

Lanes, Volumes, Timings

2031 Total AM

1: Brownridge Road/Fifth Line & Steeles Avenue

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	1760	80	25	785	60	15	0	15	35	10	100
Future Volume (vph)	215	1760	80	25	785	60	15	0	15	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		0.989			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	0.322			0.111			0.751			0.748		
Satd. Flow (perm)	572	4252	1524	169	3744	0	1170	1154	0	1015	1900	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		36			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	1760	80	25	785	60	15	0	15	35	10	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	1760	80	25	845	0	15	15	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

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2031 Total AM  
Premier Gateway Phase 1B Employment Area

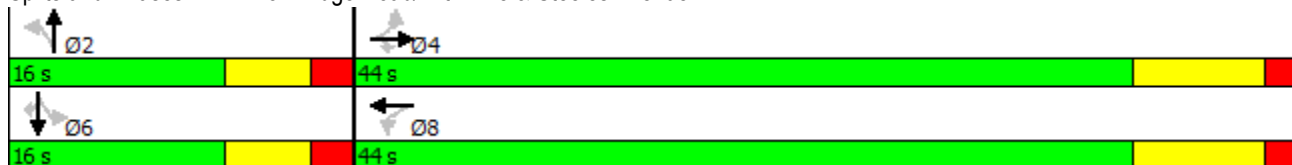


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	33.0	33.0	33.0	33.0	33.0		16.0	16.0		16.0	16.0	16.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0		16.0	16.0		16.0	16.0	16.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	73.3%		26.7%	26.7%		26.7%	26.7%	26.7%
Maximum Green (s)	36.0	36.0	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)	43.9	43.9	43.9	43.9	43.9		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	0.54	0.59	0.07	0.21	0.32		0.08	0.06		0.22	0.03	0.31
Control Delay	14.6	8.0	1.7	11.4	5.4		22.5	0.4		25.9	21.4	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	14.6	8.0	1.7	11.4	5.4		22.5	0.4		25.9	21.4	8.7
LOS	B	A	A	B	A		C	A		C	C	A
Approach Delay		8.4			5.6			11.5			13.8	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 63  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 7.9  
 Intersection Capacity Utilization 81.8%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service D

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

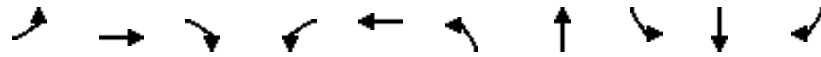


Queues

2031 Total AM

1: Brownridge Road/Fifth Line & Steeles Avenue

Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	215	1760	80	25	845	15	15	35	10	100
v/c Ratio	0.54	0.59	0.07	0.21	0.32	0.08	0.06	0.22	0.03	0.31
Control Delay	14.6	8.0	1.7	11.4	5.4	22.5	0.4	25.9	21.4	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	14.6	8.0	1.7	11.4	5.4	22.5	0.4	25.9	21.4	8.7
Queue Length 50th (m)	13.8	44.0	0.0	1.2	15.1	1.5	0.0	3.6	1.0	0.0
Queue Length 95th (m)	#47.4	58.9	4.0	6.1	21.6	6.0	0.0	10.8	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)	398	2965	1086	117	2621	187	261	162	304	319
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	0.54	0.59	0.07	0.21	0.32	0.08	0.06	0.22	0.03	0.31

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 Total 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	1760	80	25	785	60	15	0	15	35	10	100
Future Volume (vph)	215	1760	80	25	785	60	15	0	15	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	3746		1480	1154		1289	1900	1468
Flt Permitted	0.32	1.00	1.00	0.11	1.00		0.75	1.00		0.75	1.00	1.00
Satd. Flow (perm)	572	4252	1524	168	3746		1170	1154		1015	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	1760	80	25	785	60	15	0	15	35	10	100
RTOR Reduction (vph)	0	0	27	0	12	0	0	13	0	0	0	88
Lane Group Flow (vph)	215	1760	53	25	833	0	15	2	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)	42.2	42.2	42.2	42.2	42.2		7.9	7.9		7.9	7.9	7.9
Effective Green, g (s)	42.2	42.2	42.2	42.2	42.2		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)	376	2799	1003	110	2466		144	142		125	234	180
v/s Ratio Prot		c0.41			0.22			0.00				0.01
v/s Ratio Perm	0.38		0.03	0.15			0.01			c0.03		0.01
v/c Ratio	0.57	0.63	0.05	0.23	0.34		0.10	0.01		0.28	0.04	0.07
Uniform Delay, d1	6.0	6.4	3.9	4.4	4.8		25.0	24.7		25.5	24.8	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.2	1.1	0.1	4.7	0.4		0.3	0.0		1.2	0.1	0.2
Delay (s)	12.2	7.5	4.0	9.1	5.2		25.3	24.7		26.7	24.8	25.0
Level of Service	B	A	A	A	A		C	C		C	C	C
Approach Delay (s)		7.8			5.3			25.0			25.4	
Approach LOS		A			A			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			8.1			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			64.1			Sum of lost time (s)				14.0		
Intersection Capacity Utilization			81.8%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

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

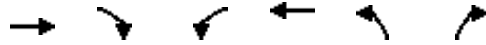
2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1810	35	10	870	10	5
Future Volume (vph)	1810	35	10	870	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			0.113		0.950	
Satd. Flow (perm)	4217	1538	184	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)	1810	35	10	870	10	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1810	35	10	870	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

2031 Total AM  
Premier Gateway Phase 1B Employment Area



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)	34.0	34.0	34.0	34.0	16.0	16.0
Total Split (%)	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Maximum Green (s)	26.0	26.0	26.0	26.0	10.0	10.0
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)	48.3	48.3	48.3	48.3	10.1	10.1
Actuated g/C Ratio	0.93	0.93	0.93	0.93	0.19	0.19
v/c Ratio	0.46	0.02	0.06	0.25	0.03	0.02
Control Delay	2.7	1.3	3.7	1.9	20.3	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.7	1.3	3.7	1.9	20.3	14.2
LOS	A	A	A	A	C	B
Approach Delay	2.7			1.9	18.3	
Approach LOS	A			A	B	

Intersection Summary







Area Type:	Other
Cycle Length:	50
Actuated Cycle Length:	52.2
Natural Cycle:	50
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.46
Intersection Signal Delay:	2.5
Intersection Capacity Utilization	55.0%
Analysis Period (min)	15
Intersection LOS:	A
ICU Level of Service	B

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



Queues  
2: Fifth Line South & Steeles Avenue

2031 Total AM  
Premier Gateway Phase 1B Employment Area

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1810	35	10	870	10	5
v/c Ratio	0.46	0.02	0.06	0.25	0.03	0.02
Control Delay	2.7	1.3	3.7	1.9	20.3	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.7	1.3	3.7	1.9	20.3	14.2
Queue Length 50th (m)	0.0	0.0	0.0	0.0	0.8	0.0
Queue Length 95th (m)	61.2	2.6	2.3	22.9	4.9	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)	3905	1427	170	3506	299	317
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	0.46	0.02	0.06	0.25	0.03	0.02
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
2: Fifth Line South & Steeles Avenue

2031 Total AM  
Premier Gateway Phase 1B Employment Area

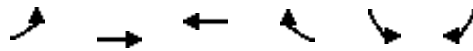


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1810	35	10	870	10	5
Future Volume (vph)	1810	35	10	870	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	6.0	6.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Flt	1.00	0.85	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	0.11	1.00	0.95	1.00
Satd. Flow (perm)	4217	1538	184	3786	1543	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1810	35	10	870	10	5
RTOR Reduction (vph)	0	10	0	0	0	5
Lane Group Flow (vph)	1810	25	10	870	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)	41.5	41.5	41.5	41.5	1.6	1.6
Effective Green, g (s)	41.5	41.5	41.5	41.5	1.6	1.6
Actuated g/C Ratio	0.73	0.73	0.73	0.73	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)	3064	1117	133	2751	43	45
v/s Ratio Prot	c0.43			0.23		
v/s Ratio Perm		0.02	0.05		c0.01	0.00
v/c Ratio	0.59	0.02	0.08	0.32	0.23	0.00
Uniform Delay, d1	3.7	2.2	2.3	2.8	27.1	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	1.1	0.3	2.8	0.0
Delay (s)	4.6	2.2	3.4	3.1	29.9	27.0
Level of Service	A	A	A	A	C	C
Approach Delay (s)	4.5			3.1	28.9	
Approach LOS	A			A	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			4.2		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.58			
Actuated Cycle Length (s)			57.1		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

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	65	1865	840	30	245	60
Future Volume (vph)	65	1865	840	30	245	60
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)	65	1865	840	30	245	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	1865	840	30	245	60
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	

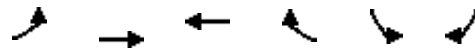
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.3%
ICU Level of Service	B
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 3: Steeles Avenue & Sixth Line

























2031 Total AM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR					
Lane Configurations	↶	↑↑↑↑	↑↑↑↑	↷	↶	↷					
Traffic Volume (veh/h)	65	1865	840	30	245	60					
Future Volume (Veh/h)	65	1865	840	30	245	60					
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)	65	1865	840	30	245	60					
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	870				1592	280					
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	870				1592	280					
tC, single (s)	4.2				8.3	7.0					
tC, 2 stage (s)											
tF (s)	2.2				4.2	3.3					
p0 queue free %	91				0	92					
cM capacity (veh/h)	764				44	714					
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2	
Volume Total	65	622	622	622	280	280	280	30	245	60	
Volume Left	65	0	0	0	0	0	0	0	245	0	
Volume Right	0	0	0	0	0	0	0	30	0	60	
cSH	764	1700	1700	1700	1700	1700	1700	1700	44	714	
Volume to Capacity	0.09	0.37	0.37	0.37	0.16	0.16	0.16	0.02	5.59	0.08	
Queue Length 95th (m)	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Err	2.2	
Control Delay (s)	10.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Err	10.5	
Lane LOS	B								F	B	
Approach Delay (s)	0.3				0.0				8034.0		
Approach LOS									F		
Intersection Summary											
Average Delay			789.4								
Intersection Capacity Utilization			56.3%	ICU Level of Service				B			
Analysis Period (min)			15								

Lanes, Volumes, Timings  
4: Sixth Line South/"Street A" & Steeles Avenue

2031 Total 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)	400	1605	5	35	880	175	10	80	75	40	20	85
Future Volume (vph)	400	1605	5	35	880	175	10	80	75	40	20	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		30.0	50.0		30.0	50.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			100.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.927				0.879
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4252	1615	1805	4715	1583	1805	1743	0	1770	1637	0
Flt Permitted	0.232			0.141			0.689			0.659		
Satd. Flow (perm)	432	4252	1615	268	4715	1583	1309	1743	0	1228	1637	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95			165		54				85
Link Speed (k/h)		80			80			50				50
Link Distance (m)		463.9			497.0			166.1				330.6
Travel Time (s)		20.9			22.4			12.0				23.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	22%	0%	0%	10%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	400	1605	5	35	880	175	10	80	75	40	20	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	400	1605	5	35	880	175	10	155	0	40	105	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)		7.2			7.2			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	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	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2				6
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	

Lanes, Volumes, Timings  
4: Sixth Line South/"Street A" & Steeles Avenue

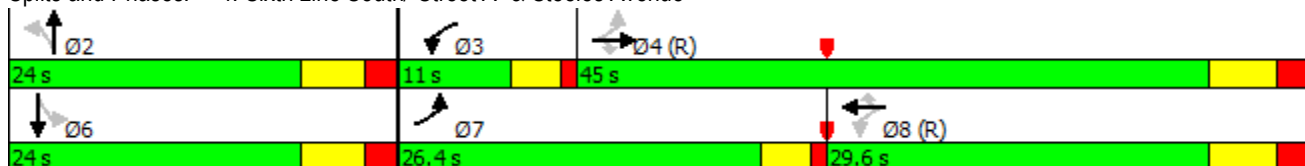
2031 Total AM  
Premier Gateway Phase 1B Employment Area

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	9.5	24.0	24.0	11.0	24.0	24.0	24.0	24.0		24.0	24.0	
Total Split (s)	26.4	45.0	45.0	11.0	29.6	29.6	24.0	24.0		24.0	24.0	
Total Split (%)	33.0%	56.3%	56.3%	13.8%	37.0%	37.0%	30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	22.4	39.0	39.0	7.0	23.6	23.6	18.0	18.0		18.0	18.0	
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	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)	4.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	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)	52.0	43.8	43.8	38.6	30.6	30.6	18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.65	0.55	0.55	0.48	0.38	0.38	0.22	0.22		0.22	0.22	
v/c Ratio	0.74	0.69	0.01	0.14	0.49	0.25	0.03	0.36		0.14	0.24	
Control Delay	26.8	31.0	0.0	8.7	20.9	5.3	24.8	19.7		26.5	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	26.8	31.0	0.0	8.7	20.9	5.3	24.8	19.7		26.5	10.2	
LOS	C	C	A	A	C	A	C	B		C	B	
Approach Delay		30.1			18.0			20.0			14.7	
Approach LOS		C			B			C			B	

Intersection Summary

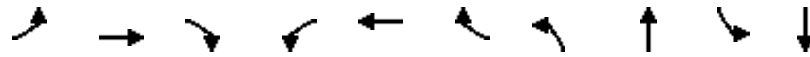
Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 4:EBTL & d 8:WB L, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay: 25.1 Intersection LOS: C  
 Intersection Capacity Utilization 70.5% ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Sixth Line South/"Street A" & Steeles Avenue



Queues  
4: Sixth Line South/"Street A" & Steeles Avenue

2031 Total AM  
Premier Gateway Phase 1B Employment Area































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	400	1605	5	35	880	175	10	155	40	105
v/c Ratio	0.74	0.69	0.01	0.14	0.49	0.25	0.03	0.36	0.14	0.24
Control Delay	26.8	31.0	0.0	8.7	20.9	5.3	24.8	19.7	26.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	31.0	0.0	8.7	20.9	5.3	24.8	19.7	26.5	10.2
Queue Length 50th (m)	57.8	92.7	0.0	1.7	37.6	1.0	1.3	13.3	5.2	2.5
Queue Length 95th (m)	m81.3	109.9	m0.0	4.6	57.8	15.1	5.3	29.8	13.4	14.8
Internal Link Dist (m)		439.9			473.0			142.1		306.6
Turn Bay Length (m)	50.0		30.0	50.0		30.0	50.0		55.0	
Base Capacity (vph)	655	2326	926	266	1800	706	294	434	276	434
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	0.61	0.69	0.01	0.13	0.49	0.25	0.03	0.36	0.14	0.24

Intersection Summary

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

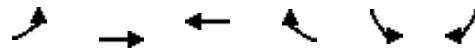
HCM Signalized Intersection Capacity Analysis  
 4: Sixth Line South/"Street A" & Steeles Avenue

2031 Total 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)	400	1605	5	35	880	175	10	80	75	40	20	85
Future Volume (vph)	400	1605	5	35	880	175	10	80	75	40	20	85
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	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	0.85	1.00	0.93		1.00	0.88	
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)	1770	4252	1615	1805	4715	1583	1805	1744		1770	1637	
Flt Permitted	0.23	1.00	1.00	0.14	1.00	1.00	0.69	1.00		0.66	1.00	
Satd. Flow (perm)	432	4252	1615	269	4715	1583	1309	1744		1227	1637	
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)	400	1605	5	35	880	175	10	80	75	40	20	85
RTOR Reduction (vph)	0	0	2	0	0	102	0	42	0	0	66	0
Lane Group Flow (vph)	400	1605	3	35	880	73	10	113	0	40	39	0
Heavy Vehicles (%)	2%	22%	0%	0%	10%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	50.0	42.2	42.2	34.4	30.6	30.6	18.0	18.0		18.0	18.0	
Effective Green, g (s)	50.0	42.2	42.2	34.4	30.6	30.6	18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.62	0.53	0.53	0.43	0.38	0.38	0.22	0.22		0.22	0.22	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	527	2242	851	188	1803	605	294	392		276	368	
v/s Ratio Prot	c0.15	0.38		0.01	0.19			c0.06			0.02	
v/s Ratio Perm	c0.33		0.00	0.07		0.05	0.01			0.03		
v/c Ratio	0.76	0.72	0.00	0.19	0.49	0.12	0.03	0.29		0.14	0.11	
Uniform Delay, d1	8.8	14.3	8.9	13.3	18.8	16.0	24.2	25.7		24.8	24.6	
Progression Factor	2.45	2.07	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.1	1.3	0.0	0.5	0.9	0.4	0.2	1.9		1.1	0.6	
Delay (s)	25.8	31.0	8.9	13.7	19.7	16.4	24.4	27.5		25.9	25.2	
Level of Service	C	C	A	B	B	B	C	C		C	C	
Approach Delay (s)		29.9			19.0			27.4			25.4	
Approach LOS		C			B			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			26.1			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			70.5%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total AM  
Premier Gateway Phase 1B Employment Area



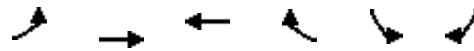
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	95	1540	870	85	25	65
Future Volume (vph)	95	1540	870	85	25	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			30.0	30.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	100.0				7.5	
Lane Util. Factor	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	446.2		1126.5	
Travel Time (s)		29.8	26.8		67.6	
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)	95	1540	870	85	25	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	95	1540	870	85	25	65
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	39.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 5: Steeles Avenue & Hornby Road

2031 Total AM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR						
Lane Configurations	↶	↑↑↑↑	↑↑↑↑	↷	↶	↷						
Traffic Volume (veh/h)	95	1540	870	85	25	65						
Future Volume (Veh/h)	95	1540	870	85	25	65						
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)	95	1540	870	85	25	65						
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None	None									
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	955				1573	290						
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	955				1573	290						
tC, single (s)	4.2				7.1	7.0						
tC, 2 stage (s)												
tF (s)	2.3				3.7	3.4						
p0 queue free %	86				67	91						
cM capacity (veh/h)	686				75	692						
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2		
Volume Total	95	513	513	513	290	290	290	85	25	65		
Volume Left	95	0	0	0	0	0	0	0	25	0		
Volume Right	0	0	0	0	0	0	0	85	0	65		
cSH	686	1700	1700	1700	1700	1700	1700	1700	75	692		
Volume to Capacity	0.14	0.30	0.30	0.30	0.17	0.17	0.17	0.05	0.33	0.09		
Queue Length 95th (m)	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	2.5		
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.5	10.7		
Lane LOS	B								F	B		
Approach Delay (s)	0.6				0.0				28.7			
Approach LOS									D			
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			39.8%	ICU Level of Service				A				
Analysis Period (min)			15									



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

2031 Total 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)	205	885	130	705	825	95	180	795	530	245	1495	360
Future Volume (vph)	205	885	130	705	825	95	180	795	530	245	1495	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		40.0	175.0		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			0.256		
Satd. Flow (perm)	2633	4433	1179	3400	4084	1455	2148	4550	1524	472	4940	950
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168			126			446			281
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		433.6			311.3			332.0			289.5	
Travel Time (s)		26.0			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)	205	885	130	705	825	95	180	795	530	245	1495	360
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	885	130	705	825	95	180	795	530	245	1495	360
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

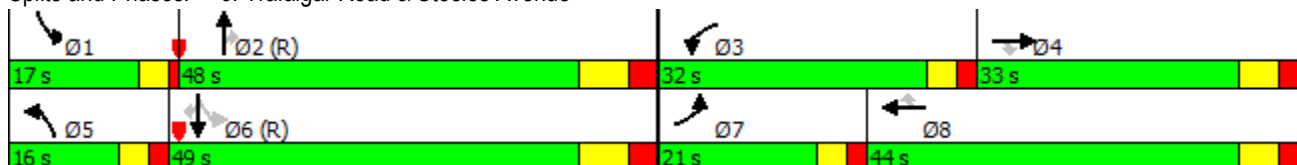
2031 Total AM  
Premier Gateway Phase 1B Employment Area

