B	
Intersection Summary										
Average Delay	0.2									
Intersection Capacity Utilization	45.7%			ICU Level of Service					A	
Analysis Period (min)	15									

Lanes, Volumes, Timings  
5: Steeles Avenue & Hornby Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	50	685	1465	25	5	80
Future Volume (vph)	50	685	1465	25	5	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			30.0	30.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	100.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	4359	4715	1615	1357	1615
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	4359	4715	1615	1357	1615
Link Speed (k/h)		60	60		60	
Link Distance (m)		497.0	879.8		1223.8	
Travel Time (s)		29.8	52.8		73.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	19%	10%	0%	33%	0%
Adj. Flow (vph)	50	685	1465	25	5	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	685	1465	25	5	80
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.2	7.2		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

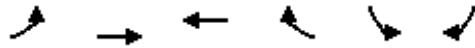
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.0%
ICU Level of Service	A
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 5: Steeles Avenue & Hornby Road

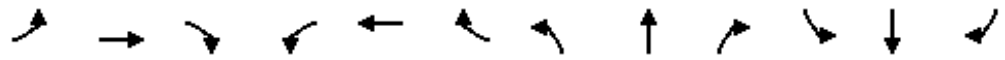
2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR					
Lane Configurations											
Traffic Volume (veh/h)	50	685	1465	25	5	80					
Future Volume (Veh/h)	50	685	1465	25	5	80					
Sign Control		Free	Free		Stop						
Grade		0%	0%		0%						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Hourly flow rate (vph)	50	685	1465	25	5	80					
Pedestrians											
Lane Width (m)											
Walking Speed (m/s)											
Percent Blockage											
Right turn flare (veh)											
Median type		None	None								
Median storage veh											
Upstream signal (m)											
pX, platoon unblocked											
vC, conflicting volume	1490				1793	488					
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	1490				1793	488					
tC, single (s)	4.1				7.5	6.9					
tC, 2 stage (s)											
tF (s)	2.2				3.8	3.3					
p0 queue free %	89				89	85					
cM capacity (veh/h)	457				46	531					
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2	
Volume Total	50	228	228	228	488	488	488	25	5	80	
Volume Left	50	0	0	0	0	0	0	0	5	0	
Volume Right	0	0	0	0	0	0	0	25	0	80	
cSH	457	1700	1700	1700	1700	1700	1700	1700	46	531	
Volume to Capacity	0.11	0.13	0.13	0.13	0.29	0.29	0.29	0.01	0.11	0.15	
Queue Length 95th (m)	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	4.2	
Control Delay (s)	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.4	13.0	
Lane LOS	B								F	B	
Approach Delay (s)	0.9				0.0				17.7		
Approach LOS									C		
Intersection Summary											
Average Delay			1.0								
Intersection Capacity Utilization			45.0%	ICU Level of Service					A		
Analysis Period (min)			15								

Lanes, Volumes, Timings  
6: Trafalgar Road & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	780	60	895	1280	235	90	875	845	60	340	75
Future Volume (vph)	335	780	60	895	1280	235	90	875	845	60	340	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		40.0	130.0		70.0	100.0		65.0	250.0		80.0
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (m)	100.0			100.0			80.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2653	4510	1262	3433	4759	1583	3099	5036	1568	1805	4988	1129
Flt Permitted	0.950			0.950			0.950			0.232		
Satd. Flow (perm)	2653	4510	1262	3433	4759	1583	3099	5036	1568	441	4988	1129
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			156			151			622			148
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		879.8			311.3			332.0			289.5	
Travel Time (s)		52.8			18.7			17.1			14.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	32%	15%	28%	2%	9%	2%	13%	3%	3%	0%	4%	43%
Adj. Flow (vph)	335	780	60	895	1280	235	90	875	845	60	340	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	335	780	60	895	1280	235	90	875	845	60	340	75
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)		7.2			7.2			7.2			7.2	
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
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0	9.0	20.0	20.0

Lanes, Volumes, Timings  
6: Trafalgar Road & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area

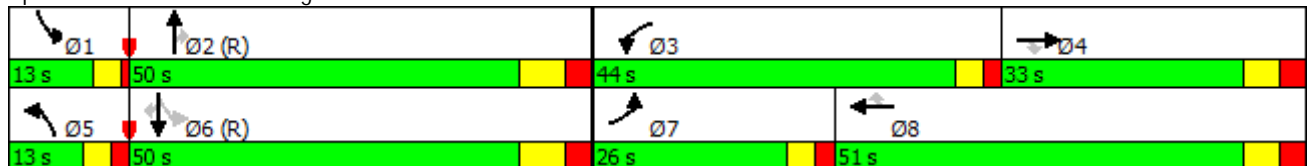


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.0	27.0	27.0	13.0	27.0	27.0	13.0	28.0	28.0	13.0	28.0	28.0
Total Split (s)	26.0	33.0	33.0	44.0	51.0	51.0	13.0	50.0	50.0	13.0	50.0	50.0
Total Split (%)	18.6%	23.6%	23.6%	31.4%	36.4%	36.4%	9.3%	35.7%	35.7%	9.3%	35.7%	35.7%
Maximum Green (s)	21.0	26.0	26.0	39.0	44.0	44.0	8.0	42.0	42.0	9.0	42.0	42.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	0.2	0.2	3.0	0.2	0.2
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
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		26.0	26.0		26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	20.3	25.8	25.8	38.6	44.2	44.2	8.0	45.1	45.1	55.5	42.5	42.5
Actuated g/C Ratio	0.14	0.18	0.18	0.28	0.32	0.32	0.06	0.32	0.32	0.40	0.30	0.30
v/c Ratio	0.87	0.94	0.17	0.95	0.85	0.39	0.51	0.54	0.91	0.23	0.22	0.17
Control Delay	81.6	75.5	1.0	68.2	51.5	15.4	74.6	41.2	27.3	26.6	37.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.6	75.5	1.0	68.2	51.5	15.4	74.6	41.2	27.3	26.6	37.0	0.8
LOS	F	E	A	E	D	B	E	D	C	C	D	A
Approach Delay		73.5			54.2			36.4			30.0	
Approach LOS		E			D			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	140
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	50.6
Intersection LOS:	D
Intersection Capacity Utilization:	92.3%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 6: Trafalgar Road & Steeles Avenue



Queues  
6: Trafalgar Road & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	335	780	60	895	1280	235	90	875	845	60	340	75
v/c Ratio	0.87	0.94	0.17	0.95	0.85	0.39	0.51	0.54	0.91	0.23	0.22	0.17
Control Delay	81.6	75.5	1.0	68.2	51.5	15.4	74.6	41.2	27.3	26.6	37.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.6	75.5	1.0	68.2	51.5	15.4	74.6	41.2	27.3	26.6	37.0	0.8
Queue Length 50th (m)	49.5	82.9	0.0	131.8	128.3	17.8	13.4	79.3	81.2	10.4	27.3	0.0
Queue Length 95th (m)	#74.7	#109.2	0.0	#172.3	148.3	41.9	23.0	94.5	#182.7	20.1	36.5	0.0
Internal Link Dist (m)		855.8			287.3			308.0			265.5	
Turn Bay Length (m)	115.0		40.0	130.0		70.0	100.0		65.0	250.0		80.0
Base Capacity (vph)	397	837	361	956	1501	603	177	1623	926	262	1515	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.93	0.17	0.94	0.85	0.39	0.51	0.54	0.91	0.23	0.22	0.17

