

Victoria Square Boulevard Class
Environmental Assessment

Woodbine Avenue (north
connection) to Woodbine Avenue
(south connection)

Environmental Study Report

Appendix

E2

Existing and
2031 Synchro
Reports

HCM Signalized Intersection Capacity Analysis
1: Victoria Square Blvd & Woodbine Ave

Victoria Square
Existing Conditions AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	373	35	176	173	10	1022
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1772	1585	3579	1541	1659	3544
Flt Permitted	0.95	1.00	1.00	1.00	0.63	1.00
Satd. Flow (perm)	1772	1585	3579	1541	1103	3544
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	405	38	191	188	11	1111
RTOR Reduction (vph)	0	28	0	75	0	0
Lane Group Flow (vph)	405	10	191	113	11	1111
Heavy Vehicles (%)	3%	3%	2%	6%	10%	3%
Turn Type		Perm		Perm	Perm	
Protected Phases	4		2			6
Permitted Phases		4		2	6	
Actuated Green, G (s)	27.0	27.0	60.0	60.0	60.0	60.0
Effective Green, g (s)	27.0	27.0	60.0	60.0	60.0	60.0
Actuated g/C Ratio	0.27	0.27	0.60	0.60	0.60	0.60
Clearance Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	478	428	2147	925	662	2126
v/s Ratio Prot	c0.23		0.05			c0.31
v/s Ratio Perm		0.01		0.07	0.01	
v/c Ratio	0.85	0.02	0.09	0.12	0.02	0.52
Uniform Delay, d1	34.5	26.8	8.5	8.6	8.1	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.8	0.1	0.1	0.3	0.0	0.9
Delay (s)	51.3	26.9	8.5	8.9	8.1	12.6
Level of Service	D	C	A	A	A	B
Approach Delay (s)	49.2		8.7			12.5
Approach LOS	D		A			B

Intersection Summary

HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
24: Elgin Mills Rd E & Victoria Square Blvd

Victoria Square
Existing Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	351	103	81	692	35	108	34	29	20	128	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.99	1.00
Satd. Flow (prot)	1659	1737		1738	1869			1744	1432		1879	1197
Flt Permitted	0.14	1.00		0.37	1.00			0.68	1.00		0.95	1.00
Satd. Flow (perm)	252	1737		678	1869			1223	1432		1798	1197
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	373	110	86	736	37	115	36	31	21	136	16
RTOR Reduction (vph)	0	9	0	0	1	0	0	0	19	0	0	10
Lane Group Flow (vph)	21	474	0	86	772	0	0	151	12	0	157	6
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	10%	5%	13%	5%	2%	3%	6%	5%	14%	5%	1%	33%
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			4			2				2
Permitted Phases	4			4			2		2	2		2
Actuated Green, G (s)	61.0	61.0		61.0	61.0			45.0	45.0		45.0	45.0
Effective Green, g (s)	61.0	61.0		61.0	61.0			45.0	45.0		45.0	45.0
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.38	0.38		0.38	0.38
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	128	883		345	950			459	537		674	449
v/s Ratio Prot		0.27			c0.41							
v/s Ratio Perm	0.08			0.13				c0.12	0.01		0.09	0.01
v/c Ratio	0.16	0.54		0.25	0.81			0.33	0.02		0.23	0.01
Uniform Delay, d1	15.8	19.9		16.6	24.7			26.7	23.6		25.7	23.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	2.3		1.7	7.5			1.9	0.1		0.8	0.1
Delay (s)	18.6	22.3		18.3	32.2			28.6	23.7		26.5	23.6
Level of Service	B	C		B	C			C	C		C	C
Approach Delay (s)		22.1			30.8			27.8			26.2	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 3: Murison Dr & Victoria Square Blvd




