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)	21.0	33.0	33.0	32.0	44.0	44.0	16.0	48.0	48.0	17.0	49.0	49.0
Total Split (%)	16.2%	25.4%	25.4%	24.6%	33.8%	33.8%	12.3%	36.9%	36.9%	13.1%	37.7%	37.7%
Maximum Green (s)	16.0	26.0	26.0	27.0	37.0	37.0	11.0	40.0	40.0	13.0	41.0	41.0
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)	14.3	26.0	26.0	27.0	38.7	38.7	11.0	40.3	40.3	57.7	41.0	41.0
Actuated g/C Ratio	0.11	0.20	0.20	0.21	0.30	0.30	0.08	0.31	0.31	0.44	0.32	0.32
v/c Ratio	0.71	1.00	0.35	1.00	0.68	0.18	0.99	0.56	0.68	0.73	0.96	0.73
Control Delay	69.5	81.8	5.2	84.9	43.9	3.3	124.6	39.5	11.7	33.7	57.0	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	81.8	5.2	84.9	43.9	3.3	124.6	39.5	11.7	33.7	57.0	28.9
LOS	E	F	A	F	D	A	F	D	B	C	E	C
Approach Delay		71.6			59.3			39.9			49.5	
Approach LOS		E			E			D			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 53.9  
 Intersection Capacity Utilization 93.6%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service F

Splits and Phases: 6: Trafalgar Road & Steeles Avenue



Queues  
6: Trafalgar Road & Steeles Avenue

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	205	885	130	705	825	95	180	795	530	245	1495	360
v/c Ratio	0.71	1.00	0.35	1.00	0.68	0.18	0.99	0.56	0.68	0.73	0.96	0.73
Control Delay	69.5	81.8	5.2	84.9	43.9	3.3	124.6	39.5	11.7	33.7	57.0	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	81.8	5.2	84.9	43.9	3.3	124.6	39.5	11.7	33.7	57.0	28.9
Queue Length 50th (m)	27.6	88.2	0.0	98.8	72.6	0.0	25.4	65.8	16.6	55.4	157.3	58.6
Queue Length 95th (m)	41.2	#120.1	8.6	#141.1	89.7	6.9	#50.5	80.4	58.4	m58.0	#183.5	m72.4
Internal Link Dist (m)		409.6			287.3			308.0			265.5	
Turn Bay Length (m)	115.0		40.0	175.0		70.0	100.0		65.0	250.0		80.0
Base Capacity (vph)	324	886	370	706	1216	521	181	1409	779	338	1558	491
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	0.63	1.00	0.35	1.00	0.68	0.18	0.99	0.56	0.68	0.72	0.96	0.73

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis  
6: Trafalgar Road & Steeles Avenue

2031 Total 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)	205	885	130	705	825	95	180	795	530	245	1495	360
Future Volume (vph)	205	885	130	705	825	95	180	795	530	245	1495	360
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt 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
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	2633	4433	1179	3400	4084	1455	2148	4550	1524	473	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)	205	885	130	705	825	95	180	795	530	245	1495	360
RTOR Reduction (vph)	0	0	104	0	0	67	0	0	308	0	0	192
Lane Group Flow (vph)	205	885	26	705	825	28	180	795	222	245	1495	168
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)	14.3	26.0	26.0	27.0	38.7	38.7	11.0	40.3	40.3	53.7	41.0	41.0
Effective Green, g (s)	14.3	26.0	26.0	27.0	38.7	38.7	11.0	40.3	40.3	53.7	41.0	41.0
Actuated g/C Ratio	0.11	0.20	0.20	0.21	0.30	0.30	0.08	0.31	0.31	0.41	0.32	0.32
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)	289	886	235	706	1215	433	181	1410	472	320	1558	299
v/s Ratio Prot	0.08	c0.20		c0.21	0.20		c0.08	0.17		0.07	c0.30	
v/s Ratio Perm			0.02			0.02			0.15	0.24		0.18
v/c Ratio	0.71	1.00	0.11	1.00	0.68	0.07	0.99	0.56	0.47	0.77	0.96	0.56
Uniform Delay, d1	55.8	52.0	42.5	51.5	40.2	32.7	59.5	37.5	36.2	26.7	43.7	37.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.15	1.09	2.42
Incremental Delay, d2	7.7	29.7	0.2	33.3	1.5	0.1	65.0	1.6	3.3	5.8	9.6	4.0
Delay (s)	63.6	81.7	42.8	84.8	41.7	32.8	124.5	39.1	39.6	36.5	57.1	93.6
Level of Service	E	F	D	F	D	C	F	D	D	D	E	F
Approach Delay (s)		74.5			59.9			49.5			60.9	
Approach LOS		E			E			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			60.6			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)			25.0			
Intersection Capacity Utilization			93.6%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↘	↖
Traffic Volume (vph)	1595	10	10	1600	35	10
Future Volume (vph)	1595	10	10	1600	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			0.118		0.950	
Satd. Flow (perm)	4848	1615	192	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)	1595	10	10	1600	35	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1595	10	10	1600	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

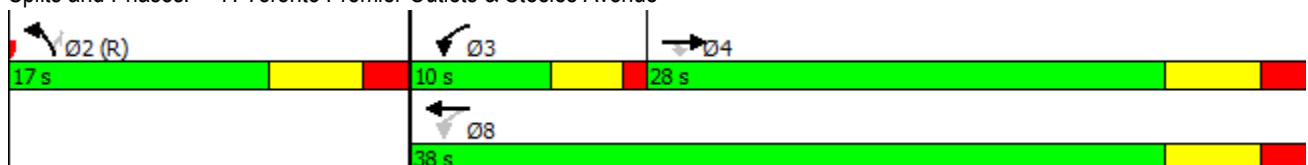








Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	26.0	26.0	10.0	26.0	17.0	17.0
Total Split (s)	28.0	28.0	10.0	38.0	17.0	17.0
Total Split (%)	50.9%	50.9%	18.2%	69.1%	30.9%	30.9%
Maximum Green (s)	22.0	22.0	6.0	32.0	11.0	11.0
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	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)	30.0	30.0	34.0	32.0	11.0	11.0
Actuated g/C Ratio	0.55	0.55	0.62	0.58	0.20	0.20
v/c Ratio	0.60	0.01	0.04	0.60	0.06	0.03
Control Delay	10.8	5.2	4.4	8.6	18.2	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	5.2	4.4	8.6	18.2	11.0
LOS	B	A	A	A	B	B
Approach Delay	10.8			8.5	16.6	
Approach LOS	B			A	B	

Intersection Summary

Area Type:	Other
Cycle Length:	55
Actuated Cycle Length:	55
Offset:	0 (0%), Referenced to phase 2:NBL an 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	9.8
Intersection Capacity Utilization	49.2%
Analysis Period (min)	15
Intersection LOS:	A
ICU Level of Service	A

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



						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1595	10	10	1600	35	10
v/c Ratio	0.60	0.01	0.04	0.60	0.06	0.03
Control Delay	10.8	5.2	4.4	8.6	18.2	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	5.2	4.4	8.6	18.2	11.0
Queue Length 50th (m)	32.9	0.0	0.4	34.0	1.5	0.0
Queue Length 95th (m)	69.5	2.3	1.6	45.7	4.6	3.2
Internal Link Dist (m)	287.3			176.7	95.1	
Turn Bay Length (m)		130.0	45.0			40.0
Base Capacity (vph)	2644	885	266	2670	609	331
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	0.60	0.01	0.04	0.60	0.06	0.03
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
7: Toronto Premier Outlets & Steeles Avenue

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1595	10	10	1600	35	10
Future Volume (vph)	1595	10	10	1600	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
Flt	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	191	4590	3045	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1595	10	10	1600	35	10
RTOR Reduction (vph)	0	5	0	0	0	9
Lane Group Flow (vph)	1595	5	10	1600	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)	30.0	30.0	35.2	35.2	7.8	7.8
Effective Green, g (s)	30.0	30.0	35.2	35.2	7.8	7.8
Actuated g/C Ratio	0.55	0.55	0.64	0.64	0.14	0.14
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)	2644	880	151	2937	431	229
v/s Ratio Prot	c0.33		0.00	c0.35	c0.01	
v/s Ratio Perm		0.00	0.04			0.00
v/c Ratio	0.60	0.01	0.07	0.54	0.08	0.01
Uniform Delay, d1	8.5	5.7	4.5	5.5	20.5	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0	0.2	0.7	0.4	0.0
Delay (s)	9.5	5.7	4.7	6.2	20.9	20.3
Level of Service	A	A	A	A	C	C
Approach Delay (s)	9.5			6.2	20.7	
Approach LOS	A			A	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			8.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			55.0		Sum of lost time (s)	16.0
Intersection Capacity Utilization			49.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						



8: Toronto Premium Outlets/Eighth Line & Steeles Avenue 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)	120	1470	20	45	1075	300	5	5	15	345	10	555
Future Volume (vph)	120	1470	20	45	1075	300	5	5	15	345	10	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	120.0		55.0	30.0		30.0	0.0		0.0	100.0		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
Frt			0.850			0.850		0.887			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	4673	1404	1752	4287	1482	2633	1536	0	1787	1605	0
Flt Permitted	0.142			0.157			0.950			0.463		
Satd. Flow (perm)	257	4673	1404	290	4287	1482	2633	1536	0	871	1605	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230			230		15			384	
Link Speed (k/h)		60			60			50			70	
Link Distance (m)		200.7			870.8			218.1			564.0	
Travel Time (s)		12.0			52.2			15.7			29.0	
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 (%)	5%	11%	15%	3%	21%	9%	33%	0%	13%	1%	0%	1%
Adj. Flow (vph)	120	1470	20	45	1075	300	5	5	15	345	10	555
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1470	20	45	1075	300	5	20	0	345	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		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8				6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		5.0	10.0	

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

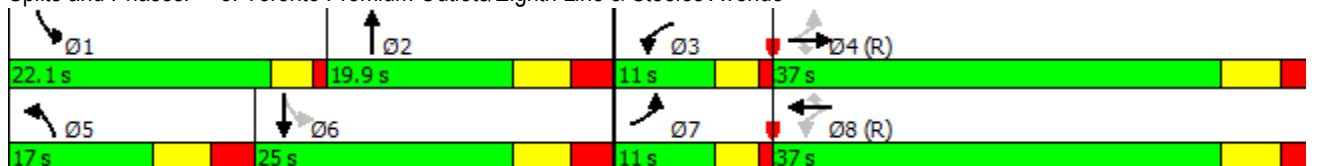


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	26.0	26.0	11.0	26.0	26.0	17.0	17.0		9.5	17.0	
Total Split (s)	11.0	37.0	37.0	11.0	37.0	37.0	17.0	19.9		22.1	25.0	
Total Split (%)	12.2%	41.1%	41.1%	12.2%	41.1%	41.1%	18.9%	22.1%		24.6%	27.8%	
Maximum Green (s)	7.0	31.0	31.0	7.0	31.0	31.0	10.0	12.9		18.1	18.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0		1.0	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		4.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	0.2	0.2	3.0	0.2	0.2	4.0	4.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	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)	41.6	35.4	35.4	40.0	31.0	31.0	10.0	11.2		38.0	31.6	
Actuated g/C Ratio	0.46	0.39	0.39	0.44	0.34	0.34	0.11	0.12		0.42	0.35	
v/c Ratio	0.52	0.80	0.03	0.19	0.73	0.45	0.02	0.10		0.51	0.70	
Control Delay	21.2	29.6	0.1	14.1	29.3	8.4	35.8	20.2		21.9	14.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	21.2	29.6	0.1	14.1	29.3	8.4	35.8	20.2		21.9	14.6	
LOS	C	C	A	B	C	A	D	C		C	B	
Approach Delay		28.6			24.4			23.4			17.4	
Approach LOS		C			C			C			B	

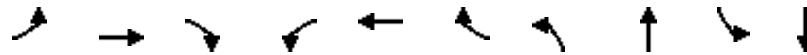
Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 4:EBTL & d 8:WB L, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 24.5 Intersection LOS: C  
 Intersection Capacity Utilization 83.3% ICU Level of Service E  
 Analysis Period (min) 15

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



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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	1470	20	45	1075	300	5	20	345	565
v/c Ratio	0.52	0.80	0.03	0.19	0.73	0.45	0.02	0.10	0.51	0.70
Control Delay	21.2	29.6	0.1	14.1	29.3	8.4	35.8	20.2	21.9	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	29.6	0.1	14.1	29.3	8.4	35.8	20.2	21.9	14.6
Queue Length 50th (m)	11.5	92.5	0.0	4.1	61.9	8.7	0.4	0.8	43.8	22.6
Queue Length 95th (m)	21.4	#122.8	0.0	9.8	78.2	29.3	2.1	7.3	67.9	#98.9
Internal Link Dist (m)		176.7			846.8			194.1		540.0
Turn Bay Length (m)	120.0		55.0	30.0		30.0			100.0	
Base Capacity (vph)	232	1837	691	242	1476	661	292	233	673	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	0.52	0.80	0.03	0.19	0.73	0.45	0.02	0.09	0.51	0.70

## Intersection Summary

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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

2031 Total 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	1470	20	45	1075	300	5	5	15	345	10	555
Future Volume (vph)	120	1470	20	45	1075	300	5	5	15	345	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		4.0	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	0.14	1.00	1.00	0.16	1.00	1.00	0.95	1.00		0.46	1.00	
Satd. Flow (perm)	257	4673	1404	290	4287	1482	2633	1536		872	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	1470	20	45	1075	300	5	5	15	345	10	555
RTOR Reduction (vph)	0	0	14	0	0	165	0	14	0	0	249	0
Lane Group Flow (vph)	120	1470	6	45	1075	135	5	6	0	345	316	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		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)	35.2	28.2	28.2	29.6	25.4	25.4	2.0	6.6		40.6	31.6	
Effective Green, g (s)	35.2	28.2	28.2	29.6	25.4	25.4	2.0	6.6		40.6	31.6	
Actuated g/C Ratio	0.39	0.31	0.31	0.33	0.28	0.28	0.02	0.07		0.45	0.35	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		4.0	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)	214	1464	439	163	1209	418	58	112		698	563	
v/s Ratio Prot	c0.04	c0.31		0.01	0.25		0.00	0.00		c0.16	c0.20	
v/s Ratio Perm	0.18		0.00	0.08		0.09				0.06		
v/c Ratio	0.56	1.00	0.01	0.28	0.89	0.32	0.09	0.05		0.49	0.56	
Uniform Delay, d1	19.5	30.9	21.3	22.6	31.0	25.5	43.1	38.8		16.9	23.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	24.5	0.1	0.9	10.0	2.0	0.9	0.3		0.6	4.0	
Delay (s)	22.9	55.4	21.4	23.5	40.9	27.5	44.0	39.1		17.5	27.6	
Level of Service	C	E	C	C	D	C	D	D		B	C	
Approach Delay (s)		52.6			37.5			40.1			23.8	
Approach LOS		D			D			D			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			40.5				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			83.3%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total AM  
 Premier Gateway Phase 1B Employment Area

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑↑	↘	↗
Traffic Volume (vph)	1825	5	5	1420	5	0
Future Volume (vph)	1825	5	5	1420	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)	1825	5	5	1420	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1830	0	5	1420	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	45.4%
Analysis Period (min)	15
	ICU Level of Service A

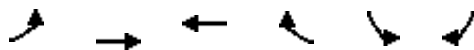
HCM Unsignalized Intersection Capacity Analysis  
 9: Eighth Line South & Steeles Avenue

2031 Total AM  
 Premier Gateway Phase 1B Employment Area

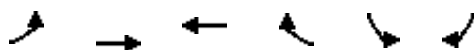
	→	↘	↙	←	↖	↗					
Movement	EBT	EBR	WBL	WBT	NBL	NBR					
Lane Configurations	↑↑↑		↘	↑↑↑	↘	↗					
Traffic Volume (veh/h)	1825	5	5	1420	5	0					
Future Volume (Veh/h)	1825	5	5	1420	5	0					
Sign Control	Free			Free	Stop						
Grade	0%			0%	0%						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Hourly flow rate (vph)	1825	5	5	1420	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			1830			2311	611				
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol			1830			2311	611				
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			85	100				
cM capacity (veh/h)			338			32	442				
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2		
Volume Total	730	730	370	5	473	473	473	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	338	1700	1700	1700	32	1700		
Volume to Capacity	0.43	0.43	0.22	0.01	0.28	0.28	0.28	0.15	0.00		
Queue Length 95th (m)	0.0	0.0	0.0	0.4	0.0	0.0	0.0	3.8	0.0		
Control Delay (s)	0.0	0.0	0.0	15.8	0.0	0.0	0.0	135.5	0.0		
Lane LOS				C				F		A	
Approach Delay (s)	0.0			0.1				135.5			
Approach LOS								F			
Intersection Summary											
Average Delay			0.2								
Intersection Capacity Utilization			45.4%		ICU Level of Service				A		
Analysis Period (min)			15								

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

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↕↕↕	↕↕↕	↗	↖↖	↗
Traffic Volume (vph)	120	1740	1345	335	890	115
Future Volume (vph)	120	1740	1345	335	890	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0			75.0	105.0	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	0.117				0.950	
Satd. Flow (perm)	192	4759	4396	1509	3433	1324
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				317		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	1740	1345	335	890	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	1740	1345	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	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	Free	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			Free		6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0		10.0	10.0

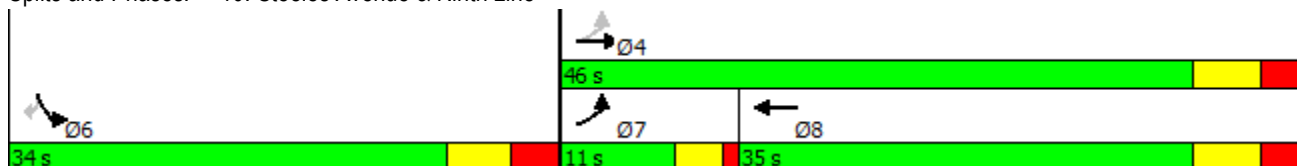


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	11.0	27.0	27.0		17.0	17.0
Total Split (s)	11.0	46.0	35.0		34.0	34.0
Total Split (%)	13.8%	57.5%	43.8%		42.5%	42.5%
Maximum Green (s)	7.0	39.0	28.0		27.0	27.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	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		3.0	3.0
Recall Mode	None	Max	Max		Max	Max
Act Effct Green (s)	42.0	39.0	30.2	80.0	27.0	27.0
Actuated g/C Ratio	0.52	0.49	0.38	1.00	0.34	0.34
v/c Ratio	0.55	0.75	0.81	0.22	0.77	0.22
Control Delay	20.4	19.1	28.2	0.3	29.1	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	19.1	28.2	0.3	29.1	5.2
LOS	C	B	C	A	C	A
Approach Delay		19.2	22.6		26.3	
Approach LOS		B	C		C	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	22.1
Intersection Capacity Utilization	73.0%
Analysis Period (min)	15
Intersection LOS:	C
ICU Level of Service	D

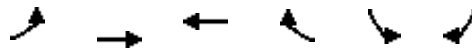
Splits and Phases: 10: Steeles Avenue & Ninth Line





Queues  
10: Steeles Avenue & Ninth Line

2031 Total AM  
Premier Gateway Phase 1B Employment Area



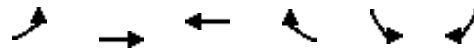
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	120	1740	1345	335	890	115
v/c Ratio	0.55	0.75	0.81	0.22	0.77	0.22
Control Delay	20.4	19.1	28.2	0.3	29.1	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	19.1	28.2	0.3	29.1	5.2
Queue Length 50th (m)	9.2	78.2	72.6	0.0	64.6	0.0
Queue Length 95th (m)	20.2	96.7	#95.3	0.0	86.7	10.7
Internal Link Dist (m)		501.4	145.8		3096.2	
Turn Bay Length (m)	70.0			75.0	105.0	
Base Capacity (vph)	220	2320	1659	1509	1158	523
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	0.55	0.75	0.81	0.22	0.77	0.22