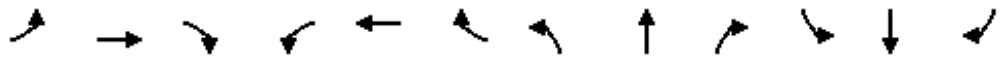
Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 6: Trafalgar Road & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗↘	↑↑↑	↗	↗↘	↑↑↑	↗	↗↘	↑↑↑	↗	↗	↑↑↑	↗
Traffic Volume (vph)	335	780	60	895	1280	235	90	875	845	60	340	75
Future Volume (vph)	335	780	60	895	1280	235	90	875	845	60	340	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Fr <sub>t</sub>	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2653	4510	1262	3433	4759	1583	3099	5036	1568	1805	4988	1129
Fl <sub>t</sub> Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.23	1.00	1.00
Satd. Flow (perm)	2653	4510	1262	3433	4759	1583	3099	5036	1568	441	4988	1129
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	335	780	60	895	1280	235	90	875	845	60	340	75
RTOR Reduction (vph)	0	0	49	0	0	103	0	0	425	0	0	52
Lane Group Flow (vph)	335	780	11	895	1280	132	90	875	420	60	340	23
Heavy Vehicles (%)	32%	15%	28%	2%	9%	2%	13%	3%	3%	0%	4%	43%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2	6		6
Actuated Green, G (s)	20.3	25.9	25.9	38.6	44.2	44.2	8.0	44.3	44.3	49.7	42.5	42.5
Effective Green, g (s)	20.3	25.9	25.9	38.6	44.2	44.2	8.0	44.3	44.3	49.7	42.5	42.5
Actuated g/C Ratio	0.15	0.18	0.18	0.28	0.32	0.32	0.06	0.32	0.32	0.36	0.30	0.30
Clearance Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	0.2	0.2	3.0	0.2	0.2
Lane Grp Cap (vph)	384	834	233	946	1502	499	177	1593	496	226	1514	342
v/s Ratio Prot	0.13	c0.17		c0.26	0.27		c0.03	0.17		0.01	0.07	
v/s Ratio Perm			0.01			0.08			c0.27	0.08		0.02
v/c Ratio	0.87	0.94	0.05	0.95	0.85	0.26	0.51	0.55	0.85	0.27	0.22	0.07
Uniform Delay, d <sub>1</sub>	58.6	56.2	46.9	49.7	44.8	35.8	64.1	39.6	44.7	30.6	36.4	34.7
Progression 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
Incremental Delay, d <sub>2</sub>	19.1	17.4	0.1	17.7	4.9	0.3	3.1	1.4	16.2	0.6	0.3	0.4
Delay (s)	77.6	73.6	47.0	67.4	49.7	36.0	67.2	41.0	60.9	31.2	36.8	35.0
Level of Service	E	E	D	E	D	D	E	D	E	C	D	D
Approach Delay (s)		73.4			54.9			51.6			35.8	
Approach LOS		E			D			D			D	

### Intersection Summary

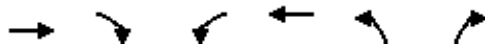
HCM 2000 Control Delay	56.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



# Lanes, Volumes, Timings

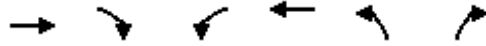
## 7: Toronto Premier Outlets & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1595	55	35	1975	455	105
Future Volume (vph)	1595	55	35	1975	455	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		130.0	45.0		0.0	40.0
Storage Lanes		1	1		2	1
Taper Length (m)			80.0		7.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4759	1482	1805	4893	3467	1599
Flt Permitted			0.114		0.950	
Satd. Flow (perm)	4759	1482	217	4893	3467	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		55				105
Link Speed (k/h)	60			60	50	
Link Distance (m)	311.3			200.7	119.1	
Travel Time (s)	18.7			12.0	8.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	9%	0%	6%	1%	1%
Adj. Flow (vph)	1595	55	35	1975	455	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1595	55	35	1975	455	105
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4	8			2
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	20.0	20.0	6.0	20.0	10.0	10.0

Lanes, Volumes, Timings  
7: Toronto Premier Outlets & Steeles Avenue

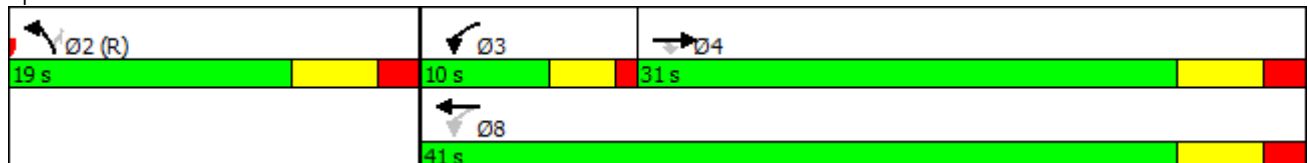


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	26.0	26.0	10.0	26.0	17.0	17.0
Total Split (s)	31.0	31.0	10.0	41.0	19.0	19.0
Total Split (%)	51.7%	51.7%	16.7%	68.3%	31.7%	31.7%
Maximum Green (s)	25.0	25.0	6.0	35.0	13.0	13.0
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	0.2	0.2	3.0	0.2	4.0	4.0
Recall Mode	Max	Max	None	Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	31.0	31.0	37.0	35.0	13.0	13.0
Actuated g/C Ratio	0.52	0.52	0.62	0.58	0.22	0.22
v/c Ratio	0.65	0.07	0.12	0.69	0.61	0.25
Control Delay	13.3	3.9	5.4	10.4	25.1	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	3.9	5.4	10.4	25.1	6.7
LOS	B	A	A	B	C	A
Approach Delay	13.0			10.3	21.7	
Approach LOS	B			B	C	

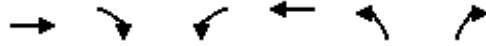
Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 12.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 61.1%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 7: Toronto Premier Outlets & Steeles Avenue



Queues  
7: Toronto Premier Outlets & Steeles Avenue

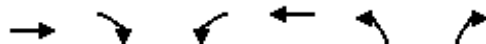


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1595	55	35	1975	455	105
v/c Ratio	0.65	0.07	0.12	0.69	0.61	0.25
Control Delay	13.3	3.9	5.4	10.4	25.1	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	3.9	5.4	10.4	25.1	6.7
Queue Length 50th (m)	37.2	0.0	1.4	51.3	24.5	0.0
Queue Length 95th (m)	74.3	5.4	4.0	66.5	37.8	10.5
Internal Link Dist (m)	287.3			176.7	95.1	
Turn Bay Length (m)		130.0	45.0			40.0
Base Capacity (vph)	2458	792	292	2854	751	428
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.07	0.12	0.69	0.61	0.25
<b>Intersection Summary</b>						