Victoria Square
 Existing Conditions AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	22	10	176	380	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	24	11	196	422	23
Pedestrians	3			1	1	
Lane Width (m)	3.7			3.7	3.7	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	0	
Right turn flare (veh)	9					
Median type				None	None	
Median storage veh						
Upstream signal (m)	246					
pX, platoon unblocked						
vC, conflicting volume	644	426	449			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	644	426	449			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	97	96	99			
cM capacity (veh/h)	425	614	1088			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	37	11	196	422	23	
Volume Left	12	11	0	0	0	
Volume Right	24	0	0	0	23	
cSH	920	1088	1700	1700	1700	
Volume to Capacity	0.04	0.01	0.12	0.25	0.01	
Queue Length 95th (m)	0.9	0.2	0.0	0.0	0.0	
Control Delay (s)	12.0	8.3	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	12.0	0.4		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			30.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6: Vine Cliff Blvd & Victoria Square Blvd

Victoria Square
Existing Conditions AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	4	1	25	11	4	4	154	21	24	371	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	7	4	1	26	12	4	4	162	22	25	391	4
Pedestrians								1				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	624	636	394	627	627	173	395			184		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	624	636	394	627	627	173	395			184		
tC, single (s)	7.1	6.5	6.3	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	98	99	100	93	97	100	100			98		
cM capacity (veh/h)	383	386	646	380	388	863	1102			1391		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	13	26	16	4	184	25	395					
Volume Left	7	26	0	4	0	25	0					
Volume Right	1	0	4	0	22	0	4					
cSH	398	380	454	1102	1700	1391	1700					
Volume to Capacity	0.03	0.07	0.03	0.00	0.11	0.02	0.23					
Queue Length 95th (m)	0.7	1.7	0.8	0.1	0.0	0.4	0.0					
Control Delay (s)	14.4	15.2	13.2	8.3	0.0	7.6	0.0					
Lane LOS	B	C	B	A		A						
Approach Delay (s)	14.4	14.4		0.2		0.5						
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			33.4%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

9: Stony Hill Dr & Victoria Square Blvd

Victoria Square
Existing Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	20	62	18	9	28	28	86	54	33	330	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	19	27	84	24	12	38	38	116	73	45	446	7
Pedestrians		1						3				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.2						1.2				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	775	804	453	864	771	153	454			189		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	775	804	453	864	771	153	454			189		
tC, single (s)	7.3	6.6	6.2	7.1	6.6	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.3	3.5	4.1	3.4	2.2			2.3		
p0 queue free %	93	91	86	88	96	96	97			97		
cM capacity (veh/h)	261	290	600	206	302	863	1096			1310		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	19	111	24	50	38	189	45	453
Volume Left	19	0	24	0	38	0	45	0
Volume Right	0	84	0	38	0	73	0	7
cSH	261	476	206	594	1096	1700	1310	1700
Volume to Capacity	0.07	0.23	0.12	0.08	0.03	0.11	0.03	0.27
Queue Length 95th (m)	1.8	6.8	3.0	2.1	0.8	0.0	0.8	0.0
Control Delay (s)	19.9	14.8	24.8	11.6	8.4	0.0	7.8	0.0
Lane LOS	C	B	C	B	A		A	
Approach Delay (s)	15.6		15.9		1.4		0.7	
Approach LOS	C		C					

Intersection Summary

Average Delay	4.2
Intersection Capacity Utilization	39.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

12: Reflection Rd & Victoria Square Blvd

Victoria Square
Existing Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	3	0	30	10	0	5	9	140	0	0	300	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	3	0	34	11	0	6	10	157	0	0	337	2
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	521	516	338	549	517	157	339			157		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	521	516	338	549	517	157	339			157		
tC, single (s)	7.2	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	95	97	100	99	99			100		
cM capacity (veh/h)	440	462	693	425	461	893	1214			1435		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	37	17	167	339								
Volume Left	3	11	10	0								
Volume Right	34	6	0	2								
cSH	658	515	1214	1435								
Volume to Capacity	0.06	0.03	0.01	0.00								
Queue Length 95th (m)	1.4	0.8	0.2	0.0								
Control Delay (s)	10.8	12.2	0.6	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	10.8	12.2	0.6	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			26.4%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 15: Church View Ave & Victoria Square Blvd