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 Total AM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗↗	↖↖↖	↗	↖↖	↗
Traffic Volume (vph)	120	1740	1345	335	890	115
Future Volume (vph)	120	1740	1345	335	890	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0	7.0	4.0	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	0.12	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	192	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	1740	1345	335	890	115
RTOR Reduction (vph)	0	0	0	0	0	77
Lane Group Flow (vph)	120	1740	1345	335	890	38
Heavy Vehicles (%)	16%	9%	18%	7%	2%	22%
Turn Type	pm+pt	NA	NA	Free	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			Free		6
Actuated Green, G (s)	39.8	39.8	30.2	80.8	27.0	27.0
Effective Green, g (s)	39.8	39.8	30.2	80.8	27.0	27.0
Actuated g/C Ratio	0.49	0.49	0.37	1.00	0.33	0.33
Clearance Time (s)	4.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	0.2	0.2		3.0	3.0
Lane Grp Cap (vph)	189	2344	1643	1509	1147	442
v/s Ratio Prot	0.04	c0.37	c0.31		c0.26	
v/s Ratio Perm	0.27			0.22		0.03
v/c Ratio	0.63	0.74	0.82	0.22	0.78	0.09
Uniform Delay, d1	13.7	16.4	22.8	0.0	24.2	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	2.2	4.7	0.3	5.2	0.4
Delay (s)	20.5	18.6	27.5	0.3	29.4	18.8
Level of Service	C	B	C	A	C	B
Approach Delay (s)		18.7	22.1		28.1	
Approach LOS		B	C		C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			22.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			80.8		Sum of lost time (s)	18.0
Intersection Capacity Utilization			73.0%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

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

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	10	5	560	2115	505
Future Volume (vph)	120	10	5	560	2115	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	50.0	30.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.971	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1444	1380	1203	3112	3369	0
Flt Permitted	0.950		0.044			
Satd. Flow (perm)	1444	1380	56	3112	3369	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		10			69	
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)	120	10	5	560	2115	505
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	10	5	560	2620	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)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				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	Prot	Perm	Perm	NA	NA	
Protected Phases	2			8	4	
Permitted Phases		2	8			
Detector Phase	2	2	8	8	4	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	24.0	24.0	96.0	96.0	96.0	
Total Split (%)	20.0%	20.0%	80.0%	80.0%	80.0%	
Maximum Green (s)	18.0	18.0	90.0	90.0	90.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	None	None	
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)	18.0	18.0	90.0	90.0	90.0	
Actuated g/C Ratio	0.15	0.15	0.75	0.75	0.75	
v/c Ratio	0.56	0.05	0.12	0.24	1.03	
Control Delay	58.1	22.4	11.0	4.9	41.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	58.1	22.4	11.0	4.9	41.8	
LOS	E	C	B	A	D	
Approach Delay	55.3			4.9	41.8	
Approach LOS	E			A	D	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBL and 6:, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 36.1  
 Intersection Capacity Utilization 91.2%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service F

Splits and Phases: 11: Trafalgar Rd & Hornby Rd





Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	120	10	5	560	2620
v/c Ratio	0.56	0.05	0.12	0.24	1.03
Control Delay	58.1	22.4	11.0	4.9	41.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	22.4	11.0	4.9	41.8
Queue Length 50th (m)	27.9	0.0	0.3	19.1	~363.8
Queue Length 95th (m)	48.7	5.2	2.1	25.2	#406.1
Internal Link Dist (m)	30.4			111.9	191.8
Turn Bay Length (m)		50.0	30.0		
Base Capacity (vph)	216	215	42	2334	2544
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.05	0.12	0.24	1.03

**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  
 11: Trafalgar Rd & Hornby Rd

















2031 Total AM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↕↗	↕↖	↷
Traffic Volume (vph)	120	10	5	560	2115	505
Future Volume (vph)	120	10	5	560	2115	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1444	1380	1203	3112	3370	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1444	1380	56	3112	3370	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	10	5	560	2115	505
RTOR Reduction (vph)	0	9	0	0	17	0
Lane Group Flow (vph)	120	2	5	560	2603	0
Heavy Vehicles (%)	25%	17%	50%	16%	5%	0%
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	2			8	4	
Permitted Phases		2	8			
Actuated Green, G (s)	18.0	18.0	90.0	90.0	90.0	
Effective Green, g (s)	18.0	18.0	90.0	90.0	90.0	
Actuated g/C Ratio	0.15	0.15	0.75	0.75	0.75	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	207	42	2334	2527	
v/s Ratio Prot	c0.08			0.18	c0.77	
v/s Ratio Perm		0.00	0.09			
v/c Ratio	0.56	0.01	0.12	0.24	1.03	
Uniform Delay, d1	47.3	43.4	4.1	4.6	15.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.9	0.1	1.3	0.1	26.1	
Delay (s)	57.2	43.5	5.4	4.6	41.1	
Level of Service	E	D	A	A	D	
Approach Delay (s)	56.2			4.6	41.1	
Approach LOS	E			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			35.5		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.95			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			91.2%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

















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

2031 Total 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	995	20	35	280	5	10	35	30	60	75	40
Future Volume (vph)	20	995	20	35	280	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			0.995			0.993			0.983	
Satd. Flow (prot)	0	1850	0	0	1789	0	0	1530	0	0	1727	0
Flt Permitted		0.999			0.995			0.993			0.983	
Satd. Flow (perm)	0	1850	0	0	1789	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	995	20	35	280	5	10	35	30	60	75	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1035	0	0	320	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	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	80.5%						ICU Level of Service D					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
 12: Fifth Line & 5 Side Road

2031 Total 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	995	20	35	280	5	10	35	30	60	75	40
Future Volume (Veh/h)	20	995	20	35	280	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	995	20	35	280	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	285			1015			1475	1400	1005	1445	1408	282
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	285			1015			1475	1400	1005	1445	1408	282
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			78	71	89	14	41	95
cM capacity (veh/h)	1233			653			45	120	283	70	128	761
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1035	320	75	175								
Volume Left	20	35	10	60								
Volume Right	20	5	30	40								
cSH	1233	653	121	117								
Volume to Capacity	0.02	0.05	0.62	1.50								
Queue Length 95th (m)	0.4	1.4	25.3	100.3								
Control Delay (s)	0.5	1.8	74.5	331.9								
Lane LOS	A	A	F	F								
Approach Delay (s)	0.5	1.8	74.5	331.9								
Approach LOS			F	F								
<b>Intersection Summary</b>												
Average Delay			40.3									
Intersection Capacity Utilization			80.5%		ICU Level of Service				D			
Analysis Period (min)			15									



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

2031 Total 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	820	235	20	280	5	20	20	50	35	40	25
Future Volume (vph)	15	820	235	20	280	5	20	20	50	35	40	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		0.970			0.998			0.925			0.966	
Flt Protected		0.999			0.997			0.989			0.983	
Satd. Flow (prot)	0	1792	0	0	1798	0	0	1588	0	0	1743	0
Flt Permitted		0.999			0.997			0.989			0.983	
Satd. Flow (perm)	0	1792	0	0	1798	0	0	1588	0	0	1743	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	820	235	20	280	5	20	20	50	35	40	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1070	0	0	305	0	0	90	0	0	100	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	77.4%
ICU Level of Service	D
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 13: Sixth Line & 5 Side Road

2031 Total 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	820	235	20	280	5	20	20	50	35	40	25		
Future Volume (Veh/h)	15	820	235	20	280	5	20	20	50	35	40	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	820	235	20	280	5	20	20	50	35	40	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	285				1055				1335	1292	938	1350	1408	282
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	285				1055				1335	1292	938	1350	1408	282
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				97				79	87	83	61	70	97
cM capacity (veh/h)	1211				668				95	157	301	89	134	761
Direction, Lane #	EB 1	WB 1	NB 1	SB 1										
Volume Total	1070	305	90	100										
Volume Left	15	20	20	35										
Volume Right	235	5	50	25										
cSH	1211	668	179	138										
Volume to Capacity	0.01	0.03	0.50	0.72										
Queue Length 95th (m)	0.3	0.7	19.9	33.4										
Control Delay (s)	0.4	1.0	43.9	79.6										
Lane LOS	A	A	E	F										
Approach Delay (s)	0.4	1.0	43.9	79.6										
Approach LOS			E	F										
Intersection Summary														
Average Delay			8.1											
Intersection Capacity Utilization			77.4%	ICU Level of Service	D									
Analysis Period (min)			15											

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

2031 Total 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	260	170	155	15	35	630	75	45	2255	50
Future Volume (vph)	55	550	260	170	155	15	35	630	75	45	2255	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		115.0	40.0		0.0	40.0		20.0	50.0		20.0
Storage Lanes	1		1	1		0	1		1	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	1.00	1.00	0.95	1.00
Frt			0.850		0.987				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3539	1568	1687	3347	0	1444	2888	1357	1480	3374	1292
Flt Permitted	0.644			0.149			0.043			0.383		
Satd. Flow (perm)	1123	3539	1568	265	3347	0	65	2888	1357	596	3374	1292
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82		6				80			80
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	260	170	155	15	35	630	75	45	2255	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	550	260	170	170	0	35	630	75	45	2255	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		7.0	25.0	25.0	7.0	25.0	25.0

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

2031 Total 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	32.0	11.0	32.0	32.0
Total Split (s)	9.0	28.0	28.0	12.0	31.0		11.0	99.0	99.0	11.0	99.0	99.0
Total Split (%)	6.0%	18.7%	18.7%	8.0%	20.7%		7.3%	66.0%	66.0%	7.3%	66.0%	66.0%
Maximum Green (s)	5.0	22.0	22.0	8.0	25.0		7.0	93.0	93.0	7.0	93.0	93.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	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	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	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	Max
Walk Time (s)		7.0	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	20.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	29.0	22.0	22.0	35.2	26.9		100.6	93.1	93.1	100.6	93.1	93.1
Actuated g/C Ratio	0.20	0.15	0.15	0.24	0.18		0.68	0.63	0.63	0.68	0.63	0.63
v/c Ratio	0.23	1.04	0.86	1.21	0.28		0.32	0.35	0.08	0.10	1.06	0.06
Control Delay	48.5	110.5	68.0	188.2	53.1		18.3	13.9	2.2	7.2	65.9	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
Total Delay	48.5	110.5	68.0	188.2	53.1		18.3	13.9	2.2	7.2	65.9	0.8
LOS	D	F	E	F	D		B	B	A	A	E	A
Approach Delay		93.8			120.7			13.0			63.4	
Approach LOS		F			F			B			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 147.8

Natural Cycle: 150

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 65.4

Intersection LOS: E

Intersection Capacity Utilization 101.2%

ICU Level of Service G

Analysis Period (min) 15

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





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	55	550	260	170	170	35	630	75	45	2255	50
v/c Ratio	0.23	1.04	0.86	1.21	0.28	0.32	0.35	0.08	0.10	1.06	0.06
Control Delay	48.5	110.5	68.0	188.2	53.1	18.3	13.9	2.2	7.2	65.9	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
Total Delay	48.5	110.5	68.0	188.2	53.1	18.3	13.9	2.2	7.2	65.9	0.8
Queue Length 50th (m)	13.7	~99.2	56.6	~49.9	24.0	3.0	48.1	0.0	3.9	~413.0	0.0
Queue Length 95th (m)	26.6	#138.5	#107.6	#100.2	36.3	9.6	60.3	6.0	8.0	#453.7	1.8
Internal Link Dist (m)		199.8			641.2		240.1			238.0	
Turn Bay Length (m)	40.0		115.0	40.0		40.0		20.0	50.0		20.0
Base Capacity (vph)	238	527	303	140	614	109	1818	884	447	2124	843
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	1.04	0.86	1.21	0.28	0.32	0.35	0.08	0.10	1.06	0.06

#### 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

## 14: Trafalgar Rd & 5 Side Road

2031 Total 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	260	170	155	15	35	630	75	45	2255	50
Future Volume (vph)	55	550	260	170	155	15	35	630	75	45	2255	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	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	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	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	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1656	3539	1568	1687	3346		1444	2888	1357	1480	3374	1292
Flt Permitted	0.64	1.00	1.00	0.15	1.00		0.04	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	1123	3539	1568	265	3346		65	2888	1357	597	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	260	170	155	15	35	630	75	45	2255	50
RTOR Reduction (vph)	0	0	69	0	5	0	0	0	28	0	0	19
Lane Group Flow (vph)	55	550	191	170	165	0	35	630	47	45	2255	31
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	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	26.7	22.8	22.8	34.8	26.9		98.6	93.1	93.1	98.6	93.1	93.1
Effective Green, g (s)	26.7	22.8	22.8	34.8	26.9		98.6	93.1	93.1	98.6	93.1	93.1
Actuated g/C Ratio	0.18	0.15	0.15	0.23	0.18		0.66	0.62	0.62	0.66	0.62	0.62
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0	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	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	214	540	239	137	602		93	1799	845	426	2102	805
v/s Ratio Prot	0.01	0.16		c0.07	0.05		c0.01	0.22		0.00	c0.67	
v/s Ratio Perm	0.04		0.12	c0.22			0.23		0.03	0.07		0.02
v/c Ratio	0.26	1.02	0.80	1.24	0.27		0.38	0.35	0.06	0.11	1.07	0.04
Uniform Delay, d1	52.1	63.3	61.1	53.6	52.8		36.0	13.6	11.0	9.1	28.2	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	43.5	18.9	155.6	0.5		2.5	0.5	0.1	0.1	42.5	0.1
Delay (s)	52.8	106.8	80.0	209.2	53.3		38.6	14.1	11.1	9.2	70.6	11.0
Level of Service	D	F	E	F	D		D	B	B	A	E	B
Approach Delay (s)		95.3			131.3			15.0			68.2	
Approach LOS		F			F			B			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			69.5				HCM 2000 Level of Service				E	
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			149.4				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			101.2%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total 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	580	15	115	240	20	5	170	60	105	915	130
Future Volume (vph)	35	580	15	115	240	20	5	170	60	105	915	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.992			0.966			0.981	
Flt Protected		0.997			0.985			0.999		0.950		
Satd. Flow (prot)	0	3484	0	0	3376	0	0	1802	0	1805	1862	0
Flt Permitted		0.904			0.568			0.967		0.651		
Satd. Flow (perm)	0	3159	0	0	1947	0	0	1744	0	1237	1862	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			7			33			17	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		643.4			668.7			2522.4			454.5	
Travel Time (s)		38.6			40.1			129.7			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)	35	580	15	115	240	20	5	170	60	105	915	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	630	0	0	375	0	0	235	0	105	1045	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	

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

2031 Total 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	24.0		24.0	24.0	
Total Split (s)	24.0	24.0		24.0	24.0		56.0	56.0		56.0	56.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		50.0	50.0		50.0	50.0	
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)		17.7			17.7			50.0			50.0	
Actuated g/C Ratio		0.22			0.22			0.63			0.63	
v/c Ratio		0.90			1.22dl			0.21			0.14	0.89
Control Delay		47.5			50.1			6.0			6.7	24.2
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		47.5			50.1			6.0			6.7	24.2
LOS		D			D			A			A	C
Approach Delay		47.5			50.1			6.0				22.6
Approach LOS		D			D			A				C

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 79.7  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 31.9  
 Intersection Capacity Utilization 111.2%  
 Analysis Period (min) 15  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

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







Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	630	375	235	105	1045
v/c Ratio	0.90	1.22dl	0.21	0.14	0.89
Control Delay	47.5	50.1	6.0	6.7	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	50.1	6.0	6.7	24.2
Queue Length 50th (m)	51.2	29.8	12.2	6.1	124.6
Queue Length 95th (m)	#82.0	#54.7	21.8	12.4	#228.5
Internal Link Dist (m)	619.4	644.7	2498.4		430.5
Turn Bay Length (m)				25.0	
Base Capacity (vph)	716	445	1106	776	1175
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.88	0.84	0.21	0.14	0.89

#### Intersection Summary

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

Queue shown is maximum after two cycles.

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

# HCM Signalized Intersection Capacity Analysis

## 15: Eighth Line & 5 Side Road

2031 Total 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	580	15	115	240	20	5	170	60	105	915	130
Future Volume (vph)	35	580	15	115	240	20	5	170	60	105	915	130
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	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frt		1.00			0.99			0.97		1.00	0.98	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		3486			3375			1801		1805	1862	
Flt Permitted		0.90			0.57			0.97		0.65	1.00	
Satd. Flow (perm)		3161			1946			1743		1236	1862	
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	580	15	115	240	20	5	170	60	105	915	130
RTOR Reduction (vph)	0	2	0	0	5	0	0	12	0	0	6	0
Lane Group Flow (vph)	0	628	0	0	370	0	0	223	0	105	1039	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)		17.7			17.7			50.0		50.0	50.0	
Effective Green, g (s)		17.7			17.7			50.0		50.0	50.0	
Actuated g/C Ratio		0.22			0.22			0.63		0.63	0.63	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		702			432			1093		775	1168	
v/s Ratio Prot											c0.56	
v/s Ratio Perm		c0.20			0.19			0.13		0.08		
v/c Ratio		0.89			1.22dl			0.20		0.14	0.89	
Uniform Delay, d1		30.1			29.8			6.3		6.0	12.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		13.8			15.2			0.4		0.4	10.3	
Delay (s)		43.9			45.0			6.8		6.4	22.8	
Level of Service		D			D			A		A	C	
Approach Delay (s)		43.9			45.0			6.8			21.3	
Approach LOS		D			D			A			C	

### Intersection Summary

HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			
c Critical Lane Group			

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

2031 Total 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	730	45	5	300	20	15	475	35	415	1015	45
Future Volume (vph)	35	730	45	5	300	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	55.0		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	0.569			0.231			0.270			0.335		
Satd. Flow (perm)	983	3436	0	439	3539	1615	366	3215	0	636	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				127		12			11	
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	730	45	5	300	20	15	475	35	415	1015	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	775	0	5	300	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 Total 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)	24.0	24.0		24.0	24.0	24.0	22.0	22.0		14.0	36.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	36.7%	36.7%		23.3%	60.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	16.0	16.0		10.0	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)	17.3	17.3		17.3	17.3	17.3	16.1	16.1		32.0	30.0	
Actuated g/C Ratio	0.29	0.29		0.29	0.29	0.29	0.27	0.27		0.54	0.51	
v/c Ratio	0.12	0.77		0.04	0.29	0.04	0.15	0.58		0.77	0.62	
Control Delay	16.7	24.9		16.0	17.1	0.1	21.4	21.6		20.9	12.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	16.7	24.9		16.0	17.1	0.1	21.4	21.6		20.9	12.5	
LOS	B	C		B	B	A	C	C		C	B	
Approach Delay		24.5			16.0			21.6			14.9	
Approach LOS		C			B			C			B	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 59.3  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 18.6  
 Intersection Capacity Utilization 86.1%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service E

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



Queues

2031 Total AM

16: Ninth Line & 5 Side Road

Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	775	5	300	20	15	510	415	1060
v/c Ratio	0.12	0.77	0.04	0.29	0.04	0.15	0.58	0.77	0.62
Control Delay	16.7	24.9	16.0	17.1	0.1	21.4	21.6	20.9	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	24.9	16.0	17.1	0.1	21.4	21.6	20.9	12.5
Queue Length 50th (m)	2.9	41.4	0.4	13.7	0.0	1.3	26.2	26.3	42.8
Queue Length 95th (m)	8.8	60.0	2.6	22.7	0.0	5.8	40.3	#56.6	60.7
Internal Link Dist (m)		556.9		434.3			3096.2		305.9
Turn Bay Length (m)	40.0		40.0		40.0	40.0		55.0	
Base Capacity (vph)	298	1051	133	1074	578	99	881	540	1720
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	0.12	0.74	0.04	0.28	0.03	0.15	0.58	0.77	0.62