# HCM Signalized Intersection Capacity Analysis

## 7: Toronto Premier Outlets & Steeles Avenue

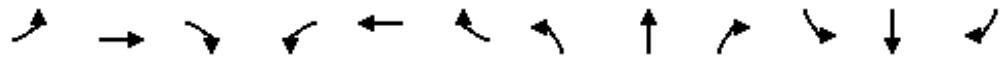
2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↖	↗
Traffic Volume (vph)	1595	55	35	1975	455	105
Future Volume (vph)	1595	55	35	1975	455	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	4.0	6.0	6.0	6.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	4759	1482	1805	4893	3467	1599
Flt Permitted	1.00	1.00	0.11	1.00	0.95	1.00
Satd. Flow (perm)	4759	1482	217	4893	3467	1599
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1595	55	35	1975	455	105
RTOR Reduction (vph)	0	27	0	0	0	86
Lane Group Flow (vph)	1595	28	35	1975	455	19
Heavy Vehicles (%)	9%	9%	0%	6%	1%	1%
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	31.0	31.0	37.4	37.4	10.6	10.6
Effective Green, g (s)	31.0	31.0	37.4	37.4	10.6	10.6
Actuated g/C Ratio	0.52	0.52	0.62	0.62	0.18	0.18
Clearance Time (s)	6.0	6.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	0.2	0.2	3.0	0.2	4.0	4.0
Lane Grp Cap (vph)	2458	765	198	3049	612	282
v/s Ratio Prot	0.34		0.01	c0.40	c0.13	
v/s Ratio Perm		0.02	0.10			0.01
v/c Ratio	0.65	0.04	0.18	0.65	0.74	0.07
Uniform Delay, d1	10.5	7.1	5.7	7.1	23.4	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.4	1.1	8.0	0.4
Delay (s)	11.9	7.2	6.1	8.2	31.4	21.0
Level of Service	B	A	A	A	C	C
Approach Delay (s)	11.7			8.2	29.4	
Approach LOS	B			A	C	

### Intersection Summary

HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	1225	25	180	1955	180	85	45	155	55	30	95
Future Volume (vph)	340	1225	25	180	1955	180	85	45	155	55	30	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		55.0	30.0		30.0	0.0		0.0	85.0		0.0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (m)	55.0			90.0			7.5			45.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>			0.850			0.850		0.884			0.886	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	4631	1615	1770	4848	1599	3367	1654	0	1752	1658	0
Fl <sub>t</sub> Permitted	0.069			0.212			0.950			0.632		
Satd. Flow (perm)	131	4631	1615	395	4848	1599	3367	1654	0	1166	1658	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			173		135			95	
Link Speed (k/h)		60			60			50			70	
Link Distance (m)		200.7			870.8			218.1			3086.4	
Travel Time (s)		12.0			52.2			15.7			158.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	12%	0%	2%	7%	1%	4%	0%	2%	3%	0%	2%
Adj. Flow (vph)	340	1225	25	180	1955	180	85	45	155	55	30	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	340	1225	25	180	1955	180	85	200	0	55	125	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			7.2			7.2	
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
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4		4	8		8				6		
Detector Phase	7	4	4	3	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		10.0	10.0	

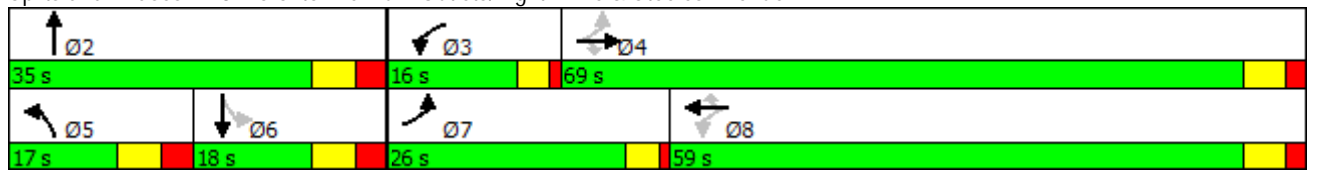


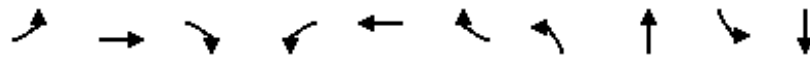
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	26.0	26.0	11.0	26.0	26.0	17.0	17.0		17.0	17.0	
Total Split (s)	26.0	69.0	69.0	16.0	59.0	59.0	17.0	35.0		18.0	18.0	
Total Split (%)	21.7%	57.5%	57.5%	13.3%	49.2%	49.2%	14.2%	29.2%		15.0%	15.0%	
Maximum Green (s)	22.0	63.0	63.0	12.0	53.0	53.0	10.0	28.0		11.0	11.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	0.2	0.2	3.0	0.2	0.2	4.0	4.0		3.0	3.0	
Recall Mode	None	Max	Max	None	Max	Max	None	None		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0				
Flash Dont Walk (s)		17.0	17.0		17.0	17.0		21.0				
Pedestrian Calls (#/hr)		0	0		0	0		0				
Act Effct Green (s)	80.2	64.4	64.4	65.9	54.2	54.2	10.1	24.2		11.1	11.1	
Actuated g/C Ratio	0.69	0.56	0.56	0.57	0.47	0.47	0.09	0.21		0.10	0.10	
v/c Ratio	0.90	0.47	0.03	0.53	0.86	0.21	0.29	0.44		0.50	0.51	
Control Delay	59.0	17.0	0.0	14.7	33.5	4.0	54.2	17.0		68.0	24.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	59.0	17.0	0.0	14.7	33.5	4.0	54.2	17.0		68.0	24.5	
LOS	E	B	A	B	C	A	D	B		E	C	
Approach Delay		25.7			29.8			28.1			37.8	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	115.4
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.90
Intersection Signal Delay:	28.5
Intersection LOS:	C
Intersection Capacity Utilization:	96.9%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 8: Toronto Premium Outlets/Eighth Line & Steeles Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	340	1225	25	180	1955	180	85	200	55	125
v/c Ratio	0.90	0.47	0.03	0.53	0.86	0.21	0.29	0.44	0.50	0.51
Control Delay	59.0	17.0	0.0	14.7	33.5	4.0	54.2	17.0	68.0	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	17.0	0.0	14.7	33.5	4.0	54.2	17.0	68.0	24.5
Queue Length 50th (m)	64.5	66.3	0.0	14.7	162.7	1.0	10.4	13.0	13.2	7.0
Queue Length 95th (m)	#116.1	82.1	0.0	23.5	186.8	14.2	18.8	34.8	#29.2	26.7
Internal Link Dist (m)		176.7			846.8			194.1		3062.4
Turn Bay Length (m)	105.0		55.0	30.0		30.0			85.0	
Base Capacity (vph)	412	2586	961	377	2278	842	293	506	111	245
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.47	0.03	0.48	0.86	0.21	0.29	0.40	0.50	0.51