Victoria Square
 Existing Conditions AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	11	4	122	0	5	364
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	13	5	140	0	6	418
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	570	140			140	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	570	140			140	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			100	
cM capacity (veh/h)	481	913			1455	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	17	140	424
Volume Left	13	0	6
Volume Right	5	0	0
cSH	550	1700	1455
Volume to Capacity	0.03	0.08	0.00
Queue Length 95th (m)	0.7	0.0	0.1
Control Delay (s)	11.8	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	11.8	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		33.2%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 17: Cecil Nichols Ave & Victoria Square Blvd

Victoria Square
 Existing Conditions AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	18	12	124	9	2	352
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	18	12	127	9	2	359
Pedestrians	1					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	495	132			137	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	495	132			137	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	97	99			100	
cM capacity (veh/h)	536	888			1416	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	31	136	361
Volume Left	18	0	2
Volume Right	12	9	0
cSH	637	1700	1416
Volume to Capacity	0.05	0.08	0.00
Queue Length 95th (m)	1.1	0.0	0.0
Control Delay (s)	10.9	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	10.9	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		30.1%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 19: Campus Close & Victoria Square Blvd

















Victoria Square
 Existing Conditions AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	1	142	2	0	343
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	1	156	2	0	377
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	534	157			158	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	534	157			158	
tC, single (s)	6.8	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.9	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	445	894			1434	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	9	158	377			
Volume Left	8	0	0			
Volume Right	1	2	0			
cSH	475	1700	1434			
Volume to Capacity	0.02	0.09	0.00			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s)	12.7	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	12.7	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			28.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 21: Royal Albert St & Victoria Square Blvd

Victoria Square
 Existing Conditions AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	4	0	2	0	152	0	4	301	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	4	0	2	0	160	0	4	317	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)												170
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	487	485	317	485	485	160	317			160		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	462	460	288	460	460	160	288			160		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	498	487	738	501	487	890	1255			1432		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	6	160	321								
Volume Left	0	4	0	4								
Volume Right	0	2	0	0								
cSH	1700	587	1255	1432								
Volume to Capacity	0.00	0.01	0.00	0.00								
Queue Length 95th (m)	0.0	0.2	0.0	0.1								
Control Delay (s)	0.0	11.2	0.0	0.1								
Lane LOS	A	B		A								
Approach Delay (s)	0.0	11.2	0.0	0.1								
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			29.0%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 27: Edward Roberts Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	26	5	73	133	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	30	6	83	151	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)				256		
pX, platoon unblocked						
vC, conflicting volume	245	151	151			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	245	151	151			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	744	893	1442			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	30	89	151			
Volume Left	0	6	0			
Volume Right	30	0	0			
cSH	893	1442	1700			
Volume to Capacity	0.03	0.00	0.09			
Queue Length 95th (m)	0.8	0.1	0.0			
Control Delay (s)	9.2	0.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			17.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 29: Prince of Wales Dr & Victoria Square Blvd

















Victoria Square
 Existing Conditions AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	16	8	69	112	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	19	9	81	132	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)	3					
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	338					
pX, platoon unblocked						
vC, conflicting volume	232	132	132			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	232	132	132			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	100	98	99			
cM capacity (veh/h)	658	887	1435			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	19	91	132			
Volume Left	0	9	0			
Volume Right	19	0	0			
cSH	222	1435	1700			
Volume to Capacity	0.08	0.01	0.08			
Queue Length 95th (m)	2.1	0.2	0.0			
Control Delay (s)	22.7	0.8	0.0			
Lane LOS	C	A				
Approach Delay (s)	22.7	0.8	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			15.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Bruce Thomson Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	4	0	0	0	0	70	0	0	106	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	0	5	0	0	0	0	80	0	0	120	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	200	200	120	205	200	80	120			80		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	200	200	120	205	200	80	120			80		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	763	699	936	754	699	986	1480			1531		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	5	0	80	120								
Volume Left	0	0	0	0								
Volume Right	5	0	0	0								
cSH	936	1700	1480	1531								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.1	0.0	0.0	0.0								
Control Delay (s)	8.9	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	8.9	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			15.6%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 33: Colonel George McLaren Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	13	0	0	0	4	66	0	0	100	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	13	0	0	0	4	68	0	0	103	1
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	180	180	104	193	180	68	104			68		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	180	180	104	193	180	68	104			68		
tC, single (s)	8.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	4.4	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	607	716	957	758	715	1001	1500			1546		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	0	72	104
Volume Left	0	0	4	0
Volume Right	13	0	0	1
cSH	957	1700	1500	1546
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (m)	0.3	0.0	0.1	0.0
Control Delay (s)	8.8	0.0	0.4	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.8	0.0	0.4	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization	16.7%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 36: Duke of Cornwall Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions AM Peak Hour
























Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	14	3	65	88	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	15	3	69	94	2
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	170	95	96			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	170	95	96			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	823	962	1485			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	72	96
Volume Left	0	3	0
Volume Right	15	0	2
cSH	962	1485	1700
Volume to Capacity	0.02	0.00	0.06
Queue Length 95th (m)	0.4	0.0	0.0
Control Delay (s)	8.8	0.3	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	0.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization	15.9%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
38: Victoria Square Blvd & Woodbine Ave

Victoria Square
Existing Conditions AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	35	0	35	0	65	14	79	963	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	0	0	36	0	36	0	66	14	81	983	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	1213	1224	491	719	1210	33	983			81		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1213	1224	491	719	1210	33	983			81		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.0	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.3		
p0 queue free %	100	100	100	88	100	97	100			95		
cM capacity (veh/h)	130	171	528	289	174	1026	711			1486		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	0	36	36	0	33	33	14	81	491	491	0	
Volume Left	0	36	0	0	0	0	0	81	0	0	0	
Volume Right	0	0	36	0	0	0	14	0	0	0	0	
cSH	1700	289	1026	1700	1700	1700	1700	1486	1700	1700	1700	
Volume to Capacity	0.00	0.12	0.03	0.00	0.02	0.02	0.01	0.05	0.29	0.29	0.00	
Queue Length 95th (m)	0.0	3.2	0.8	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	
Control Delay (s)	0.0	19.2	8.6	0.0	0.0	0.0	0.0	7.6	0.0	0.0	0.0	
Lane LOS	A	C	A					A				
Approach Delay (s)	0.0	13.9		0.0				0.6				
Approach LOS	A	B										
Intersection Summary												
Average Delay			1.3									
Intersection Capacity Utilization			36.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
42: Vetmar Dr & Victoria Square Blvd

Victoria Square
Existing Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	8	1	10	10	0	3	6	59	0	17	76	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	1	11	11	0	3	7	64	0	18	83	2
Pedestrians		2						1				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.2						1.2				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	203	200	87	210	201	64	87			64		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203	200	87	210	201	64	87			64		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	99	100	100	100			99		
cM capacity (veh/h)	745	687	975	731	686	1006	1519			1551		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	14	71	103								
Volume Left	9	11	7	18								
Volume Right	11	3	0	2								
cSH	846	780	1519	1551								
Volume to Capacity	0.02	0.02	0.00	0.01								
Queue Length 95th (m)	0.6	0.4	0.1	0.3								
Control Delay (s)	9.4	9.7	0.7	1.4								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.4	9.7	0.7	1.4								
Approach LOS	A	A										
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			19.2%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
1: Victoria Square Blvd & Woodbine Ave

Victoria Square
Existing Conditions PM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	111	19	815	398	10	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1789	1526	3650	1617	1825	3614
Flt Permitted	0.95	1.00	1.00	1.00	0.28	1.00
Satd. Flow (perm)	1789	1526	3650	1617	545	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	21	886	433	11	214
RTOR Reduction (vph)	0	15	0	173	0	0
Lane Group Flow (vph)	121	6	886	260	11	214
Confl. Peds. (#/hr)		5				
Heavy Vehicles (%)	2%	5%	0%	1%	0%	1%
Turn Type		Perm		Perm	Perm	
Protected Phases	4		2			6
Permitted Phases		4		2	6	
Actuated Green, G (s)	27.0	27.0	60.0	60.0	60.0	60.0
Effective Green, g (s)	27.0	27.0	60.0	60.0	60.0	60.0
Actuated g/C Ratio	0.27	0.27	0.60	0.60	0.60	0.60
Clearance Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	483	412	2190	970	327	2168
v/s Ratio Prot	c0.07		c0.24			0.06
v/s Ratio Perm		0.00		0.16	0.02	
v/c Ratio	0.25	0.01	0.40	0.27	0.03	0.10
Uniform Delay, d1	28.6	26.7	10.6	9.5	8.2	8.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.6	0.7	0.2	0.1
Delay (s)	29.8	26.8	11.1	10.2	8.4	8.6
Level of Service	C	C	B	B	A	A
Approach Delay (s)	29.4		10.8			8.6
Approach LOS	C		B			A