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 Total 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	730	45	5	300	20	15	475	35	415	1015	45	
Future Volume (vph)	35	730	45	5	300	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	3437		1805	3539	1615	1289	3214		1805	3387		
Flt Permitted	0.57	1.00		0.23	1.00	1.00	0.27	1.00		0.34	1.00		
Satd. Flow (perm)	982	3437		439	3539	1615	366	3214		637	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	730	45	5	300	20	15	475	35	415	1015	45	
RTOR Reduction (vph)	0	8	0	0	0	14	0	9	0	0	5	0	
Lane Group Flow (vph)	35	767	0	5	300	6	15	501	0	415	1055	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)	17.3	17.3		17.3	17.3	17.3	16.1	16.1		30.0	30.0		
Effective Green, g (s)	17.3	17.3		17.3	17.3	17.3	16.1	16.1		30.0	30.0		
Actuated g/C Ratio	0.29	0.29		0.29	0.29	0.29	0.27	0.27		0.51	0.51		
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)	286	1002		128	1032	471	99	872		517	1713		
v/s Ratio Prot		c0.22			0.08			0.16		c0.13	0.31		
v/s Ratio Perm	0.04			0.01		0.00	0.04			c0.27			
v/c Ratio	0.12	0.77		0.04	0.29	0.01	0.15	0.57		0.80	0.62		
Uniform Delay, d1	15.4	19.2		15.0	16.3	14.9	16.4	18.6		9.9	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	3.7		0.1	0.2	0.0	3.2	2.8		8.8	1.7		
Delay (s)	15.7	22.8		15.2	16.4	14.9	19.6	21.4		18.7	12.2		
Level of Service	B	C		B	B	B	B	C		B	B		
Approach Delay (s)		22.5			16.3			21.3			14.0		
Approach LOS		C			B			C			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			17.7									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.84										
Actuated Cycle Length (s)			59.3									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  
17: "Street C"/"Street B" & Steeles Avenue

2031 Total 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)	250	1310	185	475	950	55	35	0	80	20	0	80
Future Volume (vph)	250	1310	185	475	950	55	35	0	80	20	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		30.0	60.0		30.0	30.0		100.0	30.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	1863	1583	1770	1583	0
Flt Permitted	0.279			0.950			0.672			0.757		
Satd. Flow (perm)	520	5085	1583	3433	5085	1583	1252	1863	1583	1410	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164			120			416		413	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		446.2			433.6			329.9			259.4	
Travel Time (s)		26.8			26.0			23.8			18.7	
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
Adj. Flow (vph)	250	1310	185	475	950	55	35	0	80	20	0	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	250	1310	185	475	950	55	35	0	80	20	80	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)		7.2			7.2			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	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
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	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	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	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt		Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	24.0	24.0	9.5	24.0	24.0	9.5	24.0	24.0	9.5	24.0	

Lanes, Volumes, Timings  
 17: "Street C"/"Street B" & Steeles Avenue

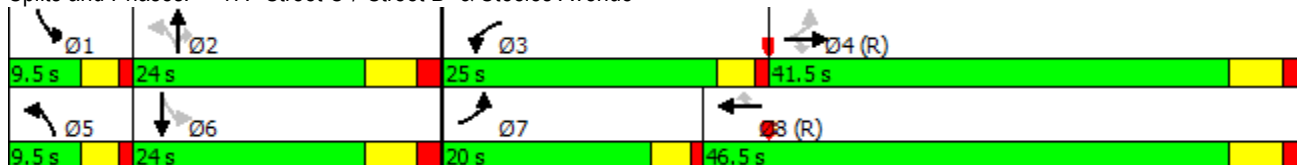
2031 Total AM  
 Premier Gateway Phase 1B Employment Area

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	20.0	41.5	41.5	25.0	46.5	46.5	9.5	24.0	24.0	9.5	24.0	
Total Split (%)	20.0%	41.5%	41.5%	25.0%	46.5%	46.5%	9.5%	24.0%	24.0%	9.5%	24.0%	
Maximum Green (s)	16.0	35.5	35.5	21.0	40.5	40.5	5.5	18.0	18.0	5.5	18.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	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	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	
Walk Time (s)		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	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	51.9	38.1	38.1	18.4	44.7	44.7	27.9		23.7	27.1	21.8	
Actuated g/C Ratio	0.52	0.38	0.38	0.18	0.45	0.45	0.28		0.24	0.27	0.22	
v/c Ratio	0.60	0.68	0.26	0.75	0.42	0.07	0.09		0.12	0.05	0.12	
Control Delay	15.9	28.4	6.0	46.6	19.9	0.2	26.2		0.3	25.7	0.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	15.9	28.4	6.0	46.6	19.9	0.2	26.2		0.3	25.7	0.4	
LOS	B	C	A	D	B	A	C		A	C	A	
Approach Delay		24.2			27.7			8.2			5.4	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 24.6  
 Intersection Capacity Utilization 60.8%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service B

Splits and Phases: 17: "Street C"/"Street B" & Steeles Avenue



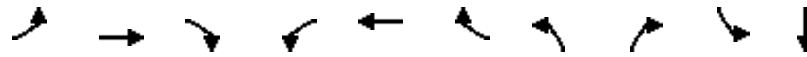


Queues

2031 Total AM

17: "Street C"/"Street B" & Steeles Avenue

Premier Gateway Phase 1B Employment Area



























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	250	1310	185	475	950	55	35	80	20	80
v/c Ratio	0.60	0.68	0.26	0.75	0.42	0.07	0.09	0.12	0.05	0.12
Control Delay	15.9	28.4	6.0	46.6	19.9	0.2	26.2	0.3	25.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.9	28.4	6.0	46.6	19.9	0.2	26.2	0.3	25.7	0.4
Queue Length 50th (m)	20.4	80.9	2.7	47.4	46.6	0.0	5.1	0.0	2.9	0.0
Queue Length 95th (m)	32.3	101.2	17.4	63.4	62.6	0.0	12.7	0.0	8.6	0.0
Internal Link Dist (m)	422.2				409.6				235.4	
Turn Bay Length (m)	30.0		30.0	60.0		30.0	30.0	100.0	30.0	
Base Capacity (vph)	492	1938	704	720	2274	774	377	692	401	667
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	0.51	0.68	0.26	0.66	0.42	0.07	0.09	0.12	0.05	0.12

Intersection Summary

# HCM Signalized Intersection Capacity Analysis

## 17: "Street C"/"Street B" & Steeles Avenue

2031 Total 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)	250	1310	185	475	950	55	35	0	80	20	0	80
Future Volume (vph)	250	1310	185	475	950	55	35	0	80	20	0	80
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	4.0		6.0	4.0	6.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	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)	1770	5085	1583	3433	5085	1583	1770		1583	1770	1583	
Flt Permitted	0.28	1.00	1.00	0.95	1.00	1.00	0.67		1.00	0.76	1.00	
Satd. Flow (perm)	520	5085	1583	3433	5085	1583	1252		1583	1410	1583	
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)	250	1310	185	475	950	55	35	0	80	20	0	80
RTOR Reduction (vph)	0	0	105	0	0	32	0	0	61	0	62	0
Lane Group Flow (vph)	250	1310	80	475	950	23	35	0	19	20	18	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt		Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2	6		
Actuated Green, G (s)	47.5	35.7	35.7	18.4	42.3	42.3	27.0		23.7	24.8	22.6	
Effective Green, g (s)	47.5	35.7	35.7	18.4	42.3	42.3	27.0		23.7	24.8	22.6	
Actuated g/C Ratio	0.48	0.36	0.36	0.18	0.42	0.42	0.27		0.24	0.25	0.23	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0		6.0	4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	394	1815	565	631	2150	669	355		375	357	357	
v/s Ratio Prot	0.07	c0.26		c0.14	0.19		c0.00			0.00	0.01	
v/s Ratio Perm	0.23		0.05			0.01	c0.02		0.01	0.01		
v/c Ratio	0.63	0.72	0.14	0.75	0.44	0.03	0.10		0.05	0.06	0.05	
Uniform Delay, d1	16.1	27.8	21.8	38.6	20.5	16.9	27.2		29.5	28.6	30.3	
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	3.3	2.5	0.5	5.1	0.7	0.1	0.1		0.3	0.1	0.3	
Delay (s)	19.4	30.4	22.3	43.7	21.1	17.0	27.3		29.7	28.7	30.6	
Level of Service	B	C	C	D	C	B	C		C	C	C	
Approach Delay (s)		27.9			28.2			29.0			30.2	
Approach LOS		C			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			28.2									
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			100.0							20.0		
Intersection Capacity Utilization			60.8%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
18: Hornby Road & "Street A"

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	85	0	0	15	65	415
Future Volume (vph)	85	0	0	15	65	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.883
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	1770	0	0	1863	1645	0
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1863	1645	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	166.0			1126.5	97.3	
Travel Time (s)	12.0			67.6	5.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	0	0	15	65	415
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	0	15	480	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)	25	15	25			15
Sign Control	Yield			Yield	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	40.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 18: Hornby Road & "Street A"

2031 Total AM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Right Turn Channelized						
Traffic Volume (veh/h)	85	0	0	15	65	415
Future Volume (veh/h)	85	0	0	15	65	415
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	85	0	0	15	65	415
Approach Volume (veh/h)	85			15	480	
Crossing Volume (veh/h)	65			85	0	
High Capacity (veh/h)	1316			1296	1385	
High v/c (veh/h)	0.06			0.01	0.35	
Low Capacity (veh/h)	1099			1080	1161	
Low v/c (veh/h)	0.08			0.01	0.41	
<b>Intersection Summary</b>						
Maximum v/c High			0.35			
Maximum v/c Low			0.41			
Intersection Capacity Utilization			40.4%	ICU Level of Service		A

Lanes, Volumes, Timings  
19: Trafalgar Road & "Street B"

2031 Total 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)	40	0	35	115	0	40	85	485	470	160	1880	105
Future Volume (vph)	40	0	35	115	0	40	85	485	470	160	1880	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	85.0		0.0	50.0		50.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850			0.850				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.731			0.682			0.052			0.458		
Satd. Flow (perm)	1362	1583	0	1270	1583	0	97	3539	1583	853	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		123			461				470			92
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		142.2			131.5			68.3			90.8	
Travel Time (s)		10.2			9.5			3.1			4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	0	35	115	0	40	85	485	470	160	1880	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	35	0	115	40	0	85	485	470	160	1880	105
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	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
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	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
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		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		1	6		3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	24.0		9.5	24.0		9.5	24.0	24.0	9.5	24.0	24.0

Lanes, Volumes, Timings  
19: Trafalgar Road & "Street B"

2031 Total AM  
Premier Gateway Phase 1B Employment Area

	↖		→		↗		↖		←		↗		↖		↑		↗		↘		↓		↘		
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR													
Total Split (s)	9.6	26.4		9.6	26.4		11.0	83.2	83.2	10.8	83.0	83.0													
Total Split (%)	7.4%	20.3%		7.4%	20.3%		8.5%	64.0%	64.0%	8.3%	63.8%	63.8%													
Maximum Green (s)	5.6	20.4		5.6	20.4		7.0	77.2	77.2	6.8	77.0	77.0													
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0													
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0	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		4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0													
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag													
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0													
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	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)	28.5	20.9		29.7	23.2		85.1	76.3	76.3	85.0	76.2	76.2													
Actuated g/C Ratio	0.22	0.16		0.23	0.18		0.65	0.59	0.59	0.65	0.59	0.59													
v/c Ratio	0.13	0.10		0.37	0.06		0.56	0.23	0.42	0.26	0.91	0.11													
Control Delay	39.1	0.5		44.4	0.2		42.9	6.1	8.2	8.2	31.3	3.1													
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0													
Total Delay	39.1	0.5		44.4	0.2		42.9	6.1	8.2	8.2	31.3	3.1													
LOS	D	A		D	A		D	A	A	A	C	A													
Approach Delay		21.1			33.0			10.0			28.2														
Approach LOS		C			C			B			C														

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 22.7  
 Intersection Capacity Utilization 83.0%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service E

Splits and Phases: 19: Trafalgar Road & "Street B"



Queues

2031 Total AM

19: Trafalgar Road & "Street B"

Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	35	115	40	85	485	470	160	1880	105
v/c Ratio	0.13	0.10	0.37	0.06	0.56	0.23	0.42	0.26	0.91	0.11
Control Delay	39.1	0.5	44.4	0.2	42.9	6.1	8.2	8.2	31.3	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	0.5	44.4	0.2	42.9	6.1	8.2	8.2	31.3	3.1
Queue Length 50th (m)	8.4	0.0	25.2	0.0	4.8	35.6	80.4	13.3	220.6	1.4
Queue Length 95th (m)	18.5	0.0	42.7	0.0	m18.7	37.2	113.3	21.2	261.7	9.2
Internal Link Dist (m)		118.2		107.5		44.3			66.8	
Turn Bay Length (m)	50.0		85.0		50.0		50.0	50.0		50.0
Base Capacity (vph)	315	357	313	661	153	2101	1130	605	2096	975
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	0.13	0.10	0.37	0.06	0.56	0.23	0.42	0.26	0.90	0.11























Intersection Summary

m Volume for 95th percent ile queue is metered by upstream si nal.

# HCM Signalized Intersection Capacity Analysis

## 19: Trafalgar Road & "Street B"

2031 Total 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)	40	0	35	115	0	40	85	485	470	160	1880	105
Future Volume (vph)	40	0	35	115	0	40	85	485	470	160	1880	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1583		1770	1583		1770	3539	1583	1770	3539	1583
Flt Permitted	0.73	1.00		0.68	1.00		0.05	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	1362	1583		1270	1583		98	3539	1583	854	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	0	35	115	0	40	85	485	470	160	1880	105
RTOR Reduction (vph)	0	29	0	0	33	0	0	0	194	0	0	38
Lane Group Flow (vph)	40	6	0	115	7	0	85	485	276	160	1880	67
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	25.3	20.8		28.5	22.4		83.2	76.3	76.3	83.0	76.2	76.2
Effective Green, g (s)	25.3	20.8		28.5	22.4		83.2	76.3	76.3	83.0	76.2	76.2
Actuated g/C Ratio	0.19	0.16		0.22	0.17		0.64	0.59	0.59	0.64	0.59	0.59
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0	6.0	4.0	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)	279	253		301	272		151	2077	929	593	2074	927
v/s Ratio Prot	0.00	0.00		c0.02	0.00		c0.03	0.14		0.01	c0.53	
v/s Ratio Perm	0.02			c0.07			0.33		0.17	0.16		0.04
v/c Ratio	0.14	0.02		0.38	0.03		0.56	0.23	0.30	0.27	0.91	0.07
Uniform Delay, d1	43.1	46.0		42.6	44.7		25.8	12.9	13.4	9.4	23.8	11.6
Progression Factor	1.00	1.00		1.00	1.00		1.85	0.46	6.80	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		0.8	0.2		4.0	0.0	0.2	0.2	6.2	0.0
Delay (s)	43.4	46.2		43.4	44.9		51.8	5.9	91.6	9.6	29.9	11.7
Level of Service	D	D		D	D		D	A	F	A	C	B
Approach Delay (s)		44.7			43.8			48.4			27.5	
Approach LOS		D			D			D			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			35.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			83.0%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												



Lanes, Volumes, Timings  
20: Eighth Line & "Street B"

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	65	265	180	985	205
Future Volume (vph)	50	65	265	180	985	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0	0.0	25.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.977	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1820	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1820	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	197.8			564.0	2522.4	
Travel Time (s)	14.2			29.0	129.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	65	265	180	985	205
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	65	265	180	1190	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)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	92.3%
ICU Level of Service	F
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 20: Eighth Line & "Street B"

2031 Total AM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	65	265	180	985	205
Future Volume (Veh/h)	50	65	265	180	985	205
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	65	265	180	985	205
<b>Pedestrians</b>						
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	1798	1088	1190			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1798	1088	1190			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	75	55			
cM capacity (veh/h)	48	262	587			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	50	65	265	180	1190	
Volume Left	50	0	265	0	0	
Volume Right	0	65	0	0	205	
cSH	48	262	587	1700	1700	
Volume to Capacity	1.04	0.25	0.45	0.11	0.70	
Queue Length 95th (m)	35.5	7.6	18.7	0.0	0.0	
Control Delay (s)	274.1	23.2	16.1	0.0	0.0	
Lane LOS	F	C	C			
Approach Delay (s)	132.3		9.6		0.0	
Approach LOS	F					
<b>Intersection Summary</b>						
Average Delay			11.1			
Intersection Capacity Utilization			92.3%	ICU Level of Service	F	
Analysis Period (min)			15			

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

2031 Total AM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖↗	↑↑↑	↖↗	↗
Traffic Volume (vph)	1620	450	285	685	150	395
Future Volume (vph)	1620	450	285	685	150	395
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)		431				233
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)	1620	450	285	685	150	395
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1620	450	285	685	150	395
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	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	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)	24.0	24.0	10.0	24.0	24.0	24.0

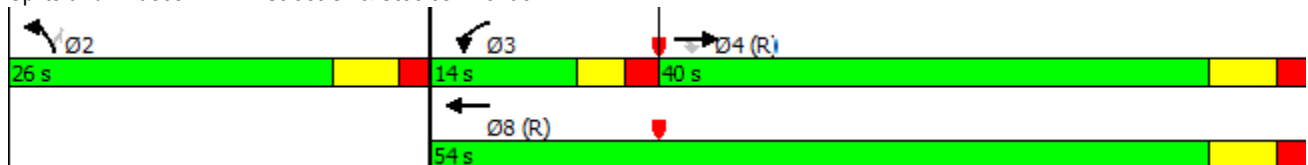


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	40.0	40.0	14.0	54.0	26.0	26.0
Total Split (%)	50.0%	50.0%	17.5%	67.5%	32.5%	32.5%
Maximum Green (s)	34.0	34.0	9.0	48.0	20.0	20.0
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	6.0	6.0
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	C-Max	C-Max	None	C-Max	Max	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)	34.0	34.0	9.0	48.0	20.0	20.0
Actuated g/C Ratio	0.42	0.42	0.11	0.60	0.25	0.25
v/c Ratio	0.75	0.49	0.74	0.22	0.17	0.69
Control Delay	22.1	4.0	54.5	5.8	24.2	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	4.0	54.5	5.8	24.2	18.2
LOS	C	A	D	A	C	B
Approach Delay	18.2			20.1	19.9	
Approach LOS	B			C	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 19.0  
 Intersection Capacity Utilization 65.8%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

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



Queues  
21: "Street C" & Steeles Avenue

2031 Total AM  
Premier Gateway Phase 1B Employment Area

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1620	450	285	685	150	395
v/c Ratio	0.75	0.49	0.74	0.22	0.17	0.69
Control Delay	22.1	4.0	54.5	5.8	24.2	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	4.0	54.5	5.8	24.2	18.2
Queue Length 50th (m)	77.4	1.7	25.9	7.5	9.6	21.8
Queue Length 95th (m)	95.3	18.6	#42.2	20.4	17.1	54.3
Internal Link Dist (m)	417.5			439.9	399.9	
Turn Bay Length (m)		50.0	50.0			
Base Capacity (vph)	2162	920	386	3051	858	570
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	0.75	0.49	0.74	0.22	0.17	0.69

**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 C" & Steeles Avenue

2031 Total AM  
 Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↙↘	↑↑↑	↙↘	↗
Traffic Volume (vph)	1620	450	285	685	150	395
Future Volume (vph)	1620	450	285	685	150	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0
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)	1620	450	285	685	150	395
RTOR Reduction (vph)	0	248	0	0	0	175
Lane Group Flow (vph)	1620	202	285	685	150	220
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	34.0	34.0	9.0	48.0	20.0	20.0
Effective Green, g (s)	34.0	34.0	9.0	48.0	20.0	20.0
Actuated g/C Ratio	0.42	0.42	0.11	0.60	0.25	0.25
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2161	672	386	3051	858	395
v/s Ratio Prot	c0.32		c0.08	0.13	0.04	
v/s Ratio Perm		0.13				c0.14
v/c Ratio	0.75	0.30	0.74	0.22	0.17	0.56
Uniform Delay, d1	19.4	15.2	34.4	7.4	23.5	26.1
Progression Factor	1.00	1.00	1.24	0.76	1.00	1.00
Incremental Delay, d2	2.4	1.1	6.5	0.2	0.4	5.6
Delay (s)	21.8	16.3	49.3	5.8	24.0	31.7
Level of Service	C	B	D	A	C	C
Approach Delay (s)	20.6			18.6	29.6	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings

2031 Total PM

1: Brownridge Road/Fifth Line & Steeles Avenue

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	915	5	10	2125	20	70	15	40	70	5	160
Future Volume (vph)	75	915	5	10	2125	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		0.999			0.891				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	4433	1214	1203	4747	0	1687	1507	0	1583	1429	1568
Flt Permitted	0.103			0.300			0.754			0.721		
Satd. Flow (perm)	185	4433	1214	380	4747	0	1339	1507	0	1202	1429	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55		4			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	915	5	10	2125	20	70	15	40	70	5	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	915	5	10	2145	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