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

2031 Background PM

## 8: Toronto Premium Outlets/Eighth Line & Steeles Avenue Premier Gateway Phase 1B Employment Area



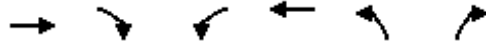
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	1225	25	180	1955	180	85	45	155	55	30	95
Future Volume (vph)	340	1225	25	180	1955	180	85	45	155	55	30	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	4631	1615	1770	4848	1599	3367	1653		1752	1658	
Flt Permitted	0.07	1.00	1.00	0.21	1.00	1.00	0.95	1.00		0.63	1.00	
Satd. Flow (perm)	131	4631	1615	395	4848	1599	3367	1653		1166	1658	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	340	1225	25	180	1955	180	85	45	155	55	30	95
RTOR Reduction (vph)	0	0	11	0	0	93	0	105	0	0	86	0
Lane Group Flow (vph)	340	1225	14	180	1955	87	85	95	0	55	39	0
Heavy Vehicles (%)	0%	12%	0%	2%	7%	1%	4%	0%	2%	3%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2				6
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)	78.1	64.4	64.4	63.9	54.2	54.2	7.7	25.8		11.1	11.1	
Effective Green, g (s)	78.1	64.4	64.4	63.9	54.2	54.2	7.7	25.8		11.1	11.1	
Actuated g/C Ratio	0.67	0.55	0.55	0.55	0.46	0.46	0.07	0.22		0.09	0.09	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	0.2	0.2	3.0	0.2	0.2	4.0	4.0		3.0	3.0	
Lane Grp Cap (vph)	372	2551	889	330	2247	741	221	364		110	157	
v/s Ratio Prot	c0.16	0.26		0.05	0.40		0.03	c0.06				0.02
v/s Ratio Perm	c0.46		0.01	0.25		0.05				c0.05		
v/c Ratio	0.91	0.48	0.02	0.55	0.87	0.12	0.38	0.26		0.50	0.25	
Uniform Delay, d1	36.6	16.0	11.9	13.4	28.2	17.8	52.3	37.7		50.3	49.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.2	0.7	0.0	1.8	4.9	0.3	1.5	0.5		15.3	3.8	
Delay (s)	62.8	16.7	11.9	15.2	33.1	18.1	53.8	38.2		65.6	52.8	
Level of Service	E	B	B	B	C	B	D	D		E	D	
Approach Delay (s)		26.5			30.6			42.9			56.7	
Approach LOS		C			C			D			E	

### Intersection Summary

HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	116.9	Sum of lost time (s)	24.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lanes, Volumes, Timings  
 9: Eighth Line South & Steeles Avenue



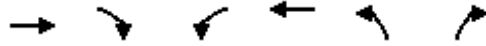
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑↑	↵	↵
Traffic Volume (vph)	1385	5	0	2320	5	10
Future Volume (vph)	1385	5	0	2320	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	90.0		30.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt	0.999					0.850
Flt Protected					0.950	
Satd. Flow (prot)	4705	0	1900	4893	1805	1346
Flt Permitted					0.950	
Satd. Flow (perm)	4705	0	1900	4893	1805	1346
Link Speed (k/h)	70			70	50	
Link Distance (m)	870.8			525.4	458.2	
Travel Time (s)	44.8			27.0	33.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	50%	0%	6%	0%	20%
Adj. Flow (vph)	1385	5	0	2320	5	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1390	0	0	2320	5	10
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.8%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 9: Eighth Line South & Steeles Avenue

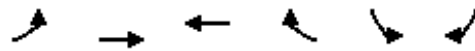
2031 Background PM  
 Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR				
Lane Configurations	↑↑↑		↵	↑↑↑	↵	↵				
Traffic Volume (veh/h)	1385	5	0	2320	5	10				
Future Volume (Veh/h)	1385	5	0	2320	5	10				
Sign Control	Free			Free	Stop					
Grade	0%			0%	0%					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Hourly flow rate (vph)	1385	5	0	2320	5	10				
Pedestrians										
Lane Width (m)										
Walking Speed (m/s)										
Percent Blockage										
Right turn flare (veh)										
Median type	None			None						
Median storage veh										
Upstream signal (m)										
pX, platoon unblocked										
vC, conflicting volume			1390			2161	464			
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol			1390			2161	464			
tC, single (s)			4.1			6.8	7.3			
tC, 2 stage (s)										
tF (s)			2.2			3.5	3.5			
p0 queue free %			100			88	98			
cM capacity (veh/h)			499			42	499			
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	
Volume Total	554	554	282	0	773	773	773	5	10	
Volume Left	0	0	0	0	0	0	0	5	0	
Volume Right	0	0	5	0	0	0	0	0	10	
cSH	1700	1700	1700	1700	1700	1700	1700	42	499	
Volume to Capacity	0.33	0.33	0.17	0.00	0.45	0.45	0.45	0.12	0.02	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	103.1	12.4	
Lane LOS								F	B	
Approach Delay (s)	0.0			0.0			42.6			
Approach LOS								E		
Intersection Summary										
Average Delay			0.2							
Intersection Capacity Utilization			54.8%		ICU Level of Service				A	
Analysis Period (min)			15							

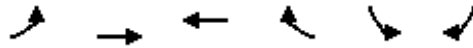
Lanes, Volumes, Timings  
10: Steeles Avenue & Ninth Line

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	160	1275	2175	1095	420	105
Future Volume (vph)	160	1275	2175	1095	420	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0			75.0	90.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	100.0				40.0	
Lane Util. Factor	1.00	0.91	0.95	1.00	0.97	1.00
Fr <sub>t</sub>				0.850		0.850
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1719	4673	3406	1615	3367	1524
Fl <sub>t</sub> Permitted	0.049				0.950	
Satd. Flow (perm)	89	4673	3406	1615	3367	1524
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				807		100
Link Speed (k/h)		70	70		70	
Link Distance (m)		525.4	169.8		3120.2	
Travel Time (s)		27.0	8.7		160.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	11%	6%	0%	4%	6%
Adj. Flow (vph)	160	1275	2175	1095	420	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	1275	2175	1095	420	105
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		7.2	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	10.0	10.0

Lanes, Volumes, Timings  
10: Steeles Avenue & Ninth Line



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	11.0	27.0	27.0	27.0	17.0	17.0
Total Split (s)	11.0	96.0	85.0	85.0	24.0	24.0
Total Split (%)	9.2%	80.0%	70.8%	70.8%	20.0%	20.0%
Maximum Green (s)	7.0	89.0	78.0	78.0	17.0	17.0
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	0.2	0.2	0.2	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max
Act Effect Green (s)	92.0	89.0	78.0	78.0	17.0	17.0
Actuated g/C Ratio	0.77	0.74	0.65	0.65	0.14	0.14
v/c Ratio	0.98	0.37	0.98	0.82	0.88	0.35
Control Delay	94.7	5.9	36.4	9.8	71.3	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.7	5.9	36.4	9.8	71.3	13.4
LOS	F	A	D	A	E	B
Approach Delay	15.8		27.5		59.7	
Approach LOS	B		C		E	

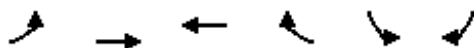
Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Natural Cycle:	100
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.98
Intersection Signal Delay:	27.5
Intersection LOS:	C
Intersection Capacity Utilization:	96.0%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 10: Steeles Avenue & Ninth Line



Queues  
10: Steeles Avenue & Ninth Line



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	160	1275	2175	1095	420	105
v/c Ratio	0.98	0.37	0.98	0.82	0.88	0.35
Control Delay	94.7	5.9	36.4	9.8	71.3	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.7	5.9	36.4	9.8	71.3	13.4
Queue Length 50th (m)	23.4	35.7	253.7	38.4	53.3	1.1
Queue Length 95th (m)	#69.2	42.3	#333.6	112.4	#81.4	17.5
Internal Link Dist (m)		501.4	145.8		3096.2	
Turn Bay Length (m)	65.0			75.0	90.0	
Base Capacity (vph)	163	3465	2213	1332	476	301
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.37	0.98	0.82	0.88	0.35

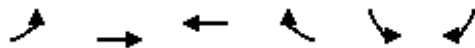
Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 10: Steeles Avenue & Ninth Line