Intersection Summary

HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

24: Elgin Mills Rd E & Victoria Square Blvd

Victoria Square
Existing Conditions PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	520	75	13	329	36	75	127	38	25	25	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (prot)	1772	1873		1825	1893			1833	1633		1820	1593
Flt Permitted	0.35	1.00		0.11	1.00			0.87	1.00		0.83	1.00
Satd. Flow (perm)	646	1873		220	1893			1624	1633		1544	1593
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	39	553	80	14	350	38	80	135	40	27	27	23
RTOR Reduction (vph)	0	5	0	0	4	0	0	0	19	0	0	11
Lane Group Flow (vph)	39	628	0	14	384	0	0	215	21	0	54	12
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	3%	0%	5%	0%	0%	0%	4%	2%	0%	3%	3%	0%
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2		2	2		2
Actuated Green, G (s)	35.0	35.0		35.0	35.0			56.0	56.0		56.0	56.0
Effective Green, g (s)	35.0	35.0		35.0	35.0			56.0	56.0		56.0	56.0
Actuated g/C Ratio	0.33	0.33		0.33	0.33			0.53	0.53		0.53	0.53
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	215	624		73	631			866	871		823	850
v/s Ratio Prot		c0.34			0.20							
v/s Ratio Perm	0.06			0.06				c0.13	0.01		0.03	0.01
v/c Ratio	0.18	1.01		0.19	0.61			0.25	0.02		0.07	0.01
Uniform Delay, d1	24.8	35.0		24.9	29.3			13.2	11.6		11.8	11.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.8	37.7		5.8	4.3			0.7	0.1		0.2	0.0
Delay (s)	26.7	72.7		30.7	33.6			13.9	11.6		12.0	11.6
Level of Service	C	E		C	C			B	B		B	B
Approach Delay (s)		70.1			33.5			13.5			11.9	
Approach LOS		E			C			B			B	

Intersection Summary

HCM Average Control Delay	46.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 3: Murison Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	15	22	389	116	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	11	15	22	397	118	6
Pedestrians				2		
Lane Width (m)				3.7		
Walking Speed (m/s)				1.2		
Percent Blockage				0		
Right turn flare (veh)	9					
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				246		
pX, platoon unblocked						
vC, conflicting volume	560	120	124			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	560	120	124			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	98	98	98			
cM capacity (veh/h)	475	914	1438			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	27	22	397	118	6	
Volume Left	11	22	0	0	0	
Volume Right	15	0	0	0	6	
cSH	1123	1438	1700	1700	1700	
Volume to Capacity	0.02	0.02	0.23	0.07	0.00	
Queue Length 95th (m)	0.6	0.4	0.0	0.0	0.0	
Control Delay (s)	10.6	7.5	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	10.6	0.4		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			31.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis





















6: Vine Cliff Blvd & Victoria Square Blvd

Victoria Square
Existing Conditions PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	3	1	7	15	20	5	353	42	17	115	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	6	3	1	7	15	21	5	364	43	18	119	5
Pedestrians		1						1				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.2						1.2				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	560	575	123	553	556	386	125			407		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	560	575	123	553	556	386	125			407		
tC, single (s)	7.1	6.5	6.3	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	98	99	100	98	96	97	100			98		
cM capacity (veh/h)	410	419	916	428	427	656	1390			1152		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	10	7	36	5	407	18	124					
Volume Left	6	7	0	5	0	18	0					
Volume Right	1	0	21	0	43	0	5					
cSH	437	428	533	1390	1700	1152	1700					
Volume to Capacity	0.02	0.02	0.07	0.00	0.24	0.02	0.07					
Queue Length 95th (m)	0.6	0.4	1.6	0.1	0.0	0.4	0.0					
Control Delay (s)	13.4	13.6	12.2	7.6	0.0	8.2	0.0					
Lane LOS	B	B	B	A		A						
Approach Delay (s)	13.4	12.5		0.1		1.0						
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			33.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
9: Stony Hill Dr & Victoria Square Blvd