2031 Total PM  
Premier Gateway Phase 1B Employment Area

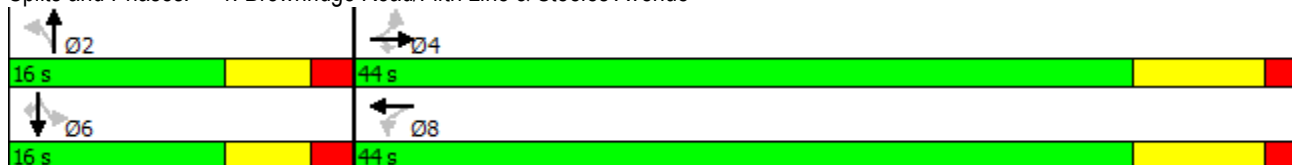


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	33.0	33.0	33.0	33.0	33.0		16.0	16.0		16.0	16.0	16.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0		16.0	16.0		16.0	16.0	16.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	73.3%		26.7%	26.7%		26.7%	26.7%	26.7%
Maximum Green (s)	36.0	36.0	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	0.60	0.30	0.01	0.04	0.66		0.31	0.19		0.35	0.02	0.47
Control Delay	35.9	5.7	0.0	5.5	9.0		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	35.9	5.7	0.0	5.5	9.0		26.4	12.6		27.7	21.2	16.3
LOS	D	A	A	A	A		C	B		C	C	B
Approach Delay		7.9			8.9			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: 0.66  
 Intersection Signal Delay: 9.8  
 Intersection Capacity Utilization 84.5%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service E

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



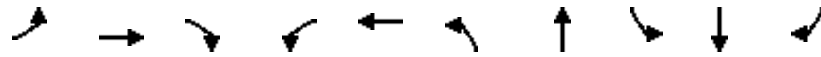


Queues

2031 Total PM

1: Brownridge Road/Fifth Line & Steeles Avenue

Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	75	915	5	10	2145	70	55	70	5	160
v/c Ratio	0.60	0.30	0.01	0.04	0.66	0.31	0.19	0.35	0.02	0.47
Control Delay	35.9	5.7	0.0	5.5	9.0	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	35.9	5.7	0.0	5.5	9.0	26.4	12.6	27.7	21.2	16.3
Queue Length 50th (m)	5.1	16.9	0.0	0.4	57.2	7.2	1.5	7.3	0.5	7.1
Queue Length 95th (m)	#27.8	23.3	0.0	2.1	74.9	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)	126	3014	843	258	3229	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	0.60	0.30	0.01	0.04	0.66	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

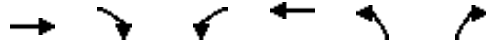
2031 Total PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	915	5	10	2125	20	70	15	40	70	5	160
Future Volume (vph)	75	915	5	10	2125	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	4745		1687	1506		1583	1429	1568
Flt Permitted	0.10	1.00	1.00	0.30	1.00		0.75	1.00		0.72	1.00	1.00
Satd. Flow (perm)	184	4433	1214	380	4745		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	915	5	10	2125	20	70	15	40	70	5	160
RTOR Reduction (vph)	0	0	2	0	1	0	0	35	0	0	0	79
Lane Group Flow (vph)	75	915	3	10	2144	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)	117	2834	776	242	3033		175	197		157	187	205
v/s Ratio Prot		0.21			c0.45			0.01				0.00
v/s Ratio Perm	0.41		0.00	0.03			0.05			c0.06		0.05
v/c Ratio	0.64	0.32	0.00	0.04	0.71		0.40	0.10		0.45	0.03	0.39
Uniform Delay, d1	6.7	5.0	4.0	4.1	7.2		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	23.9	0.3	0.0	0.3	1.4		1.5	0.2		2.0	0.1	1.3
Delay (s)	30.7	5.3	4.0	4.4	8.7		25.8	23.6		26.5	23.2	25.5
Level of Service	C	A	A	A	A		C	C		C	C	C
Approach Delay (s)		7.2			8.6			24.8				25.8
Approach LOS		A			A			C				C
<b>Intersection Summary</b>												
HCM 2000 Control Delay			10.0			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			61.0			Sum of lost time (s)				14.0		
Intersection Capacity Utilization			84.5%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1040	5	5	2155	25	10
Future Volume (vph)	1040	5	5	2155	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			0.263		0.950	
Satd. Flow (perm)	4433	1615	333	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)	1040	5	5	2155	25	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1040	5	5	2155	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

2031 Total PM  
Premier Gateway Phase 1B Employment Area



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)	34.0	34.0	34.0	34.0	16.0	16.0
Total Split (%)	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Maximum Green (s)	26.0	26.0	26.0	26.0	10.0	10.0
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)	45.3	45.3	45.3	45.3	10.1	10.1
Actuated g/C Ratio	0.84	0.84	0.84	0.84	0.19	0.19
v/c Ratio	0.28	0.00	0.02	0.54	0.08	0.04
Control Delay	3.5	3.4	4.8	5.2	21.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.5	3.4	4.8	5.2	21.0	12.6
LOS	A	A	A	A	C	B
Approach Delay	3.5			5.2	18.6	
Approach LOS	A			A	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 53.8  
 Natural Cycle: 50  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 4.8  
 Intersection Capacity Utilization 61.6%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service B

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



Queues  
2: Fifth Line South & Steeles Avenue

2031 Total PM  
Premier Gateway Phase 1B Employment Area

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1040	5	5	2155	25	10
v/c Ratio	0.28	0.00	0.02	0.54	0.08	0.04
Control Delay	3.5	3.4	4.8	5.2	21.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.5	3.4	4.8	5.2	21.0	12.6
Queue Length 50th (m)	0.0	0.0	0.0	0.0	1.9	0.0
Queue Length 95th (m)	27.4	1.1	1.4	76.3	7.8	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)	3732	1360	280	4007	317	267
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	0.28	0.00	0.02	0.54	0.08	0.04
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
2: Fifth Line South & Steeles Avenue

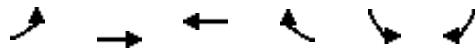
2031 Total PM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1040	5	5	2155	25	10
Future Volume (vph)	1040	5	5	2155	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	0.26	1.00	0.95	1.00
Satd. Flow (perm)	4433	1615	333	4759	1687	1380
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1040	5	5	2155	25	10
RTOR Reduction (vph)	0	2	0	0	0	9
Lane Group Flow (vph)	1040	3	5	2155	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)	40.0	40.0	40.0	40.0	3.5	3.5
Effective Green, g (s)	40.0	40.0	40.0	40.0	3.5	3.5
Actuated g/C Ratio	0.70	0.70	0.70	0.70	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)	3083	1123	231	3310	102	84
v/s Ratio Prot	0.23			c0.45		
v/s Ratio Perm		0.00	0.02		c0.01	0.00
v/c Ratio	0.34	0.00	0.02	0.65	0.25	0.01
Uniform Delay, d1	3.5	2.7	2.7	4.9	25.7	25.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.2	1.0	1.3	0.0
Delay (s)	3.8	2.7	2.9	5.9	27.0	25.4
Level of Service	A	A	A	A	C	C
Approach Delay (s)	3.8			5.9	26.5	
Approach LOS	A			A	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			5.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			57.5		Sum of lost time (s)	14.0
Intersection Capacity Utilization			61.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

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

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	75	1395	2200	120	55	60
Future Volume (vph)	75	1395	2200	120	55	60
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)	1770	4287	4715	1524	1805	1615
Flt 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)	75	1395	2200	120	55	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	1395	2200	120	55	60
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	

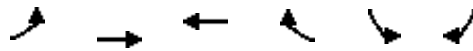
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.0%
ICU Level of Service	B
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 3: Steeles Avenue & Sixth Line

2031 Total PM  
Premier Gateway Phase 1B Employment Area



























Movement	EBL	EBT	WBT	WBR	SBL	SBR				
Lane Configurations										
Traffic Volume (veh/h)	75	1395	2200	120	55	60				
Future Volume (Veh/h)	75	1395	2200	120	55	60				
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)	75	1395	2200	120	55	60				
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	2320				2815	733				
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	2320				2815	733				
tC, single (s)	4.1				6.8	6.9				
tC, 2 stage (s)										
tF (s)	2.2				3.5	3.3				
p0 queue free %	65				0	84				
cM capacity (veh/h)	212				10	367				
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2
Volume Total	75	465	465	465	733	733	733	120	55	60
Volume Left	75	0	0	0	0	0	0	0	55	0
Volume Right	0	0	0	0	0	0	0	120	0	60
cSH	212	1700	1700	1700	1700	1700	1700	1700	10	367
Volume to Capacity	0.35	0.27	0.27	0.27	0.43	0.43	0.43	0.07	5.77	0.16
Queue Length 95th (m)	12.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Err	4.6
Control Delay (s)	31.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Err	16.7
Lane LOS	D								F	C
Approach Delay (s)	1.6				0.0				4790.8	
Approach LOS									F	
Intersection Summary										
Average Delay			141.7							
Intersection Capacity Utilization			60.0%		ICU Level of Service				B	
Analysis Period (min)			15							



Lanes, Volumes, Timings  
4: Sixth Line South/"Street A" & Steeles Avenue

2031 Total 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)	175	740	10	120	2370	30	5	25	55	175	80	395
Future Volume (vph)	175	740	10	120	2370	30	5	25	55	175	80	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		30.0	50.0		30.0	50.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			100.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.897				0.875
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4252	1615	1805	4715	1583	1805	1694	0	1770	1630	0
Flt Permitted	0.050			0.358			0.108			0.705		
Satd. Flow (perm)	93	4252	1615	680	4715	1583	205	1694	0	1313	1630	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55			86		55				107
Link Speed (k/h)		80			80			50				50
Link Distance (m)		463.9			497.0			166.1				330.6
Travel Time (s)		20.9			22.4			12.0				23.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	22%	0%	0%	10%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	175	740	10	120	2370	30	5	25	55	175	80	395
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	740	10	120	2370	30	5	80	0	175	475	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)		7.2			7.2			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	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	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2				6
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	

Lanes, Volumes, Timings  
 4: Sixth Line South/"Street A" & Steeles Avenue

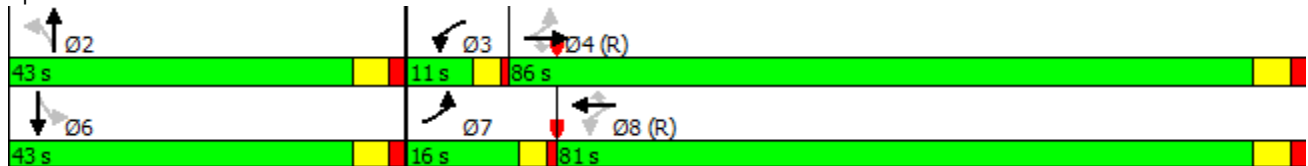
2031 Total PM  
 Premier Gateway Phase 1B Employment Area

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	9.5	24.0	24.0	11.0	24.0	24.0	24.0	24.0		24.0	24.0	
Total Split (s)	16.0	86.0	86.0	11.0	81.0	81.0	43.0	43.0		43.0	43.0	
Total Split (%)	11.4%	61.4%	61.4%	7.9%	57.9%	57.9%	30.7%	30.7%		30.7%	30.7%	
Maximum Green (s)	12.0	80.0	80.0	7.0	75.0	75.0	37.0	37.0		37.0	37.0	
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	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)	4.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	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)	92.8	80.0	80.0	84.4	75.5	75.5	37.0	37.0		37.0	37.0	
Actuated g/C Ratio	0.66	0.57	0.57	0.60	0.54	0.54	0.26	0.26		0.26	0.26	
v/c Ratio	0.88	0.30	0.01	0.26	0.93	0.03	0.09	0.16		0.50	0.93	
Control Delay	73.2	16.0	0.0	10.2	38.1	0.1	44.2	16.3		49.7	65.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	73.2	16.0	0.0	10.2	38.1	0.1	44.2	16.3		49.7	65.3	
LOS	E	B	A	B	D	A	D	B		D	E	
Approach Delay		26.6			36.3			17.9			61.1	
Approach LOS		C			D			B			E	

Intersection Summary

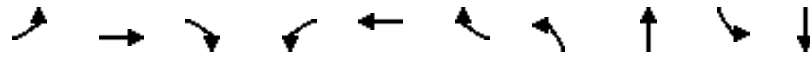
Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.93  
 Intersection Signal Delay: 37.7  
 Intersection Capacity Utilization 97.4%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service F

Splits and Phases: 4: Sixth Line South/"Street A" & Steeles Avenue



Queues  
4: Sixth Line South/"Street A" & Steeles Avenue

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	175	740	10	120	2370	30	5	80	175	475
v/c Ratio	0.88	0.30	0.01	0.26	0.93	0.03	0.09	0.16	0.50	0.93
Control Delay	73.2	16.0	0.0	10.2	38.1	0.1	44.2	16.3	49.7	65.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.2	16.0	0.0	10.2	38.1	0.1	44.2	16.3	49.7	65.3
Queue Length 50th (m)	34.1	39.4	0.0	11.7	228.9	0.0	1.1	5.5	43.6	109.9
Queue Length 95th (m)	#77.0	48.1	0.0	19.4	255.3	0.0	5.3	19.3	68.9	#179.6
Internal Link Dist (m)		439.9			473.0			142.1		306.6
Turn Bay Length (m)	50.0		30.0	50.0		30.0	50.0		55.0	
Base Capacity (vph)	205	2430	946	466	2541	892	54	488	347	509
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	0.85	0.30	0.01	0.26	0.93	0.03	0.09	0.16	0.50	0.93

























Intersection Summary

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

Queue shown is maximum after two cycles.

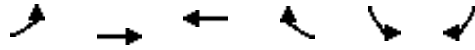
HCM Signalized Intersection Capacity Analysis  
 4: Sixth Line South/"Street A" & Steeles Avenue

2031 Total 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)	175	740	10	120	2370	30	5	25	55	175	80	395
Future Volume (vph)	175	740	10	120	2370	30	5	25	55	175	80	395
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	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	0.85	1.00	0.90		1.00	0.88	
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)	1770	4252	1615	1805	4715	1583	1805	1693		1770	1630	
Flt Permitted	0.05	1.00	1.00	0.36	1.00	1.00	0.11	1.00		0.70	1.00	
Satd. Flow (perm)	94	4252	1615	681	4715	1583	205	1693		1313	1630	
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)	175	740	10	120	2370	30	5	25	55	175	80	395
RTOR Reduction (vph)	0	0	4	0	0	14	0	40	0	0	79	0
Lane Group Flow (vph)	175	740	6	120	2370	16	5	40	0	175	396	0
Heavy Vehicles (%)	2%	22%	0%	0%	10%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2				6
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	91.0	80.0	80.0	82.5	75.5	75.5	37.0	37.0		37.0	37.0	
Effective Green, g (s)	91.0	80.0	80.0	82.5	75.5	75.5	37.0	37.0		37.0	37.0	
Actuated g/C Ratio	0.65	0.57	0.57	0.59	0.54	0.54	0.26	0.26		0.26	0.26	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	198	2429	922	457	2542	853	54	447		347	430	
v/s Ratio Prot	c0.07	0.17		0.01	c0.50			0.02				c0.24
v/s Ratio Perm	0.50		0.00	0.14		0.01	0.02			0.13		
v/c Ratio	0.88	0.30	0.01	0.26	0.93	0.02	0.09	0.09		0.50	0.92	
Uniform Delay, d1	43.7	15.6	12.9	12.6	29.9	15.0	38.8	38.8		43.7	50.1	
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	33.9	0.3	0.0	0.3	7.8	0.0	3.4	0.4		5.2	27.6	
Delay (s)	77.6	15.9	12.9	13.0	37.7	15.1	42.2	39.2		48.9	77.7	
Level of Service	E	B	B	B	D	B	D	D		D	E	
Approach Delay (s)		27.5			36.2			39.4			69.9	
Approach LOS		C			D			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			39.6			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			97.4%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total PM  
Premier Gateway Phase 1B Employment Area

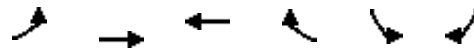


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	75	1100	2035	35	65	150
Future Volume (vph)	75	1100	2035	35	65	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			30.0	30.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	100.0				7.5	
Lane Util. 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)	1805	4359	4715	1615	1357	1615
Fl <sub>t</sub> 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	446.2		1126.5	
Travel Time (s)		29.8	26.8		67.6	
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)	75	1100	2035	35	65	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	1100	2035	35	65	150
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	57.1% ICU Level of Service B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 5: Steeles Avenue & Hornby Road



































2031 Total PM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR				
Lane Configurations										
Traffic Volume (veh/h)	75	1100	2035	35	65	150				
Future Volume (Veh/h)	75	1100	2035	35	65	150				
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)	75	1100	2035	35	65	150				
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	2070				2552	678				
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	2070				2552	678				
tC, single (s)	4.1				7.5	6.9				
tC, 2 stage (s)										
tF (s)	2.2				3.8	3.3				
p0 queue free %	73				0	62				
cM capacity (veh/h)	273				10	399				
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2
Volume Total	75	367	367	367	678	678	678	35	65	150
Volume Left	75	0	0	0	0	0	0	0	65	0
Volume Right	0	0	0	0	0	0	0	35	0	150
cSH	273	1700	1700	1700	1700	1700	1700	1700	10	399
Volume to Capacity	0.27	0.22	0.22	0.22	0.40	0.40	0.40	0.02	6.49	0.38
Queue Length 95th (m)	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Err	13.7
Control Delay (s)	23.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Err	19.3
Lane LOS	C								F	C
Approach Delay (s)	1.5				0.0				3036.4	
Approach LOS									F	
Intersection Summary										
Average Delay			189.2							
Intersection Capacity Utilization			57.1%		ICU Level of Service				B	
Analysis Period (min)			15							

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

2031 Total 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)	400	1000	190	895	1370	290	90	1120	845	135	850	225
Future Volume (vph)	400	1000	190	895	1370	290	90	1120	845	135	850	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		40.0	175.0		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			0.111		
Satd. Flow (perm)	2653	4510	1262	3433	4759	1583	3099	5036	1568	211	4988	1129
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168			149			503			225
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		433.6			311.3			332.0			289.5	
Travel Time (s)		26.0			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)	400	1000	190	895	1370	290	90	1120	845	135	850	225
Shared Lane Traffic (%)												
Lane Group Flow (vph)	400	1000	190	895	1370	290	90	1120	845	135	850	225
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

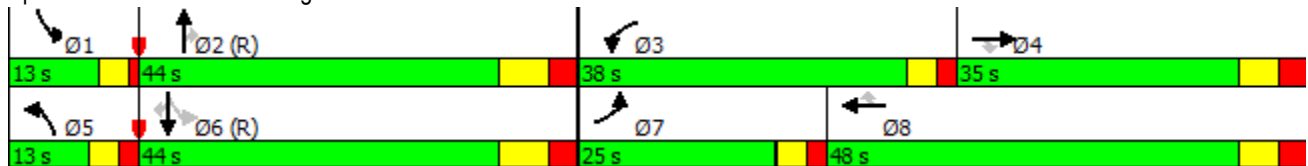
2031 Total PM  
Premier Gateway Phase 1B Employment Area

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)	25.0	35.0	35.0	38.0	48.0	48.0	13.0	44.0	44.0	13.0	44.0	44.0
Total Split (%)	19.2%	26.9%	26.9%	29.2%	36.9%	36.9%	10.0%	33.8%	33.8%	10.0%	33.8%	33.8%
Maximum Green (s)	20.0	28.0	28.0	33.0	41.0	41.0	8.0	36.0	36.0	9.0	36.0	36.0
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)	20.0	28.0	28.0	33.0	41.0	41.0	8.0	36.0	36.0	49.0	36.0	36.0
Actuated g/C Ratio	0.15	0.22	0.22	0.25	0.32	0.32	0.06	0.28	0.28	0.38	0.28	0.28
v/c Ratio	0.98	1.03	0.47	1.03	0.91	0.48	0.47	0.80	1.06	0.71	0.62	0.47
Control Delay	94.6	86.4	12.9	85.1	53.1	19.8	67.6	49.0	67.8	46.9	43.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.6	86.4	12.9	85.1	53.1	19.8	67.6	49.0	67.8	46.9	43.3	8.1
LOS	F	F	B	F	D	B	E	D	E	D	D	A
Approach Delay		79.7			60.5			57.6			37.1	
Approach LOS		E			E			E			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 125  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 60.0  
 Intersection Capacity Utilization 95.0%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service F