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	160	1275	2175	1095	420	105
Future Volume (vph)	160	1275	2175	1095	420	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.91	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	4673	3406	1615	3367	1524
Flt Permitted	0.05	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	88	4673	3406	1615	3367	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	1275	2175	1095	420	105
RTOR Reduction (vph)	0	0	0	282	0	86
Lane Group Flow (vph)	160	1275	2175	813	420	19
Heavy Vehicles (%)	5%	11%	6%	0%	4%	6%
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	89.0	89.0	78.0	78.0	17.0	17.0
Effective Green, g (s)	89.0	89.0	78.0	78.0	17.0	17.0
Actuated g/C Ratio	0.74	0.74	0.65	0.65	0.14	0.14
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	0.2	0.2	0.2	3.0	3.0
Lane Grp Cap (vph)	160	3465	2213	1049	476	215
v/s Ratio Prot	c0.06	0.27	0.64		c0.12	
v/s Ratio Perm	c0.68			0.50		0.01
v/c Ratio	1.00	0.37	0.98	0.77	0.88	0.09
Uniform Delay, d1	41.3	5.5	20.4	14.8	50.5	44.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	71.2	0.3	15.5	5.6	20.5	0.8
Delay (s)	112.4	5.8	35.8	20.4	71.0	45.6
Level of Service	F	A	D	C	E	D
Approach Delay (s)		17.7	30.7		65.9	
Approach LOS		B	C		E	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			30.6		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			1.00			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			96.0%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings  
11: Trafalgar Rd & Hornby Rd



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	10	5	1465	410	95
Future Volume (vph)	50	10	5	1465	410	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.977				0.972	
Flt Protected	0.960					
Satd. Flow (prot)	1782	0	0	3539	3453	0
Flt Permitted	0.960					
Satd. Flow (perm)	1782	0	0	3539	3453	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	54.4			135.9	215.8	
Travel Time (s)	3.3			6.1	9.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%
Adj. Flow (vph)	50	10	5	1465	410	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	0	0	1470	505	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.0%
Analysis Period (min)	15
	ICU Level of Service A

# HCM Unsignalized Intersection Capacity Analysis

## 11: Trafalgar Rd & Hornby Rd

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	10	5	1465	410	95
Future Volume (Veh/h)	50	10	5	1465	410	95
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	50	10	5	1465	410	95
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1200	252	410			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1200	252	410			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	72	99	100			
cM capacity (veh/h)	180	753	1160			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	60	493	977	273	232	
Volume Left	50	5	0	0	0	
Volume Right	10	0	0	0	95	
cSH	206	1160	1700	1700	1700	
Volume to Capacity	0.29	0.00	0.57	0.16	0.14	
Queue Length 95th (m)	9.3	0.1	0.0	0.0	0.0	
Control Delay (s)	29.5	0.1	0.0	0.0	0.0	
Lane LOS	D	A				
Approach Delay (s)	29.5	0.0		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay	0.9					
Intersection Capacity Utilization	54.0%			ICU Level of Service	A	
Analysis Period (min)	15					



Lanes, Volumes, Timings  
12: Fifth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	55	300	10	25	635	30	10	60	35	5	45	20
Future Volume (vph)	55	300	10	25	635	30	10	60	35	5	45	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.994			0.955			0.961	
Flt Protected		0.993			0.998			0.995			0.996	
Satd. Flow (prot)	0	1849	0	0	1834	0	0	1748	0	0	1734	0
Flt Permitted		0.993			0.998			0.995			0.996	
Satd. Flow (perm)	0	1849	0	0	1834	0	0	1748	0	0	1734	0
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		320.1			648.3			2473.7			211.2	
Travel Time (s)		19.2			38.9			127.2			10.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	17%	0%	5%	0%	0%	17%
Adj. Flow (vph)	55	300	10	25	635	30	10	60	35	5	45	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	365	0	0	690	0	0	105	0	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 55.5%

ICU Level of Service B

Analysis Period (min) 15

# HCM Unsignalized Intersection Capacity Analysis

## 12: Fifth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	55	300	10	25	635	30	10	60	35	5	45	20
Future Volume (Veh/h)	55	300	10	25	635	30	10	60	35	5	45	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	55	300	10	25	635	30	10	60	35	5	45	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	665			310			1158	1130	305	1180	1120	650
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	665			310			1158	1130	305	1180	1120	650
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.5
p0 queue free %	94			98			92	68	95	96	77	95
cM capacity (veh/h)	934			1262			119	189	728	114	192	444
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	365	690	105	70								
Volume Left	55	25	10	5								
Volume Right	10	30	35	20								
cSH	934	1262	234	217								
Volume to Capacity	0.06	0.02	0.45	0.32								
Queue Length 95th (m)	1.5	0.5	17.2	10.7								
Control Delay (s)	1.9	0.5	32.3	29.3								
Lane LOS	A	A	D	D								
Approach Delay (s)	1.9	0.5	32.3	29.3								
Approach LOS			D	D								
<b>Intersection Summary</b>												
Average Delay			5.3									
Intersection Capacity Utilization			55.5%		ICU Level of Service				B			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
13: Sixth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	5	270	40	20	635	25	100	45	25	10	20	10
Future Volume (vph)	5	270	40	20	635	25	100	45	25	10	20	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.995			0.980			0.966	
Flt Protected		0.999			0.999			0.971			0.988	
Satd. Flow (prot)	0	1813	0	0	1784	0	0	1764	0	0	1769	0
Flt Permitted		0.999			0.999			0.971			0.988	
Satd. Flow (perm)	0	1813	0	0	1784	0	0	1764	0	0	1769	0
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		620.4			640.8			3066.1			190.9	
Travel Time (s)		37.2			38.4			157.7			9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	14%	3%	1%	0%	5%	33%	0%	0%	17%	10%	0%	0%
Adj. Flow (vph)	5	270	40	20	635	25	100	45	25	10	20	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	0	0	680	0	0	170	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	68.8%
ICU Level of Service	C
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 13: Sixth Line & 5 Side Road

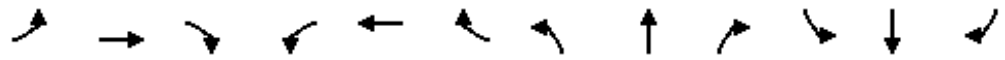
2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	5	270	40	20	635	25	100	45	25	10	20	10
Future Volume (Veh/h)	5	270	40	20	635	25	100	45	25	10	20	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	270	40	20	635	25	100	45	25	10	20	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	660			310			1008	1000	290	1035	1008	648
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	660			310			1008	1000	290	1035	1008	648
tC, single (s)	4.2			4.1			7.1	6.5	6.4	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.5	3.6	4.0	3.3
p0 queue free %	99			98			50	81	97	94	92	98
cM capacity (veh/h)	874			1262			199	240	715	165	237	474
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	315	680	170	40								
Volume Left	5	20	100	10								
Volume Right	40	25	25	10								
cSH	874	1262	235	241								
Volume to Capacity	0.01	0.02	0.72	0.17								
Queue Length 95th (m)	0.1	0.4	39.3	4.7								
Control Delay (s)	0.2	0.4	52.4	22.9								
Lane LOS	A	A	F	C								
Approach Delay (s)	0.2	0.4	52.4	22.9								
Approach LOS			F	C								
<b>Intersection Summary</b>												
Average Delay			8.4									
Intersection Capacity Utilization			68.8%		ICU Level of Service				C			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
14: Trafalgar Rd & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	230	25	65	530	55	55	1585	80	15	765	95
Future Volume (vph)	75	230	25	65	530	55	55	1585	80	15	765	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		40.0	40.0		0.0	40.0		0.0	50.0		20.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	80.0			80.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Fr <sub>t</sub>			0.850		0.986			0.993				0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3539	1482	1805	3559	0	1770	3453	0	1583	3438	1509
Fl <sub>t</sub> Permitted	0.248			0.608			0.280			0.089		
Satd. Flow (perm)	432	3539	1482	1155	3559	0	522	3453	0	148	3438	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133		11			8				133
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		223.8			665.2			264.1			262.0	
Travel Time (s)		13.4			39.9			11.9			11.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	2%	9%	0%	0%	0%	2%	4%	0%	14%	5%	7%
Adj. Flow (vph)	75	230	25	65	530	55	55	1585	80	15	765	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	230	25	65	585	0	55	1665	0	15	765	95
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
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	7	4	4	3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		7.0	25.0		7.0	25.0	25.0