Victoria Square
Existing Conditions PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	7	21	3	4	20	44	284	24	28	113	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	5	8	25	4	5	24	52	338	29	33	135	1
Pedestrians		3						3				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.2						1.2				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	674	676	141	690	663	352	139			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	674	676	141	690	663	352	139			367		
tC, single (s)	7.3	6.6	6.2	7.1	6.6	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.3	3.5	4.1	3.4	2.2			2.3		
p0 queue free %	98	98	97	99	99	96	96			97		
cM capacity (veh/h)	315	345	897	322	349	665	1429			1124		
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	5	33	4	29	52	367	33	136				
Volume Left	5	0	4	0	52	0	33	0				
Volume Right	0	25	0	24	0	29	0	1				
cSH	315	641	322	578	1429	1700	1124	1700				
Volume to Capacity	0.02	0.05	0.01	0.05	0.04	0.22	0.03	0.08				
Queue Length 95th (m)	0.3	1.2	0.3	1.2	0.9	0.0	0.7	0.0				
Control Delay (s)	16.6	10.9	16.3	11.6	7.6	0.0	8.3	0.0				
Lane LOS	C	B	C	B	A		A					
Approach Delay (s)	11.6		12.1		1.0		1.6					
Approach LOS	B		B									
Intersection Summary												
Average Delay			2.3									
Intersection Capacity Utilization			34.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

12: Reflection Rd & Victoria Square Blvd

Victoria Square
Existing Conditions PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	5	0	7	10	0	0	19	231	0	0	93	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	5	0	8	11	0	0	20	248	0	0	100	3
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	391	391	102	398	392	248	103			248		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	391	391	102	398	392	248	103			248		
tC, single (s)	7.2	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	98	100	100	99			100		
cM capacity (veh/h)	540	540	940	555	539	795	1482			1329		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	13	11	269	103								
Volume Left	5	11	20	0								
Volume Right	8	0	0	3								
cSH	718	555	1482	1329								
Volume to Capacity	0.02	0.02	0.01	0.00								
Queue Length 95th (m)	0.4	0.5	0.3	0.0								
Control Delay (s)	10.1	11.6	0.7	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	10.1	11.6	0.7	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.1									
Intersection Capacity Utilization			29.9%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 15: Church View Ave & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	0	276	6	3	138
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	0	314	7	3	157
Pedestrians	1		1			6
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	0		0			1
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	483	324			321	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	483	324			321	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	540	717			1249	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	2	320	160
Volume Left	2	0	3
Volume Right	0	7	0
cSH	540	1700	1249
Volume to Capacity	0.00	0.19	0.00
Queue Length 95th (m)	0.1	0.0	0.1
Control Delay (s)	11.7	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	11.7	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		26.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 17: Cecil Nichols Ave & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	8	2	239	12	3	125
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	2	260	13	3	136
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	409	266			273	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	409	266			273	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	99	100			100	
cM capacity (veh/h)	601	747			1262	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	11	273	139			
Volume Left	9	0	3			
Volume Right	2	13	0			
cSH	626	1700	1262			
Volume to Capacity	0.02	0.16	0.00			
Queue Length 95th (m)	0.4	0.0	0.1			
Control Delay (s)	10.9	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	10.9	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			23.3%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 19: Campus Close & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour



















Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↘			↘
Volume (veh/h)	10	0	254	2	1	113
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	11	0	285	2	1	127
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	416	287			288	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	416	287			288	
tC, single (s)	6.8	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.9	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	525	757			1286	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	11	288	128
Volume Left	11	0	1
Volume Right	0	2	0
cSH	525	1700	1286
Volume to Capacity	0.02	0.17	0.00
Queue Length 95th (m)	0.5	0.0	0.0
Control Delay (s)	12.0	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	12.0	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		23.5%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 21: Royal Albert St & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	240	1	0	95	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	0	0	0	0	282	1	0	112	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)											170	
pX, platoon unblocked												
vC, conflicting volume	395	395	112	395	395	283	112			284		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	395	395	112	395	395	283	112			284		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	569	545	947	569	545	761	1491			1290		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	284	112								
Volume Left	0	0	0	0								
Volume Right	0	0	1	0								
cSH	1700	1700	1491	1290								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			16.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 27: Edward Roberts Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	6	10	174	73	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	2	6	10	181	76	0
Pedestrians	5					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				256		
pX, platoon unblocked						
vC, conflicting volume	283	81	81			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	283	81	81			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	703	972	1523			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	8	192	76			
Volume Left	2	10	0			
Volume Right	6	0	0			
cSH	887	1523	1700			
Volume to Capacity	0.01	0.01	0.04			
Queue Length 95th (m)	0.2	0.2	0.0			
Control Delay (s)	9.1	0.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization		26.4%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 29: Prince of Wales Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	9	11	151	59	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	10	13	174	68	0
Pedestrians				2	1	
Lane Width (m)				3.7	3.7	
Walking Speed (m/s)				1.2	1.2	
Percent Blockage				0	0	
Right turn flare (veh)	3					
Median type				None	None	
Median storage veh						
Upstream signal (m)	338					
pX, platoon unblocked						
vC, conflicting volume	268	70	68			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	268	70	68			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	624	959	1515			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	10	186	68			
Volume Left	0	13	0			
Volume Right	10	0	0			
cSH	240	1515	1700			
Volume to Capacity	0.04	0.01	0.04			
Queue Length 95th (m)	1.0	0.2	0.0			
Control Delay (s)	20.7	0.6	0.0			
Lane LOS	C	A				
Approach Delay (s)	20.7	0.6	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			25.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Bruce Thomson Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	1	0	0	0	2	136	0	0	57	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	1	0	0	0	2	153	0	0	64	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	221	221	64	222	221	153	64			153		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	221	221	64	222	221	153	64			153		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	738	680	1006	736	680	899	1551			1440		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	0	155	64
Volume Left	0	0	2	0
Volume Right	1	0	0	0
cSH	1006	1700	1551	1440
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	8.6	0.0	0.1	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.6	0.0	0.1	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization	18.8%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 33: Colonel George McLaren Dr & Victoria Square Blvd

Victoria Square
 Existing Conditions PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	5	0	0	0	3	126	0	0	49	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	6	0	0	0	3	140	0	0	54	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	201	201	54	207	201	140	54			140		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	201	201	54	207	201	140	54			140		
tC, single (s)	8.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	4.4	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	586	697	1018	750	697	913	1564			1456		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	6	0	143	54								
Volume Left	0	0	3	0								
Volume Right	6	0	0	0								
cSH	1018	1700	1564	1456								
Volume to Capacity	0.01	0.00	0.00	0.00								
Queue Length 95th (m)	0.1	0.0	0.0	0.0								
Control Delay (s)	8.6	0.0	0.2	0.0								
Lane LOS	A	A	A									
Approach Delay (s)	8.6	0.0	0.2	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			19.0%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 36: Duke of Cornwall Dr & Victoria Square Blvd






















Victoria Square
 Existing Conditions PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	10	8	114	37	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	0	12	10	141	46	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	206	46	46			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	206	46	46			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	782	1024	1549			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	12	151	46			
Volume Left	0	10	0			
Volume Right	12	0	0			
cSH	1024	1549	1700			
Volume to Capacity	0.01	0.01	0.03			
Queue Length 95th (m)	0.3	0.1	0.0			
Control Delay (s)	8.6	0.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.6	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization		22.6%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 38: Victoria Square Blvd & Woodbine Ave