Splits and Phases: 6: Trafalgar Road & Steeles Avenue





Queues  
6: Trafalgar Road & Steeles Avenue

2031 Total 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)	400	1000	190	895	1370	290	90	1120	845	135	850	225
v/c Ratio	0.98	1.03	0.47	1.03	0.91	0.48	0.47	0.80	1.06	0.71	0.62	0.47
Control Delay	94.6	86.4	12.9	85.1	53.1	19.8	67.6	49.0	67.8	46.9	43.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.6	86.4	12.9	85.1	53.1	19.8	67.6	49.0	67.8	46.9	43.3	8.1
Queue Length 50th (m)	56.0	~105.5	4.8	~132.6	130.0	29.5	12.3	103.1	~145.2	23.0	73.4	0.0
Queue Length 95th (m)	#90.1	#135.7	27.3	#174.2	#154.1	57.2	21.7	121.5	#226.0	#47.0	88.7	21.8
Internal Link Dist (m)		409.6			287.3			308.0			265.5	
Turn Bay Length (m)	115.0		40.0	175.0		70.0	100.0		65.0	250.0		80.0
Base Capacity (vph)	408	971	403	871	1500	601	190	1394	797	189	1381	475
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	0.98	1.03	0.47	1.03	0.91	0.48	0.47	0.80	1.06	0.71	0.62	0.47

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 Total 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)	400	1000	190	895	1370	290	90	1120	845	135	850	225
Future Volume (vph)	400	1000	190	895	1370	290	90	1120	845	135	850	225
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt 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
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	2653	4510	1262	3433	4759	1583	3099	5036	1568	211	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)	400	1000	190	895	1370	290	90	1120	845	135	850	225
RTOR Reduction (vph)	0	0	132	0	0	102	0	0	364	0	0	163
Lane Group Flow (vph)	400	1000	58	895	1370	188	90	1120	481	135	850	62
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)	20.0	28.0	28.0	33.0	41.0	41.0	8.0	36.0	36.0	45.0	36.0	36.0
Effective Green, g (s)	20.0	28.0	28.0	33.0	41.0	41.0	8.0	36.0	36.0	45.0	36.0	36.0
Actuated g/C Ratio	0.15	0.22	0.22	0.25	0.32	0.32	0.06	0.28	0.28	0.35	0.28	0.28
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)	408	971	271	871	1500	499	190	1394	434	183	1381	312
v/s Ratio Prot	0.15	c0.22		c0.26	0.29		0.03	0.22		c0.05	0.17	
v/s Ratio Perm			0.05			0.12			c0.31	0.20		0.06
v/c Ratio	0.98	1.03	0.21	1.03	0.91	0.38	0.47	0.80	1.11	0.74	0.62	0.20
Uniform Delay, d1	54.8	51.0	42.0	48.5	42.8	34.6	59.0	43.7	47.0	32.1	41.0	36.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.2	36.8	0.4	37.7	8.8	0.5	2.5	5.0	76.2	14.4	2.1	1.4
Delay (s)	94.0	87.8	42.4	86.2	51.6	35.1	61.5	48.7	123.2	46.5	43.0	37.4
Level of Service	F	F	D	F	D	D	E	D	F	D	D	D
Approach Delay (s)		83.9			61.9			79.9			42.4	
Approach LOS		F			E			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			68.4				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			25.0		
Intersection Capacity Utilization			95.0%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↘	↗
Traffic Volume (vph)	1885	55	35	2115	455	105
Future Volume (vph)	1885	55	35	2115	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			0.108		0.950	
Satd. Flow (perm)	4759	1482	205	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)	1885	55	35	2115	455	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1885	55	35	2115	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

2031 Total PM  
Premier Gateway Phase 1B Employment Area

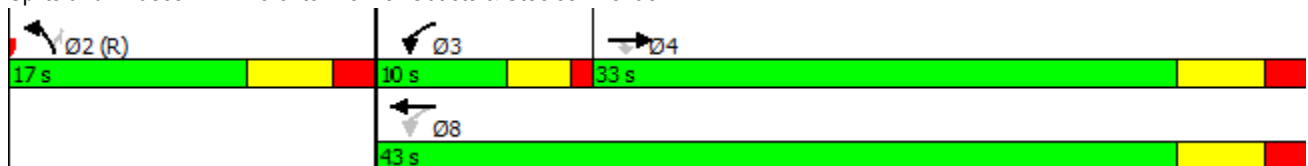


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	26.0	26.0	10.0	26.0	17.0	17.0
Total Split (s)	33.0	33.0	10.0	43.0	17.0	17.0
Total Split (%)	55.0%	55.0%	16.7%	71.7%	28.3%	28.3%
Maximum Green (s)	27.0	27.0	6.0	37.0	11.0	11.0
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	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)	33.0	33.0	39.0	37.0	11.0	11.0
Actuated g/C Ratio	0.55	0.55	0.65	0.62	0.18	0.18
v/c Ratio	0.72	0.07	0.12	0.70	0.72	0.28
Control Delay	13.8	3.5	4.7	9.4	30.6	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	3.5	4.7	9.4	30.6	7.6
LOS	B	A	A	A	C	A
Approach Delay	13.5			9.3	26.3	
Approach LOS	B			A	C	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBL an 6:; Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 13.1  
 Intersection Capacity Utilization 63.8%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

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





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1885	55	35	2115	455	105
v/c Ratio	0.72	0.07	0.12	0.70	0.72	0.28
Control Delay	13.8	3.5	4.7	9.4	30.6	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	3.5	4.7	9.4	30.6	7.6
Queue Length 50th (m)	43.1	0.0	1.2	51.7	25.8	0.0
Queue Length 95th (m)	#93.7	5.0	3.5	67.1	#41.1	11.0
Internal Link Dist (m)	287.3			176.7	95.1	
Turn Bay Length (m)		130.0	45.0			40.0
Base Capacity (vph)	2617	839	293	3017	635	378
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	0.07	0.12	0.70	0.72	0.28

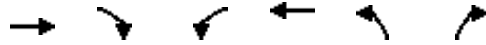
#### Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
7: Toronto Premier Outlets & Steeles Avenue

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	1885	55	35	2115	455	105
Future Volume (vph)	1885	55	35	2115	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
Flt	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	205	4893	3467	1599
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1885	55	35	2115	455	105
RTOR Reduction (vph)	0	25	0	0	0	90
Lane Group Flow (vph)	1885	30	35	2115	455	15
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)	33.0	33.0	39.4	39.4	8.6	8.6
Effective Green, g (s)	33.0	33.0	39.4	39.4	8.6	8.6
Actuated g/C Ratio	0.55	0.55	0.66	0.66	0.14	0.14
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)	2617	815	198	3213	496	229
v/s Ratio Prot	c0.40		0.01	c0.43	c0.13	
v/s Ratio Perm		0.02	0.11			0.01
v/c Ratio	0.72	0.04	0.18	0.66	0.92	0.07
Uniform Delay, d1	10.1	6.2	5.6	6.2	25.3	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	0.4	1.1	24.3	0.6
Delay (s)	11.8	6.3	6.1	7.3	49.7	22.8
Level of Service	B	A	A	A	D	C
Approach Delay (s)	11.7			7.3	44.6	
Approach LOS	B			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			13.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.78			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	16.0
Intersection Capacity Utilization			63.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

8: Toronto Premium Outlets/Eighth Line & Steeles Avenue 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)	340	1515	25	180	2095	320	85	45	155	370	30	95
Future Volume (vph)	340	1515	25	180	2095	320	85	45	155	370	30	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	120.0		55.0	30.0		30.0	0.0		0.0	100.0		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
Frt			0.850			0.850		0.884			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	4631	1615	1770	4848	1599	3367	1654	0	1752	1658	0
Flt Permitted	0.065			0.115			0.950			0.286		
Satd. Flow (perm)	124	4631	1615	214	4848	1599	3367	1654	0	528	1658	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			159		103			95	
Link Speed (k/h)		60			60			50			70	
Link Distance (m)		200.7			870.8			218.1			564.0	
Travel Time (s)		12.0			52.2			15.7			29.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	12%	0%	2%	7%	1%	4%	0%	2%	3%	0%	2%
Adj. Flow (vph)	340	1515	25	180	2095	320	85	45	155	370	30	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	340	1515	25	180	2095	320	85	200	0	370	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		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8				6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		5.0	10.0	

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

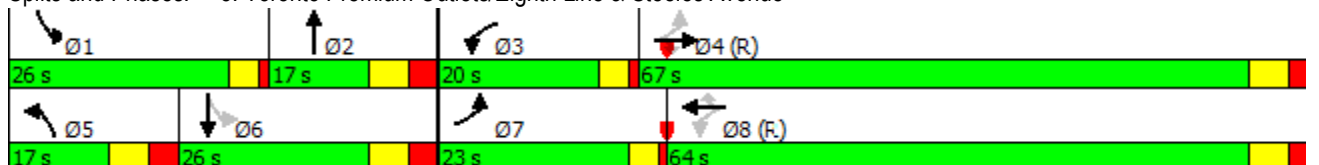


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	26.0	26.0	11.0	26.0	26.0	17.0	17.0		9.5	17.0	
Total Split (s)	23.0	67.0	67.0	20.0	64.0	64.0	17.0	17.0		26.0	26.0	
Total Split (%)	17.7%	51.5%	51.5%	15.4%	49.2%	49.2%	13.1%	13.1%		20.0%	20.0%	
Maximum Green (s)	19.0	61.0	61.0	16.0	58.0	58.0	10.0	10.0		22.0	19.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0		1.0	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		4.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	0.2	0.2	3.0	0.2	0.2	4.0	4.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	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)	82.8	64.9	64.9	72.1	58.0	58.0	10.0	10.0		39.0	19.0	
Actuated g/C Ratio	0.64	0.50	0.50	0.55	0.45	0.45	0.08	0.08		0.30	0.15	
v/c Ratio	1.05	0.66	0.03	0.68	0.97	0.40	0.33	0.90		1.01	0.39	
Control Delay	101.6	26.4	0.0	30.7	48.6	13.2	60.5	68.1		92.0	19.1	
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	101.6	26.7	0.0	30.7	48.6	13.2	60.5	68.1		92.0	19.1	
LOS	F	C	A	C	D	B	E	E		F	B	
Approach Delay		39.9			43.0			65.8			73.6	
Approach LOS		D			D			E			E	

Intersection Summary

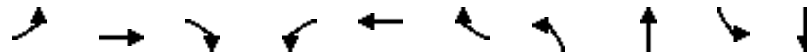
Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.05  
 Intersection Signal Delay: 46.0 Intersection LOS: D  
 Intersection Capacity Utilization 109.2% ICU Level of Service H  
 Analysis Period (min) 15

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





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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	340	1515	25	180	2095	320	85	200	370	125
v/c Ratio	1.05	0.66	0.03	0.68	0.97	0.40	0.33	0.90	1.01	0.39
Control Delay	101.6	26.4	0.0	30.7	48.6	13.2	60.5	68.1	92.0	19.1
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.6	26.7	0.0	30.7	48.6	13.2	60.5	68.1	92.0	19.1
Queue Length 50th (m)	~82.0	108.3	0.0	18.3	198.2	26.9	11.3	26.4	~90.1	7.1
Queue Length 95th (m)	#145.1	133.7	0.0	41.6	#238.1	51.0	20.3	#73.3	#148.2	26.4
Internal Link Dist (m)		176.7			846.8			194.1		540.0
Turn Bay Length (m)	120.0		55.0	30.0		30.0			100.0	
Base Capacity (vph)	324	2312	885	316	2162	801	259	222	365	323
Starvation Cap Reductn	0	288	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	1.05	0.75	0.03	0.57	0.97	0.40	0.33	0.90	1.01	0.39

## 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

2031 Total 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	1515	25	180	2095	320	85	45	155	370	30	95
Future Volume (vph)	340	1515	25	180	2095	320	85	45	155	370	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		4.0	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	0.06	1.00	1.00	0.12	1.00	1.00	0.95	1.00		0.29	1.00	
Satd. Flow (perm)	123	4631	1615	215	4848	1599	3367	1653		527	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	1515	25	180	2095	320	85	45	155	370	30	95
RTOR Reduction (vph)	0	0	13	0	0	88	0	95	0	0	81	0
Lane Group Flow (vph)	340	1515	12	180	2095	232	85	105	0	370	44	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		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)	81.0	64.9	64.9	70.1	58.0	58.0	10.0	10.0		36.0	19.0	
Effective Green, g (s)	81.0	64.9	64.9	70.1	58.0	58.0	10.0	10.0		36.0	19.0	
Actuated g/C Ratio	0.62	0.50	0.50	0.54	0.45	0.45	0.08	0.08		0.28	0.15	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		4.0	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	2311	806	260	2162	713	259	127		353	242	
v/s Ratio Prot	c0.15	0.33		0.06	0.43		0.03	0.06		c0.18	0.03	
v/s Ratio Perm	c0.50		0.01	0.31		0.15				c0.11		
v/c Ratio	1.06	0.66	0.02	0.69	0.97	0.33	0.33	0.83		1.05	0.18	
Uniform Delay, d1	43.9	24.2	16.4	17.9	35.1	23.3	56.8	59.1		43.7	48.7	
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	65.6	1.5	0.0	7.7	13.3	1.2	1.0	34.9		61.1	1.6	
Delay (s)	109.5	25.7	16.5	25.6	48.4	24.5	57.8	94.0		104.7	50.3	
Level of Service	F	C	B	C	D	C	E	F		F	D	
Approach Delay (s)		40.7			43.9			83.2			91.0	
Approach LOS		D			D			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			49.3				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			1.14									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			109.2%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total PM  
 Premier Gateway Phase 1B Employment Area

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑↑	↘	↗
Traffic Volume (vph)	1985	5	0	2595	5	10
Future Volume (vph)	1985	5	0	2595	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
Fr <sub>t</sub>						0.850
Flt Protected					0.950	
Satd. Flow (prot)	4711	0	1900	4893	1805	1346
Flt Permitted					0.950	
Satd. Flow (perm)	4711	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)	1985	5	0	2595	5	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1990	0	0	2595	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	60.1%
Analysis Period (min)	15
	ICU Level of Service B

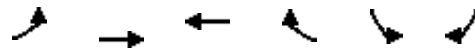
HCM Unsignalized Intersection Capacity Analysis  
 9: Eighth Line South & Steeles Avenue

2031 Total PM  
 Premier Gateway Phase 1B Employment Area

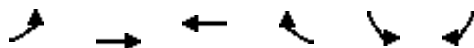
	→	↘	↙	←	↖	↗					
Movement	EBT	EBR	WBL	WBT	NBL	NBR					
Lane Configurations	↑↑↑		↘	↑↑↑	↘	↗					
Traffic Volume (veh/h)	1985	5	0	2595	5	10					
Future Volume (Veh/h)	1985	5	0	2595	5	10					
Sign Control	Free			Free	Stop						
Grade	0%			0%	0%						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Hourly flow rate (vph)	1985	5	0	2595	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			1990			2852	664				
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol			1990			2852	664				
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			64	97				
cM capacity (veh/h)			293			14	363				
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2		
Volume Total	794	794	402	0	865	865	865	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	14	363		
Volume to Capacity	0.47	0.47	0.24	0.00	0.51	0.51	0.51	0.36	0.03		
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.7		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	370.1	15.2		
Lane LOS								F	C		
Approach Delay (s)	0.0			0.0				133.5			
Approach LOS								F			
Intersection Summary											
Average Delay			0.4								
Intersection Capacity Utilization			60.1%		ICU Level of Service				B		
Analysis Period (min)			15								

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

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑↑↑	↑↑↑↑	↗	↖↗	↗
Traffic Volume (vph)	160	1875	2450	1095	420	105
Future Volume (vph)	160	1875	2450	1095	420	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0			75.0	105.0	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)	1719	4673	4893	1615	3367	1524
Flt Permitted	0.050				0.950	
Satd. Flow (perm)	90	4673	4893	1615	3367	1524
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				351		105
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	1875	2450	1095	420	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	1875	2450	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	Free	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			Free		6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0		10.0	10.0

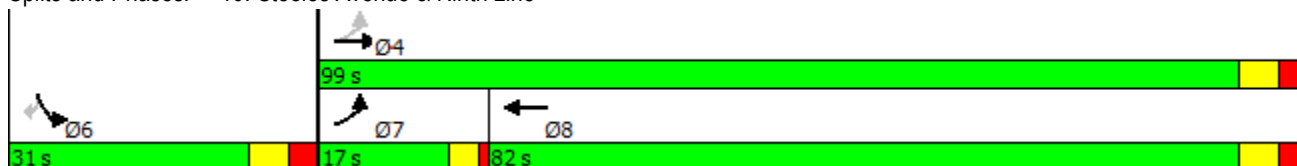


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	11.0	27.0	27.0		17.0	17.0
Total Split (s)	17.0	99.0	82.0		31.0	31.0
Total Split (%)	13.1%	76.2%	63.1%		23.8%	23.8%
Maximum Green (s)	13.0	92.0	75.0		24.0	24.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	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		3.0	3.0
Recall Mode	None	Max	Max		Max	Max
Act Effct Green (s)	95.0	92.0	76.7	130.0	24.0	24.0
Actuated g/C Ratio	0.73	0.71	0.59	1.00	0.18	0.18
v/c Ratio	0.77	0.57	0.85	0.68	0.68	0.29
Control Delay	53.2	10.1	26.0	2.3	55.6	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	10.1	26.0	2.3	55.6	10.3
LOS	D	B	C	A	E	B
Approach Delay		13.5	18.7		46.5	
Approach LOS		B	B		D	

Intersection Summary

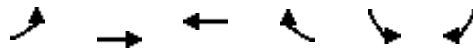
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.85
Intersection Signal Delay:	19.3
Intersection Capacity Utilization	83.2%
Analysis Period (min)	15
Intersection LOS:	B
ICU Level of Service	E

Splits and Phases: 10: Steeles Avenue & Ninth Line



Queues  
10: Steeles Avenue & Ninth Line

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	160	1875	2450	1095	420	105
v/c Ratio	0.77	0.57	0.85	0.68	0.68	0.29
Control Delay	53.2	10.1	26.0	2.3	55.6	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	10.1	26.0	2.3	55.6	10.3
Queue Length 50th (m)	25.4	81.5	195.7	0.0	55.0	0.0
Queue Length 95th (m)	#55.3	93.2	219.5	0.0	73.2	16.3
Internal Link Dist (m)		501.4	145.8		3096.2	
Turn Bay Length (m)	70.0			75.0	105.0	
Base Capacity (vph)	228	3307	2885	1615	621	366
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	0.70	0.57	0.85	0.68	0.68	0.29

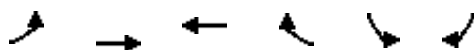
Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 10: Steeles Avenue & Ninth Line