Lanes, Volumes, Timings  
14: Trafalgar Rd & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	9.0	22.0	22.0	9.0	22.0		11.0	32.0		11.0	32.0	32.0
Total Split (s)	9.0	22.0	22.0	9.0	22.0		11.0	48.0		11.0	48.0	48.0
Total Split (%)	10.0%	24.4%	24.4%	10.0%	24.4%		12.2%	53.3%		12.2%	53.3%	53.3%
Maximum Green (s)	5.0	16.0	16.0	5.0	16.0		7.0	42.0		7.0	42.0	42.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0		3.0	5.0	5.0
Recall Mode	None	None	None	None	None		None	Max		None	Max	Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0			20.0			20.0	20.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	21.9	16.1	16.1	21.9	16.1		52.1	48.7		49.8	42.4	42.4
Actuated g/C Ratio	0.25	0.19	0.19	0.25	0.19		0.61	0.57		0.58	0.49	0.49
v/c Ratio	0.41	0.35	0.06	0.20	0.87		0.13	0.85		0.07	0.45	0.12
Control Delay	30.9	33.5	0.3	24.7	49.5		7.8	22.4		7.8	16.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	30.9	33.5	0.3	24.7	49.5		7.8	22.4		7.8	16.4	1.5
LOS	C	C	A	C	D		A	C		A	B	A
Approach Delay		30.4			47.1			22.0			14.6	
Approach LOS		C			D			C			B	

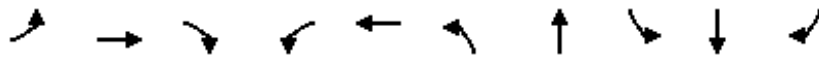
Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	85.9
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	25.5
Intersection LOS:	C
Intersection Capacity Utilization:	80.3%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 14: Trafalgar Rd & 5 Side Road

Ø1	Ø2	Ø3	Ø4
11 s	48 s	9 s	22 s
Ø5	Ø6	Ø7	Ø8
11 s	48 s	9 s	22 s

Queues  
14: Trafalgar Rd & 5 Side Road



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	75	230	25	65	585	55	1665	15	765	95
v/c Ratio	0.41	0.35	0.06	0.20	0.87	0.13	0.85	0.07	0.45	0.12
Control Delay	30.9	33.5	0.3	24.7	49.5	7.8	22.4	7.8	16.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	33.5	0.3	24.7	49.5	7.8	22.4	7.8	16.4	1.5
Queue Length 50th (m)	10.0	19.5	0.0	8.6	54.5	3.7	115.7	1.0	48.3	0.0
Queue Length 95th (m)	20.8	30.7	0.0	18.4	#86.5	8.2	#216.7	3.3	64.2	4.2
Internal Link Dist (m)		199.8			641.2		240.1		238.0	
Turn Bay Length (m)	40.0		40.0	40.0		40.0		50.0		20.0
Base Capacity (vph)	182	666	386	333	678	419	1961	203	1697	812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.35	0.06	0.20	0.86	0.13	0.85	0.07	0.45	0.12

Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 14: Trafalgar Rd & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	230	25	65	530	55	55	1585	80	15	765	95
Future Volume (vph)	75	230	25	65	530	55	55	1585	80	15	765	95
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	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	3539	1482	1805	3559		1770	3453		1583	3438	1509
Flt Permitted	0.25	1.00	1.00	0.61	1.00		0.28	1.00		0.09	1.00	1.00
Satd. Flow (perm)	433	3539	1482	1156	3559		521	3453		149	3438	1509
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	75	230	25	65	530	55	55	1585	80	15	765	95
RTOR Reduction (vph)	0	0	21	0	9	0	0	4	0	0	0	48
Lane Group Flow (vph)	75	230	4	65	576	0	55	1661	0	15	765	47
Heavy Vehicles (%)	9%	2%	9%	0%	0%	0%	2%	4%	0%	14%	5%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	19.9	16.1	16.1	19.9	16.1		54.0	48.7		46.0	44.7	44.7
Effective Green, g (s)	19.9	16.1	16.1	19.9	16.1		54.0	48.7		46.0	44.7	44.7
Actuated g/C Ratio	0.22	0.18	0.18	0.22	0.18		0.60	0.54		0.51	0.50	0.50
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0		3.0	5.0	5.0
Lane Grp Cap (vph)	147	633	265	283	637		386	1870		96	1709	750
v/s Ratio Prot	c0.02	0.06		0.01	c0.16		c0.01	c0.48		0.00	0.22	
v/s Ratio Perm	0.09		0.00	0.04			0.08			0.08		0.03
v/c Ratio	0.51	0.36	0.02	0.23	0.90		0.14	0.89		0.16	0.45	0.06
Uniform Delay, d1	29.1	32.4	30.4	28.3	36.1		8.1	18.2		15.7	14.6	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	0.7	0.1	0.4	17.2		0.2	6.8		0.8	0.9	0.2
Delay (s)	32.0	33.1	30.4	28.7	53.3		8.3	25.0		16.5	15.5	11.9
Level of Service	C	C	C	C	D		A	C		B	B	B
Approach Delay (s)		32.7			50.8			24.4			15.1	
Approach LOS		C			D			C			B	

### Intersection Summary

HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lanes, Volumes, Timings  
15: Eighth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Volume (vph)	70	310	10	30	610	110	5	510	65	30	155	40
Future Volume (vph)	70	310	10	30	610	110	5	510	65	30	155	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Fr <sub>t</sub>		0.996			0.978			0.985			0.976	
Fl <sub>t</sub> Protected		0.991			0.998			0.997			0.993	
Satd. Flow (prot)	0	3458	0	0	3475	0	0	1845	0	0	1828	0
Fl <sub>t</sub> Permitted		0.692			0.923			0.997			0.899	
Satd. Flow (perm)	0	2414	0	0	3214	0	0	1839	0	0	1655	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			43			15			26	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		643.4			668.7			3086.4			454.5	
Travel Time (s)		38.6			40.1			158.7			23.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	22%	11%	1%	1%	0%	1%	5%	0%	0%	4%
Adj. Flow (vph)	70	310	10	30	610	110	5	510	65	30	155	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	390	0	0	750	0	0	580	0	0	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			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
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Total Split (%)	48.0%	48.0%		48.0%	48.0%		52.0%	52.0%		52.0%	52.0%	

Lanes, Volumes, Timings  
15: Eighth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area