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	160	1875	2450	1095	420	105
Future Volume (vph)	160	1875	2450	1095	420	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Fr <sub>t</sub>	1.00	1.00	1.00	0.85	1.00	0.85
Fl <sub>t</sub> Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	4673	4893	1615	3367	1524
Fl <sub>t</sub> Permitted	0.05	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	90	4673	4893	1615	3367	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	1875	2450	1095	420	105
RTOR Reduction (vph)	0	0	0	0	0	86
Lane Group Flow (vph)	160	1875	2450	1095	420	19
Heavy Vehicles (%)	5%	11%	6%	0%	4%	6%
Turn Type	pm+pt	NA	NA	Free	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			Free		6
Actuated Green, G (s)	92.0	92.0	76.7	130.0	24.0	24.0
Effective Green, g (s)	92.0	92.0	76.7	130.0	24.0	24.0
Actuated g/C Ratio	0.71	0.71	0.59	1.00	0.18	0.18
Clearance Time (s)	4.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	0.2	0.2		3.0	3.0
Lane Grp Cap (vph)	205	3307	2886	1615	621	281
v/s Ratio Prot	0.07	0.40	c0.50		0.12	
v/s Ratio Perm	0.49			c0.68		0.01
v/c Ratio	0.78	0.57	0.85	0.68	0.68	0.07
Uniform Delay, d <sub>1</sub>	37.8	9.3	21.9	0.0	49.4	43.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d <sub>2</sub>	17.3	0.7	3.3	2.3	5.8	0.5
Delay (s)	55.1	10.0	25.2	2.3	55.2	44.2
Level of Service	E	A	C	A	E	D
Approach Delay (s)		13.5	18.2		53.0	
Approach LOS		B	B		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			19.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.86			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			83.2%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						



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

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	520	10	5	1855	635	225
Future Volume (vph)	520	10	5	1855	635	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	50.0	30.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.961	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	3539	3419	0
Flt Permitted	0.950		0.272			
Satd. Flow (perm)	1805	1615	517	3539	3419	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		6			68	
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)	520	10	5	1855	635	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	520	10	5	1855	860	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)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				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	Prot	Perm	Perm	NA	NA	
Protected Phases	2			8	4	
Permitted Phases		2	8			
Detector Phase	2	2	8	8	4	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	

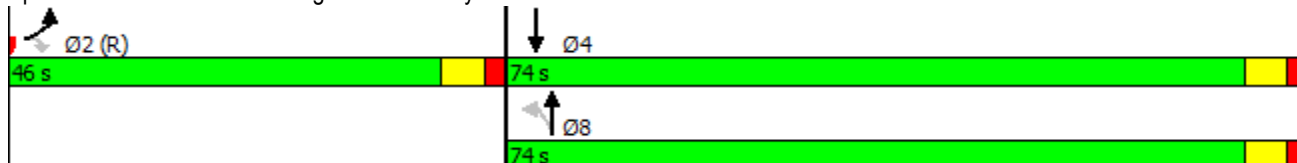


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	46.0	46.0	74.0	74.0	74.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	40.0	40.0	68.0	68.0	68.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	None	None	
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)	40.6	40.6	67.4	67.4	67.4	
Actuated g/C Ratio	0.34	0.34	0.56	0.56	0.56	
v/c Ratio	0.85	0.02	0.02	0.93	0.44	
Control Delay	52.0	18.8	13.8	24.8	14.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.0	18.8	13.8	24.8	14.7	
LOS	D	B	B	C	B	
Approach Delay	51.3			24.7	14.7	
Approach LOS	D			C	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBL and 6:, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.93  
 Intersection Signal Delay: 26.4  
 Intersection Capacity Utilization 90.1%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service E

Splits and Phases: 11: Trafalgar Rd & Hornby Rd





Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	520	10	5	1855	860
v/c Ratio	0.85	0.02	0.02	0.93	0.44
Control Delay	52.0	18.8	13.8	24.8	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	18.8	13.8	24.8	14.7
Queue Length 50th (m)	120.1	0.7	0.4	108.5	56.2
Queue Length 95th (m)	#181.6	4.7	m0.6	m123.4	71.4
Internal Link Dist (m)	30.4			111.9	191.8
Turn Bay Length (m)		50.0	30.0		
Base Capacity (vph)	610	550	292	2005	1966
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.02	0.02	0.93	0.44

#### Intersection Summary

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

Queue shown is maximum after two cycles.

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

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

















2031 Total PM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	520	10	5	1855	635	225
Future Volume (vph)	520	10	5	1855	635	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.96	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	3539	3418	
Flt Permitted	0.95	1.00	0.27	1.00	1.00	
Satd. Flow (perm)	1805	1615	517	3539	3418	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	520	10	5	1855	635	225
RTOR Reduction (vph)	0	4	0	0	30	0
Lane Group Flow (vph)	520	6	5	1855	830	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	2			8	4	
Permitted Phases		2	8			
Actuated Green, G (s)	40.6	40.6	67.4	67.4	67.4	
Effective Green, g (s)	40.6	40.6	67.4	67.4	67.4	
Actuated g/C Ratio	0.34	0.34	0.56	0.56	0.56	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	610	546	290	1987	1919	
v/s Ratio Prot	c0.29			c0.52	0.24	
v/s Ratio Perm		0.00	0.01			
v/c Ratio	0.85	0.01	0.02	0.93	0.43	
Uniform Delay, d1	36.9	26.4	11.6	24.2	15.2	
Progression Factor	1.00	1.00	1.18	0.77	1.00	
Incremental Delay, d2	14.1	0.0	0.0	4.9	0.2	
Delay (s)	51.0	26.4	13.8	23.7	15.4	
Level of Service	D	C	B	C	B	
Approach Delay (s)	50.5			23.7	15.4	
Approach LOS	D			C	B	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			25.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.90			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			90.1%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

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

















2031 Total 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	345	10	25	755	30	10	60	35	5	45	20
Future Volume (vph)	55	345	10	25	755	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
Fr <sub>t</sub>		0.997			0.995			0.955			0.961	
Fl <sub>t</sub> Protected		0.993			0.998			0.995			0.996	
Satd. Flow (prot)	0	1850	0	0	1835	0	0	1748	0	0	1734	0
Fl <sub>t</sub> Permitted		0.993			0.998			0.995			0.996	
Satd. Flow (perm)	0	1850	0	0	1835	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	345	10	25	755	30	10	60	35	5	45	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	410	0	0	810	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	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	60.6%						ICU Level of Service B					
Analysis Period (min)	15											

# HCM Unsignalized Intersection Capacity Analysis

















## 12: Fifth Line & 5 Side Road

2031 Total 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	345	10	25	755	30	10	60	35	5	45	20
Future Volume (Veh/h)	55	345	10	25	755	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	345	10	25	755	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	785			355			1322	1295	350	1345	1285	770
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	785			355			1322	1295	350	1345	1285	770
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 %	93			98			88	60	95	94	70	95
cM capacity (veh/h)	843			1215			85	150	687	80	152	378
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	410	810	105	70								
Volume Left	55	25	10	5								
Volume Right	10	30	35	20								
cSH	843	1215	185	170								
Volume to Capacity	0.07	0.02	0.57	0.41								
Queue Length 95th (m)	1.7	0.5	24.3	14.6								
Control Delay (s)	2.0	0.5	47.5	40.2								
Lane LOS	A	A	E	E								
Approach Delay (s)	2.0	0.5	47.5	40.2								
Approach LOS			E	E								
<b>Intersection Summary</b>												
Average Delay			6.5									
Intersection Capacity Utilization			60.6%		ICU Level of Service				B			
Analysis Period (min)			15									

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

2031 Total 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	315	40	20	755	25	105	55	30	10	25	10
Future Volume (vph)	5	315	40	20	755	25	105	55	30	10	25	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		0.985			0.996			0.979			0.970	
Flt Protected		0.999			0.999			0.973			0.989	
Satd. Flow (prot)	0	1816	0	0	1788	0	0	1763	0	0	1783	0
Flt Permitted		0.999			0.999			0.973			0.989	
Satd. Flow (perm)	0	1816	0	0	1788	0	0	1763	0	0	1783	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	315	40	20	755	25	105	55	30	10	25	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	0	0	800	0	0	190	0	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		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	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	76.6%						ICU Level of Service D					
Analysis Period (min)	15											

# HCM Unsignalized Intersection Capacity Analysis

## 13: Sixth Line & 5 Side Road

2031 Total 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	315	40	20	755	25	105	55	30	10	25	10
Future Volume (Veh/h)	5	315	40	20	755	25	105	55	30	10	25	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	315	40	20	755	25	105	55	30	10	25	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	780			355			1175	1165	335	1210	1172	768
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	780			355			1175	1165	335	1210	1172	768
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			28	71	96	91	87	98
cM capacity (veh/h)	786			1215			147	191	674	112	189	405
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	360	800	190	45								
Volume Left	5	20	105	10								
Volume Right	40	25	30	10								
cSH	786	1215	181	183								
Volume to Capacity	0.01	0.02	1.05	0.25								
Queue Length 95th (m)	0.2	0.4	72.1	7.4								
Control Delay (s)	0.2	0.4	133.2	31.0								
Lane LOS	A	A	F	D								
Approach Delay (s)	0.2	0.4	133.2	31.0								
Approach LOS			F	D								
Intersection Summary												
Average Delay			19.4									
Intersection Capacity Utilization			76.6%		ICU Level of Service					D		
Analysis Period (min)			15									



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

2031 Total 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	235	70	125	530	55	175	2215	190	15	1015	95
Future Volume (vph)	75	235	70	125	530	55	175	2215	190	15	1015	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		115.0	40.0		0.0	40.0		20.0	50.0		20.0
Storage Lanes	1		1	1		0	1		1	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	1.00	1.00	0.95	1.00
Frt			0.850		0.986				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3539	1482	1805	3559	0	1770	3471	1615	1583	3438	1509
Flt Permitted	0.211			0.400			0.218			0.042		
Satd. Flow (perm)	368	3539	1482	760	3559	0	406	3471	1615	70	3438	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		6				80			80
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	235	70	125	530	55	175	2215	190	15	1015	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	235	70	125	585	0	175	2215	190	15	1015	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		7.0	25.0	25.0	7.0	25.0	25.0

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

2031 Total 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	32.0	11.0	32.0	32.0
Total Split (s)	9.0	25.0	25.0	13.0	29.0		14.0	101.0	101.0	11.0	98.0	98.0
Total Split (%)	6.0%	16.7%	16.7%	8.7%	19.3%		9.3%	67.3%	67.3%	7.3%	65.3%	65.3%
Maximum Green (s)	5.0	19.0	19.0	9.0	23.0		10.0	95.0	95.0	7.0	92.0	92.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	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	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	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	Max
Walk Time (s)		7.0	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	20.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	26.0	19.0	19.0	34.0	23.0		107.2	101.2	101.2	101.0	92.0	92.0
Actuated g/C Ratio	0.17	0.13	0.13	0.23	0.15		0.72	0.68	0.68	0.68	0.61	0.61
v/c Ratio	0.71	0.52	0.27	0.53	1.06		0.46	0.94	0.17	0.13	0.48	0.10
Control Delay	83.4	65.8	11.8	57.5	113.8		10.6	31.9	5.9	8.5	16.7	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.4	65.8	11.8	57.5	113.8		10.6	31.9	5.9	8.5	16.7	3.4
LOS	F	E	B	E	F		B	C	A	A	B	A
Approach Delay		59.3			103.9			28.5			15.5	
Approach LOS		E			F			C			B	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 149.6  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 39.1  
 Intersection Capacity Utilization 104.3%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service G

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



Queues  
14: Trafalgar Rd & 5 Side Road

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	235	70	125	585	175	2215	190	15	1015	95
v/c Ratio	0.71	0.52	0.27	0.53	1.06	0.46	0.94	0.17	0.13	0.48	0.10
Control Delay	83.4	65.8	11.8	57.5	113.8	10.6	31.9	5.9	8.5	16.7	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.4	65.8	11.8	57.5	113.8	10.6	31.9	5.9	8.5	16.7	3.4
Queue Length 50th (m)	19.2	36.8	0.0	32.9	~105.0	15.6	272.1	10.0	1.2	87.5	1.8
Queue Length 95th (m)	#43.1	51.9	12.3	53.1	#145.5	23.7	#422.2	23.8	3.4	104.4	9.4
Internal Link Dist (m)		199.8			641.2		240.1			238.0	
Turn Bay Length (m)	40.0		115.0	40.0		40.0		20.0	50.0		20.0
Base Capacity (vph)	106	449	257	235	551	382	2348	1118	117	2113	958
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.52	0.27	0.53	1.06	0.46	0.94	0.17	0.13	0.48	0.10

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

## 14: Trafalgar Rd & 5 Side Road

2031 Total 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	235	70	125	530	55	175	2215	190	15	1015	95
Future Volume (vph)	75	235	70	125	530	55	175	2215	190	15	1015	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	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	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	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	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1656	3539	1482	1805	3559		1770	3471	1615	1583	3438	1509
Flt Permitted	0.21	1.00	1.00	0.40	1.00		0.22	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)	367	3539	1482	760	3559		407	3471	1615	71	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	235	70	125	530	55	175	2215	190	15	1015	95
RTOR Reduction (vph)	0	0	61	0	5	0	0	0	27	0	0	30
Lane Group Flow (vph)	75	235	9	125	580	0	175	2215	163	15	1015	65
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	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	24.0	19.0	19.0	32.0	23.0		108.0	101.2	101.2	97.2	94.4	94.4
Effective Green, g (s)	24.0	19.0	19.0	32.0	23.0		108.0	101.2	101.2	97.2	94.4	94.4
Actuated g/C Ratio	0.16	0.12	0.12	0.21	0.15		0.71	0.67	0.67	0.64	0.62	0.62
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0	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	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	100	442	185	221	538		375	2310	1075	73	2135	937
v/s Ratio Prot	c0.02	0.07		c0.03	c0.16		c0.03	c0.64		0.00	0.30	
v/s Ratio Perm	0.09		0.01	0.09			0.30		0.10	0.13		0.04
v/c Ratio	0.75	0.53	0.05	0.57	1.08		0.47	0.96	0.15	0.21	0.48	0.07
Uniform Delay, d1	59.6	62.3	58.5	51.1	64.5		9.5	23.5	9.4	32.0	15.5	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	2.2	0.2	3.3	61.5		0.9	11.3	0.3	1.4	0.8	0.1
Delay (s)	86.2	64.6	58.8	54.4	126.0		10.4	34.8	9.7	33.4	16.2	11.5
Level of Service	F	E	E	D	F		B	C	A	C	B	B
Approach Delay (s)		67.8			113.4			31.3			16.1	
Approach LOS		E			F			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			42.8			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			152.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			104.3%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

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

2031 Total 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)	110	385	10	65	650	110	5	675	145	30	230	65
Future Volume (vph)	110	385	10	65	650	110	5	675	145	30	230	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.980			0.976			0.967	
Flt Protected		0.989			0.996					0.950		
Satd. Flow (prot)	0	3454	0	0	3462	0	0	1823	0	1805	1821	0
Flt Permitted		0.559			0.845			0.998		0.288		
Satd. Flow (perm)	0	1952	0	0	2937	0	0	1820	0	547	1821	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			27			24			32	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		643.4			668.7			2522.4			454.5	
Travel Time (s)		38.6			40.1			129.7			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)	110	385	10	65	650	110	5	675	145	30	230	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	505	0	0	825	0	0	825	0	30	295	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	

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

2031 Total 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	24.0		24.0	24.0	
Total Split (s)	26.0	26.0		26.0	26.0		39.0	39.0		39.0	39.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		60.0%	60.0%		60.0%	60.0%	
Maximum Green (s)	20.0	20.0		20.0	20.0		33.0	33.0		33.0	33.0	
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)		19.5			19.5			33.0			33.0	
Actuated g/C Ratio		0.30			0.30			0.51			0.51	
v/c Ratio		0.96dl			0.91			0.88			0.11	0.31
Control Delay		37.5			37.4			26.8			9.6	9.3
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		37.5			37.4			26.8			9.6	9.3
LOS		D			D			C			A	A
Approach Delay		37.5			37.4			26.8				9.4
Approach LOS		D			D			C				A

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 64.5  
 Natural Cycle: 55  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 30.2      Intersection LOS: C  
 Intersection Capacity Utilization 100.9%      ICU Level of Service G  
 Analysis Period (min) 15  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

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





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	505	825	825	30	295
v/c Ratio	0.96dl	0.91	0.88	0.11	0.31
Control Delay	37.5	37.4	26.8	9.6	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	37.4	26.8	9.6	9.3
Queue Length 50th (m)	30.8	50.4	84.2	1.9	17.8
Queue Length 95th (m)	#57.5	#84.5	#159.8	6.0	32.1
Internal Link Dist (m)	619.4	644.7	2498.4		430.5
Turn Bay Length (m)				25.0	
Base Capacity (vph)	607	929	942	279	947
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.89	0.88	0.11	0.31

#### Intersection Summary

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

Queue shown is maximum after two cycles.

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

# HCM Signalized Intersection Capacity Analysis

## 15: Eighth Line & 5 Side Road

2031 Total 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)	110	385	10	65	650	110	5	675	145	30	230	65
Future Volume (vph)	110	385	10	65	650	110	5	675	145	30	230	65
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	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frt		1.00			0.98			0.98		1.00	0.97	
Flt Protected		0.99			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		3455			3462			1823		1805	1821	
Flt Permitted		0.56			0.85			1.00		0.29	1.00	
Satd. Flow (perm)		1951			2938			1821		546	1821	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	110	385	10	65	650	110	5	675	145	30	230	65
RTOR Reduction (vph)	0	2	0	0	19	0	0	12	0	0	16	0
Lane Group Flow (vph)	0	503	0	0	806	0	0	813	0	30	279	0
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)		19.5			19.5			33.0		33.0	33.0	
Effective Green, g (s)		19.5			19.5			33.0		33.0	33.0	
Actuated g/C Ratio		0.30			0.30			0.51		0.51	0.51	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		589			888			931		279	931	
v/s Ratio Prot												0.15
v/s Ratio Perm		0.26			c0.27			c0.45		0.05		
v/c Ratio		0.96dl			0.91			0.87		0.11	0.30	
Uniform Delay, d1		21.2			21.6			13.9		8.1	9.1	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		11.5			12.8			11.2		0.8	0.8	
Delay (s)		32.7			34.4			25.1		8.9	9.9	
Level of Service		C			C			C		A	A	
Approach Delay (s)		32.7			34.4			25.1			9.8	
Approach LOS		C			C			C			A	

### Intersection Summary

HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		

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

c Critical Lane Group



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

2031 Total 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	465	25	10	770	350	20	1175	15	45	480	35
Future Volume (vph)	40	465	25	10	770	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	55.0		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		0.992				0.850		0.998			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3581	0	1805	3610	1615	1805	3601	0	1805	3541	0
Flt Permitted	0.230			0.434			0.462			0.135		
Satd. Flow (perm)	424	3581	0	825	3610	1615	878	3601	0	256	3541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				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	465	25	10	770	350	20	1175	15	45	480	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	490	0	10	770	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 Total 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)	17.4	17.4		17.4	17.4	17.4	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	0.32	0.47		0.04	0.73	0.51	0.05	0.76		0.14	0.29	
Control Delay	24.8	18.5		15.6	23.6	6.8	13.9	22.6		7.8	8.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	24.8	18.5		15.6	23.6	6.8	13.9	22.6		7.8	8.8	
LOS	C	B		B	C	A	B	C		A	A	
Approach Delay		19.0			18.3			22.5			8.8	
Approach LOS		B			B			C			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 59.4  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 18.3  
 Intersection Capacity Utilization 82.1%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service E

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



Queues

2031 Total PM

16: Ninth Line & 5 Side Road

Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	490	10	770	350	20	1190	45	515
v/c Ratio	0.32	0.47	0.04	0.73	0.51	0.05	0.76	0.14	0.29
Control Delay	24.8	18.5	15.6	23.6	6.8	13.9	22.6	7.8	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	18.5	15.6	23.6	6.8	13.9	22.6	7.8	8.8
Queue Length 50th (m)	3.5	23.4	0.8	41.2	4.3	1.1	49.8	2.3	16.2
Queue Length 95th (m)	11.8	35.7	3.8	59.2	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		55.0	
Base Capacity (vph)	128	1092	250	1095	697	379	1557	320	1798
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	0.31	0.45	0.04	0.70	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 Total 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	465	25	10	770	350	20	1175	15	45	480	35	
Future Volume (vph)	40	465	25	10	770	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	3582		1805	3610	1615	1805	3602		1805	3540		
Flt Permitted	0.23	1.00		0.43	1.00	1.00	0.46	1.00		0.13	1.00		
Satd. Flow (perm)	424	3582		825	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	465	25	10	770	350	20	1175	15	45	480	35	
RTOR Reduction (vph)	0	6	0	0	0	214	0	1	0	0	9	0	
Lane Group Flow (vph)	40	484	0	10	770	136	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)	17.4	17.4		17.4	17.4	17.4	25.7	25.7		32.5	32.5		
Effective Green, g (s)	17.4	17.4		17.4	17.4	17.4	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)	119	1006		231	1014	453	364	1495		204	1858		
v/s Ratio Prot		0.13			c0.21			c0.33		0.01	c0.14		
v/s Ratio Perm	0.09			0.01		0.08	0.02			0.11			
v/c Ratio	0.34	0.48		0.04	0.76	0.30	0.05	0.80		0.22	0.27		
Uniform Delay, d1	17.7	18.5		16.2	20.3	17.5	10.8	15.8		9.8	8.1		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2	2.0	0.4		0.1	3.4	0.4	0.3	4.5		0.5	0.4		
Delay (s)	19.6	18.9		16.3	23.8	17.9	11.1	20.3		10.3	8.5		
Level of Service	B	B		B	C	B	B	C		B	A		
Approach Delay (s)		19.0			21.9			20.1			8.7		
Approach LOS		B			C			C			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			18.6									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.76										
Actuated Cycle Length (s)			61.9									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  
17: "Street C"/"Street B" & Steeles Avenue

2031 Total 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)	170	945	50	160	1475	50	210	0	530	105	0	390
Future Volume (vph)	170	945	50	160	1475	50	210	0	530	105	0	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		30.0	60.0		30.0	30.0		100.0	30.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	1863	1583	1770	1583	0
Flt Permitted	0.085			0.950			0.157			0.757		
Satd. Flow (perm)	158	5085	1583	3433	5085	1583	292	1863	1583	1410	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			136			278		215	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		446.2			433.6			329.9			259.4	
Travel Time (s)		26.8			26.0			23.8			18.7	
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
Adj. Flow (vph)	170	945	50	160	1475	50	210	0	530	105	0	390
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	945	50	160	1475	50	210	0	530	105	390	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)		7.2			7.2			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	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
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	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	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	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt		Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	24.0	24.0	9.5	24.0	24.0	9.5	24.0	24.0	9.5	24.0	

Lanes, Volumes, Timings  
 17: "Street C"/"Street B" & Steeles Avenue

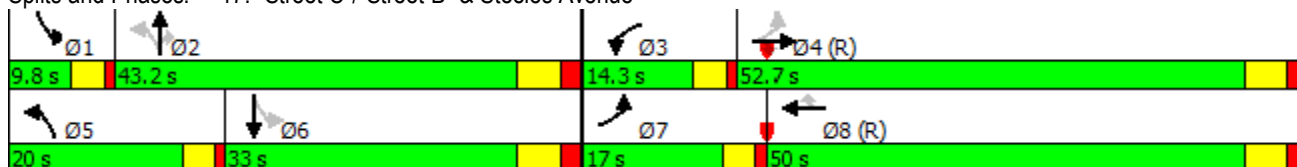
2031 Total PM  
 Premier Gateway Phase 1B Employment Area

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	17.0	52.7	52.7	14.3	50.0	50.0	20.0	43.2	43.2	9.8	33.0	
Total Split (%)	14.2%	43.9%	43.9%	11.9%	41.7%	41.7%	16.7%	36.0%	36.0%	8.2%	27.5%	
Maximum Green (s)	13.0	46.7	46.7	10.3	44.0	44.0	16.0	37.2	37.2	5.8	27.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	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	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	
Walk Time (s)		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	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	60.7	47.3	47.3	9.7	45.6	45.6	49.0		37.2	36.7	28.9	
Actuated g/C Ratio	0.51	0.39	0.39	0.08	0.38	0.38	0.41		0.31	0.31	0.24	
v/c Ratio	0.73	0.47	0.07	0.58	0.76	0.07	0.72		0.78	0.23	0.72	
Control Delay	42.0	28.1	0.2	61.8	35.9	0.2	38.9		26.3	25.6	27.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	42.0	28.1	0.2	61.8	35.9	0.2	38.9		26.3	25.6	27.1	
LOS	D	C	A	E	D	A	D		C	C	C	
Approach Delay		29.0			37.3			29.9			26.8	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 32.3  
 Intersection Capacity Utilization 90.4%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service E

Splits and Phases: 17: "Street C"/"Street B" & Steeles Avenue

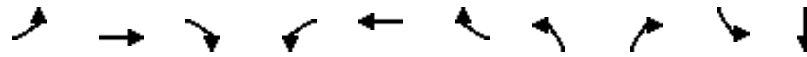


Queues

2031 Total PM

17: "Street C"/"Street B" & Steeles Avenue

Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	170	945	50	160	1475	50	210	530	105	390
v/c Ratio	0.73	0.47	0.07	0.58	0.76	0.07	0.72	0.78	0.23	0.72
Control Delay	42.0	28.1	0.2	61.8	35.9	0.2	38.9	26.3	25.6	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	28.1	0.2	61.8	35.9	0.2	38.9	26.3	25.6	27.1
Queue Length 50th (m)	23.6	63.5	0.0	19.9	117.4	0.0	34.4	59.2	16.1	40.7
Queue Length 95th (m)	#48.5	76.9	0.0	31.5	137.8	0.0	55.0	106.7	28.4	80.3
Internal Link Dist (m)		422.2			409.6					235.4
Turn Bay Length (m)	30.0		30.0	60.0		30.0	30.0	100.0	30.0	
Base Capacity (vph)	256	2004	706	294	1933	686	316	682	448	544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.47	0.07	0.54	0.76	0.07	0.66	0.78	0.23	0.72

Intersection Summary
























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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 17: "Street C"/"Street B" & Steeles Avenue

2031 Total 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)	170	945	50	160	1475	50	210	0	530	105	0	390	
Future Volume (vph)	170	945	50	160	1475	50	210	0	530	105	0	390	
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	4.0		6.0	4.0	6.0		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00		1.00	1.00	1.00		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	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)	1770	5085	1583	3433	5085	1583	1770		1583	1770	1583		
Flt Permitted	0.08	1.00	1.00	0.95	1.00	1.00	0.16		1.00	0.76	1.00		
Satd. Flow (perm)	158	5085	1583	3433	5085	1583	292		1583	1410	1583		
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)	170	945	50	160	1475	50	210	0	530	105	0	390	
RTOR Reduction (vph)	0	0	30	0	0	31	0	0	192	0	163	0	
Lane Group Flow (vph)	170	945	20	160	1475	19	210	0	338	105	227	0	
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt		Perm	pm+pt	NA		
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases	4		4			8	2		2	6			
Actuated Green, G (s)	58.7	47.3	47.3	9.7	45.6	45.6	47.0		37.2	34.7	28.9		
Effective Green, g (s)	58.7	47.3	47.3	9.7	45.6	45.6	47.0		37.2	34.7	28.9		
Actuated g/C Ratio	0.49	0.39	0.39	0.08	0.38	0.38	0.39		0.31	0.29	0.24		
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0		6.0	4.0	6.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		
Lane Grp Cap (vph)	230	2004	623	277	1932	601	288		490	425	381		
v/s Ratio Prot	c0.07	0.19		0.05	0.29		c0.09			0.01	0.14		
v/s Ratio Perm	c0.29		0.01			0.01	c0.20		0.21	0.06			
v/c Ratio	0.74	0.47	0.03	0.58	0.76	0.03	0.73		0.69	0.25	0.60		
Uniform Delay, d1	25.0	27.0	22.3	53.2	32.5	23.3	28.0		36.3	32.2	40.4		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		
Incremental Delay, d2	11.7	0.8	0.1	2.9	2.9	0.1	8.9		7.8	0.3	6.7		
Delay (s)	36.7	27.8	22.4	56.1	35.4	23.4	36.9		44.1	32.5	47.1		
Level of Service	D	C	C	E	D	C	D		D	C	D		
Approach Delay (s)		28.9			37.0			42.1			44.0		
Approach LOS		C			D			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			36.5			HCM 2000 Level of Service				D			
HCM 2000 Volume to Capacity ratio			0.77										
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				20.0			
Intersection Capacity Utilization			90.4%			ICU Level of Service				E			
Analysis Period (min)			15										
c Critical Lane Group													



Lanes, Volumes, Timings  
18: Hornby Road & "Street A"

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	410	0	0	65	20	110
Future Volume (vph)	410	0	0	65	20	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.886
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	1770	0	0	1863	1650	0
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1863	1650	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	166.0			1126.5	97.3	
Travel Time (s)	12.0			67.6	5.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	410	0	0	65	20	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	410	0	0	65	130	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)	25	15	25			15
Sign Control	Yield			Yield	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	37.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 18: Hornby Road & "Street A"

2031 Total PM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Right Turn Channelized						
Traffic Volume (veh/h)	410	0	0	65	20	110
Future Volume (veh/h)	410	0	0	65	20	110
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	410	0	0	65	20	110
Approach Volume (veh/h)	410			65	130	
Crossing Volume (veh/h)	20			410	0	
High Capacity (veh/h)	1363			1003	1385	
High v/c (veh/h)	0.30			0.06	0.09	
Low Capacity (veh/h)	1142			816	1161	
Low v/c (veh/h)	0.36			0.08	0.11	
<b>Intersection Summary</b>						
Maximum v/c High			0.30			
Maximum v/c Low			0.36			
Intersection Capacity Utilization			37.2%		ICU Level of Service	A

Lanes, Volumes, Timings  
19: Trafalgar Road & "Street B"

2031 Total 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)	195	0	165	465	0	195	120	1470	245	85	505	140
Future Volume (vph)	195	0	165	465	0	195	120	1470	245	85	505	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	85.0		0.0	50.0		50.0	50.0		50.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850			0.850				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.635			0.444			0.393			0.080		
Satd. Flow (perm)	1183	1583	0	827	1583	0	732	3539	1583	149	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		269			161				136			140
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		142.2			131.5			68.3			90.8	
Travel Time (s)		10.2			9.5			3.1			4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	195	0	165	465	0	195	120	1470	245	85	505	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	165	0	465	195	0	120	1470	245	85	505	140
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	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
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	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
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		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		1	6		3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	24.0		9.5	24.0		9.5	24.0	24.0	9.5	24.0	24.0

Lanes, Volumes, Timings  
19: Trafalgar Road & "Street B"

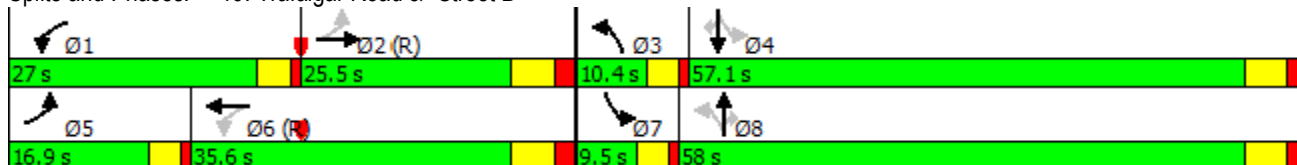
2031 Total PM  
Premier Gateway Phase 1B Employment Area

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	16.9	25.5		27.0	35.6		10.4	58.0	58.0	9.5	57.1	57.1
Total Split (%)	14.1%	21.3%		22.5%	29.7%		8.7%	48.3%	48.3%	7.9%	47.6%	47.6%
Maximum Green (s)	12.9	19.5		23.0	29.6		6.4	52.0	52.0	5.5	51.1	51.1
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0	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		4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	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)	35.8	21.8		50.6	32.6		58.9	51.8	51.8	56.5	49.0	49.0
Actuated g/C Ratio	0.30	0.18		0.42	0.27		0.49	0.43	0.43	0.47	0.41	0.41
v/c Ratio	0.47	0.33		0.88	0.36		0.29	0.96	0.32	0.59	0.35	0.19
Control Delay	29.0	1.7		48.7	10.8		16.8	49.4	10.8	52.9	47.9	22.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	1.7		48.7	10.8		16.8	49.4	10.8	52.9	47.9	22.9
LOS	C	A		D	B		B	D	B	D	D	C
Approach Delay		16.5			37.5			42.1			43.7	
Approach LOS		B			D			D			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 39.0  
 Intersection Capacity Utilization 98.0%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service F

Splits and Phases: 19: Trafalgar Road & "Street B"



Queues  
19: Trafalgar Road & "Street B"

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	195	165	465	195	120	1470	245	85	505	140
v/c Ratio	0.47	0.33	0.88	0.36	0.29	0.96	0.32	0.59	0.35	0.19
Control Delay	29.0	1.7	48.7	10.8	16.8	49.4	10.8	52.9	47.9	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	1.7	48.7	10.8	16.8	49.4	10.8	52.9	47.9	22.9
Queue Length 50th (m)	31.9	0.0	91.9	6.5	14.5	182.5	16.2	18.2	66.0	10.5
Queue Length 95th (m)	50.3	0.0	#126.6	26.8	24.9	#235.4	34.9	#35.1	84.3	33.5
Internal Link Dist (m)		118.2		107.5		44.3			66.8	
Turn Bay Length (m)	50.0		85.0		50.0		50.0	50.0		50.0
Base Capacity (vph)	425	507	529	547	414	1533	763	144	1507	754
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	0.46	0.33	0.88	0.36	0.29	0.96	0.32	0.59	0.34	0.19























Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 19: Trafalgar Road & "Street B"

2031 Total 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)	195	0	165	465	0	195	120	1470	245	85	505	140
Future Volume (vph)	195	0	165	465	0	195	120	1470	245	85	505	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1583		1770	1583		1770	3539	1583	1770	3539	1583
Flt Permitted	0.64	1.00		0.44	1.00		0.39	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1183	1583		827	1583		732	3539	1583	150	3539	1583
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)	195	0	165	465	0	195	120	1470	245	85	505	140
RTOR Reduction (vph)	0	136	0	0	118	0	0	0	77	0	0	82
Lane Group Flow (vph)	195	29	0	465	77	0	120	1470	168	85	505	58
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	33.0	21.0		47.8	31.8		58.2	51.8	51.8	54.2	49.8	49.8
Effective Green, g (s)	33.0	21.0		47.8	31.8		58.2	51.8	51.8	54.2	49.8	49.8
Actuated g/C Ratio	0.28	0.18		0.40	0.27		0.49	0.43	0.43	0.45	0.41	0.41
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0	6.0	4.0	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)	384	277		508	419		410	1527	683	127	1468	656
v/s Ratio Prot	0.05	0.02		c0.17	0.05		c0.02	c0.42		c0.02	0.14	
v/s Ratio Perm	0.09			c0.19			0.13		0.11	0.28		0.04
v/c Ratio	0.51	0.10		0.92	0.18		0.29	0.96	0.25	0.67	0.34	0.09
Uniform Delay, d1	35.4	41.6		30.9	34.1		17.4	33.2	21.7	27.4	24.0	21.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	2.31	1.95	6.44
Incremental Delay, d2	1.1	0.8		21.1	1.0		0.4	15.0	0.2	11.9	0.1	0.1
Delay (s)	36.5	42.4		52.0	35.0		17.8	48.2	21.9	75.3	46.8	137.3
Level of Service	D	D		D	D		B	D	C	E	D	F
Approach Delay (s)		39.2			47.0			42.7			67.5	
Approach LOS		D			D			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			48.2			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			98.0%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
20: Eighth Line & "Street B"

2031 Total PM  
Premier Gateway Phase 1B Employment Area



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	245	315	140	690	225	105
Future Volume (vph)	245	315	140	690	225	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0	0.0	25.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.957	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1783	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1783	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	197.8			564.0	2522.4	
Travel Time (s)	14.2			29.0	129.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	245	315	140	690	225	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	245	315	140	690	330	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)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.6%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 20: Eighth Line & "Street B"

2031 Total PM  
 Premier Gateway Phase 1B Employment Area



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	245	315	140	690	225	105
Future Volume (Veh/h)	245	315	140	690	225	105
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)	245	315	140	690	225	105
<b>Pedestrians</b>						
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	1248	278	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1248	278	330			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	59	89			
cM capacity (veh/h)	170	761	1229			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	
Volume Total	245	315	140	690	330	
Volume Left	245	0	140	0	0	
Volume Right	0	315	0	0	105	
cSH	170	761	1229	1700	1700	
Volume to Capacity	1.44	0.41	0.11	0.41	0.19	
Queue Length 95th (m)	123.1	16.3	3.1	0.0	0.0	
Control Delay (s)	280.5	13.0	8.3	0.0	0.0	
Lane LOS	F	B	A			
Approach Delay (s)	130.0		1.4		0.0	
Approach LOS	F					
<b>Intersection Summary</b>						
Average Delay			43.0			
Intersection Capacity Utilization			56.6%	ICU Level of Service	B	
Analysis Period (min)			15			



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

2031 Total PM  
Premier Gateway Phase 1B Employment Area

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↙↙	↑↑↑	↙↙	↗
Traffic Volume (vph)	590	165	775	1995	275	280
Future Volume (vph)	590	165	775	1995	275	280
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				280
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)	590	165	775	1995	275	280
Shared Lane Traffic (%)						
Lane Group Flow (vph)	590	165	775	1995	275	280
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	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	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)	24.0	24.0	10.0	24.0	24.0	24.0



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	27.0	27.0	34.0	61.0	24.0	24.0
Total Split (%)	31.8%	31.8%	40.0%	71.8%	28.2%	28.2%
Maximum Green (s)	21.0	21.0	29.0	55.0	18.0	18.0
Yellow Time (s)	4.0	4.0	3.0	4.0	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)	6.0	6.0	5.0	6.0	6.0	6.0
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	C-Max	C-Max	None	C-Max	Max	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)	25.7	25.7	24.3	55.0	18.0	18.0
Actuated g/C Ratio	0.30	0.30	0.29	0.65	0.21	0.21
v/c Ratio	0.38	0.28	0.79	0.61	0.38	0.50
Control Delay	25.1	5.8	34.1	9.7	30.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	5.8	34.1	9.7	30.5	7.3
LOS	C	A	C	A	C	A
Approach Delay	20.9			16.5	18.8	
Approach LOS	C			B	B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	17.6
Intersection Capacity Utilization	56.4%
Analysis Period (min)	15
Intersection LOS:	B
ICU Level of Service	B

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



Queues  
21: "Street C" & Steeles Avenue

2031 Total PM  
Premier Gateway Phase 1B Employment Area

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	590	165	775	1995	275	280
v/c Ratio	0.38	0.28	0.79	0.61	0.38	0.50
Control Delay	25.1	5.8	34.1	9.7	30.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	5.8	34.1	9.7	30.5	7.3
Queue Length 50th (m)	28.9	0.0	62.6	64.2	20.9	0.0
Queue Length 95th (m)	42.5	15.0	77.0	77.4	32.3	19.7
Internal Link Dist (m)	417.5			439.9	399.9	
Turn Bay Length (m)		50.0	50.0			
Base Capacity (vph)	1537	593	1171	3290	726	555
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	0.28	0.66	0.61	0.38	0.50
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
 21: "Street C" & Steeles Avenue

2031 Total PM  
 Premier Gateway Phase 1B Employment Area



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖↖	↑↑↑	↖↖	↗
Traffic Volume (vph)	590	165	775	1995	275	280
Future Volume (vph)	590	165	775	1995	275	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0
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)	590	165	775	1995	275	280
RTOR Reduction (vph)	0	115	0	0	0	221
Lane Group Flow (vph)	590	50	775	1995	275	59
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	25.7	25.7	24.3	55.0	18.0	18.0
Effective Green, g (s)	25.7	25.7	24.3	55.0	18.0	18.0
Actuated g/C Ratio	0.30	0.30	0.29	0.65	0.21	0.21
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1537	478	981	3290	726	335
v/s Ratio Prot	0.12		c0.23	c0.39	c0.08	
v/s Ratio Perm		0.03				0.04
v/c Ratio	0.38	0.10	0.79	0.61	0.38	0.18
Uniform Delay, d1	23.4	21.4	28.0	8.7	28.7	27.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.4	4.4	0.8	1.5	1.2
Delay (s)	24.1	21.8	32.4	9.6	30.2	28.6
Level of Service	C	C	C	A	C	C
Approach Delay (s)	23.6			15.9	29.4	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group