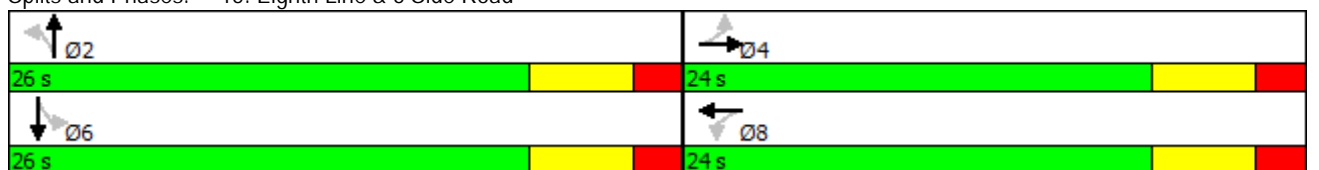


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	18.0	18.0		18.0	18.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		16.4			16.4			20.0			20.0	
Actuated g/C Ratio		0.34			0.34			0.41			0.41	
v/c Ratio		0.47			0.67			0.76			0.32	
Control Delay		14.6			16.3			20.9			10.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.6			16.3			20.9			10.4	
LOS		B			B			C			B	
Approach Delay		14.6			16.3			20.9			10.4	
Approach LOS		B			B			C			B	

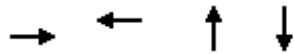
Intersection Summary

Area Type:	Other
Cycle Length:	50
Actuated Cycle Length:	48.5
Natural Cycle:	50
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	16.6
Intersection LOS:	B
Intersection Capacity Utilization:	80.5%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 15: Eighth Line & 5 Side Road



Queues  
15: Eighth Line & 5 Side Road



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	390	750	580	225
v/c Ratio	0.47	0.67	0.76	0.32
Control Delay	14.6	16.3	20.9	10.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	16.3	20.9	10.4
Queue Length 50th (m)	13.8	27.6	40.6	11.2
Queue Length 95th (m)	23.8	43.1	#92.2	25.1
Internal Link Dist (m)	619.4	644.7	3062.4	430.5
Turn Bay Length (m)				
Base Capacity (vph)	901	1221	768	698
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.61	0.76	0.32

Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 15: Eighth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



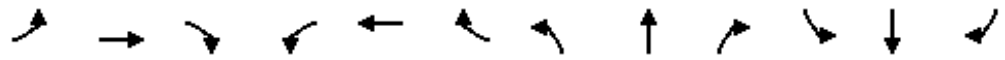
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	70	310	10	30	610	110	5	510	65	30	155	40
Future Volume (vph)	70	310	10	30	610	110	5	510	65	30	155	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.98			0.98			0.98	
Flt Protected		0.99			1.00			1.00			0.99	
Satd. Flow (prot)		3459			3475			1844			1829	
Flt Permitted		0.69			0.92			1.00			0.90	
Satd. Flow (perm)		2416			3215			1839			1656	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	310	10	30	610	110	5	510	65	30	155	40
RTOR Reduction (vph)	0	4	0	0	28	0	0	9	0	0	15	0
Lane Group Flow (vph)	0	386		0	722		0	571		0	210	
Heavy Vehicles (%)	5%	2%	22%	11%	1%	1%	0%	1%	5%	0%	0%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.4			16.4			20.0			20.0	
Effective Green, g (s)		16.4			16.4			20.0			20.0	
Actuated g/C Ratio		0.34			0.34			0.41			0.41	
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)		818			1089			759			684	
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.22			c0.31			0.13	
v/c Ratio		0.47			0.66			0.75			0.31	
Uniform Delay, d1		12.6			13.6			12.1			9.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			1.5			6.8			1.2	
Delay (s)		13.0			15.2			18.9			10.7	
Level of Service		B			B			B			B	
Approach Delay (s)		13.0			15.2			18.9			10.7	
Approach LOS		B			B			B			B	

### Intersection Summary

HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
16: Ninth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	310	25	10	700	350	20	1175	15	45	480	35
Future Volume (vph)	40	310	25	10	700	350	20	1175	15	45	480	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	40.0		40.0	40.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.989				0.850		0.998			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3570	0	1805	3610	1615	1805	3601	0	1805	3541	0
Flt Permitted	0.263			0.550			0.462			0.135		
Satd. Flow (perm)	485	3570	0	1045	3610	1615	878	3601	0	256	3541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				298		2			18	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		580.9			458.3			3120.2			329.9	
Travel Time (s)		34.9			27.5			160.5			17.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	0%	0%	0%	0%	0%	0%	0%	3%	0%	1%	0%
Adj. Flow (vph)	40	310	25	10	700	350	20	1175	15	45	480	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	335	0	10	700	350	20	1190	0	45	515	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
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0	15.0	15.0	15.0		7.0	20.0	

Lanes, Volumes, Timings  
16: Ninth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area

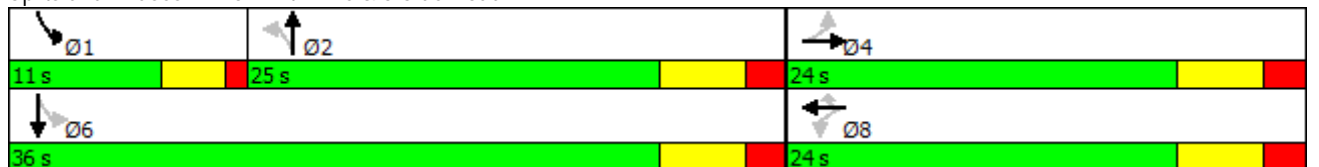


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	21.0	21.0		11.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	25.0	25.0		11.0	36.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	41.7%	41.7%		18.3%	60.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	19.0	19.0		7.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	5.5	5.5		3.0	5.5	
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Walk Time (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	17.1	17.1		17.1	17.1	17.1	25.7	25.7		32.0	30.0	
Actuated g/C Ratio	0.29	0.29		0.29	0.29	0.29	0.43	0.43		0.54	0.51	
v/c Ratio	0.29	0.32		0.03	0.67	0.52	0.05	0.76		0.14	0.29	
Control Delay	22.6	16.7		15.3	22.2	6.9	13.9	22.4		7.7	8.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	22.6	16.7		15.3	22.2	6.9	13.9	22.4		7.7	8.8	
LOS	C	B		B	C	A	B	C		A	A	
Approach Delay		17.3			17.1			22.3			8.7	
Approach LOS		B			B			C			A	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	59.1
Natural Cycle:	60
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	17.6
Intersection LOS:	B
Intersection Capacity Utilization:	82.1%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 16: Ninth Line & 5 Side Road



Queues  
16: Ninth Line & 5 Side Road



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	335	10	700	350	20	1190	45	515
v/c Ratio	0.29	0.32	0.03	0.67	0.52	0.05	0.76	0.14	0.29
Control Delay	22.6	16.7	15.3	22.2	6.9	13.9	22.4	7.7	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	16.7	15.3	22.2	6.9	13.9	22.4	7.7	8.8
Queue Length 50th (m)	3.5	14.8	0.8	36.6	4.3	1.1	49.8	2.3	16.2
Queue Length 95th (m)	11.3	24.3	3.8	53.0	21.6	5.8	#118.8	6.1	24.8
Internal Link Dist (m)		556.9		434.3			3096.2		305.9
Turn Bay Length (m)	40.0		40.0		40.0	40.0		40.0	
Base Capacity (vph)	147	1096	318	1099	699	381	1564	322	1805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.31	0.03	0.64	0.50	0.05	0.76	0.14	0.29

Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 16: Ninth Line & 5 Side Road

2031 Background PM  
Premier Gateway Phase 1B Employment Area

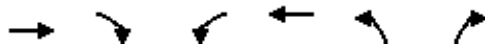


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	40	310	25	10	700	350	20	1175	15	45	480	35	
Future Volume (vph)	40	310	25	10	700	350	20	1175	15	45	480	35	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		4.0	6.0		
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95		
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00		1.00	0.99		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1752	3570		1805	3610	1615	1805	3602		1805	3540		
Flt Permitted	0.26	1.00		0.55	1.00	1.00	0.46	1.00		0.13	1.00		
Satd. Flow (perm)	484	3570		1045	3610	1615	878	3602		256	3540		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	40	310	25	10	700	350	20	1175	15	45	480	35	
RTOR Reduction (vph)	0	10	0	0	0	215	0	1	0	0	9	0	
Lane Group Flow (vph)	40	325	0	10	700	135	20	1189	0	45	506	0	
Heavy Vehicles (%)	3%	0%	0%	0%	0%	0%	0%	0%	3%	0%	1%	0%	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA		
Protected Phases		4			8			2		1	6		
Permitted Phases	4			8		8	2			6			
Actuated Green, G (s)	17.1	17.1		17.1	17.1	17.1	25.7	25.7		32.5	32.5		
Effective Green, g (s)	17.1	17.1		17.1	17.1	17.1	25.7	25.7		32.5	32.5		
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28	0.42	0.42		0.53	0.53		
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		4.0	6.0		
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	5.5	5.5		3.0	5.5		
Lane Grp Cap (vph)	134	991		290	1002	448	366	1502		205	1867		
v/s Ratio Prot		0.09			c0.19			c0.33		0.01	c0.14		
v/s Ratio Perm	0.08			0.01		0.08	0.02			0.11			
v/c Ratio	0.30	0.33		0.03	0.70	0.30	0.05	0.79		0.22	0.27		
Uniform Delay, d1	17.5	17.7		16.2	19.9	17.5	10.7	15.6		9.6	8.0		
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		0.1	2.2	0.4	0.3	4.3		0.5	0.4		
Delay (s)	19.0	17.9		16.3	22.2	18.0	11.0	20.0		10.2	8.4		
Level of Service	B	B		B	C	B	B	B		B	A		
Approach Delay (s)		18.0			20.7			19.8			8.5		
Approach LOS		B			C			B			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			17.9									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			61.6									Sum of lost time (s)	16.0
Intersection Capacity Utilization			82.1%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													



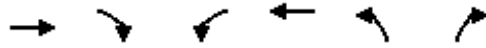
Lanes, Volumes, Timings  
21: "Street C" & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖↖	↑↑↑	↖↖	↗
Traffic Volume (vph)	415	165	325	1530	275	105
Future Volume (vph)	415	165	325	1530	275	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		50.0	50.0		0.0	0.0
Storage Lanes		1	2		2	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.91	1.00	0.97	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5085	1583	3433	5085	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5085	1583	3433	5085	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		165				105
Link Speed (k/h)	80			80	50	
Link Distance (m)	441.5			463.9	423.9	
Travel Time (s)	19.9			20.9	30.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	415	165	325	1530	275	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	415	165	325	1530	275	105
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5

Lanes, Volumes, Timings  
 21: "Street C" & Steeles Avenue

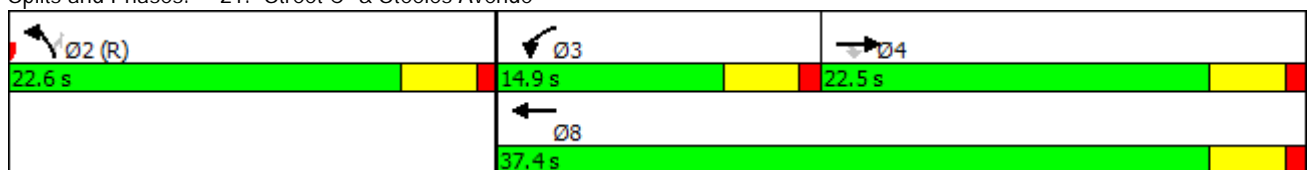


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	22.5	22.5	14.9	37.4	22.6	22.6
Total Split (%)	37.5%	37.5%	24.8%	62.3%	37.7%	37.7%
Maximum Green (s)	18.0	18.0	10.4	32.9	18.1	18.1
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	11.7	11.7	9.7	26.0	25.0	25.0
Actuated g/C Ratio	0.20	0.20	0.16	0.43	0.42	0.42
v/c Ratio	0.42	0.37	0.58	0.70	0.19	0.15
Control Delay	21.7	6.2	27.7	15.3	12.8	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	6.2	27.7	15.3	12.8	4.3
LOS	C	A	C	B	B	A
Approach Delay	17.3			17.4	10.5	
Approach LOS	B			B	B	

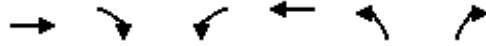
Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	16.5
Intersection LOS:	B
Intersection Capacity Utilization	44.9%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 21: "Street C" & Steeles Avenue



**Queues**  
**21: "Street C" & Steeles Avenue**

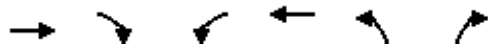


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	415	165	325	1530	275	105
v/c Ratio	0.42	0.37	0.58	0.70	0.19	0.15
Control Delay	21.7	6.2	27.7	15.3	12.8	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	6.2	27.7	15.3	12.8	4.3
Queue Length 50th (m)	15.8	0.0	17.9	50.1	9.8	0.0
Queue Length 95th (m)	20.8	11.8	29.2	51.3	20.0	8.9
Internal Link Dist (m)	417.5			439.9	399.9	
Turn Bay Length (m)		50.0	50.0			
Base Capacity (vph)	1525	590	595	2788	1431	721
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.28	0.55	0.55	0.19	0.15
<b>Intersection Summary</b>						

# HCM Signalized Intersection Capacity Analysis

## 21: "Street C" & Steeles Avenue

2031 Background PM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖↗	↑↑↑	↖↗	↗
Traffic Volume (vph)	415	165	325	1530	275	105
Future Volume (vph)	415	165	325	1530	275	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.91	1.00	0.97	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	3433	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	415	165	325	1530	275	105
RTOR Reduction (vph)	0	133	0	0	0	61
Lane Group Flow (vph)	415	32	325	1530	275	44
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	11.8	11.8	9.7	26.0	25.0	25.0
Effective Green, g (s)	11.8	11.8	9.7	26.0	25.0	25.0
Actuated g/C Ratio	0.20	0.20	0.16	0.43	0.42	0.42
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1000	311	555	2203	1430	659
v/s Ratio Prot	0.08		0.09	c0.30	c0.08	
v/s Ratio Perm		0.02				0.03
v/c Ratio	0.41	0.10	0.59	0.69	0.19	0.07
Uniform Delay, d1	21.1	19.8	23.3	13.8	11.1	10.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	1.6	1.0	0.3	0.2
Delay (s)	21.4	19.9	24.9	14.7	11.4	10.7
Level of Service	C	B	C	B	B	B
Approach Delay (s)	20.9			16.5	11.2	
Approach LOS	C			B	B	

### Intersection Summary

HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group