Victoria Square
 Existing Conditions PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	11	0	105	0	387	21	17	66	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	0	12	0	113	0	416	23	18	71	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	428	546	35	488	524	208	71			439		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	428	546	35	488	524	208	71			439		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.0	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.3		
p0 queue free %	100	100	100	97	100	86	100			98		
cM capacity (veh/h)	436	440	1036	439	453	792	1542			1090		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	0	12	113	0	208	208	23	18	35	35	0	
Volume Left	0	12	0	0	0	0	0	18	0	0	0	
Volume Right	0	0	113	0	0	0	23	0	0	0	0	
cSH	1700	439	792	1700	1700	1700	1700	1090	1700	1700	1700	
Volume to Capacity	0.00	0.03	0.14	0.00	0.12	0.12	0.01	0.02	0.02	0.02	0.00	
Queue Length 95th (m)	0.0	0.6	3.8	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	
Control Delay (s)	0.0	13.4	10.3	0.0	0.0	0.0	0.0	8.4	0.0	0.0	0.0	
Lane LOS	A	B	B					A				
Approach Delay (s)	0.0	10.6		0.0				1.7				
Approach LOS	A	B										
Intersection Summary												
Average Delay				2.3								
Intersection Capacity Utilization			27.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
42: Vetmar Dr & Victoria Square Blvd

Victoria Square
Existing Conditions PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	3	0	3	5	0	11	7	101	1	6	28	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	5	0	12	8	110	1	7	30	5
Pedestrians								1				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	184	172	34	176	174	110	36			111		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	184	172	34	176	174	110	36			111		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	99	100			100		
cM capacity (veh/h)	767	718	1044	782	716	949	1588			1492		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	7	17	118	42								
Volume Left	3	5	8	7								
Volume Right	3	12	1	5								
cSH	884	889	1588	1492								
Volume to Capacity	0.01	0.02	0.00	0.00								
Queue Length 95th (m)	0.2	0.5	0.1	0.1								
Control Delay (s)	9.1	9.1	0.5	1.2								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.1	9.1	0.5	1.2								
Approach LOS	A	A										
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			16.8%	ICU Level of Service		A						
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
 1: Victoria Square Blvd & Woodbine Ave

Victoria Square
 2031 Conditions AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	602	56	346	286	17	1608
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1772	1585	3579	1541	1659	3544
Flt Permitted	0.95	1.00	1.00	1.00	0.53	1.00
Satd. Flow (perm)	1772	1585	3579	1541	919	3544
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	654	61	376	311	18	1748
RTOR Reduction (vph)	0	31	0	153	0	0
Lane Group Flow (vph)	654	30	376	158	18	1748
Heavy Vehicles (%)	3%	3%	2%	6%	10%	3%
Turn Type		Perm		Perm	Perm	
Protected Phases	4		2			6
Permitted Phases		4		2	6	
Actuated Green, G (s)	46.0	46.0	61.0	61.0	61.0	61.0
Effective Green, g (s)	46.0	46.0	61.0	61.0	61.0	61.0
Actuated g/C Ratio	0.38	0.38	0.51	0.51	0.51	0.51
Clearance Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	679	608	1819	783	467	1802
v/s Ratio Prot	c0.37		0.11			c0.49
v/s Ratio Perm		0.02		0.10	0.02	
v/c Ratio	0.96	0.05	0.21	0.20	0.04	0.97
Uniform Delay, d1	36.2	23.3	16.2	16.2	14.8	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	0.2	0.3	0.6	0.2	15.2
Delay (s)	62.8	23.4	16.5	16.7	14.9	43.8
Level of Service	E	C	B	B	B	D
Approach Delay (s)	59.4		16.6			43.5
Approach LOS	E		B			D

Intersection Summary

HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
24: Elgin Mills Rd E & Victoria Square Blvd

Victoria Square
2031 Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	372	110	113	958	48	201	27	86	43	111	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.99	1.00
Satd. Flow (prot)	1659	1737		1738	1869			1732	1432		1855	1197
Flt Permitted	0.05	1.00		0.40	1.00			0.61	1.00		0.77	1.00
Satd. Flow (perm)	96	1737		729	1869			1099	1432		1449	1197
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	22	396	117	120	1019	51	214	29	91	46	118	44
RTOR Reduction (vph)	0	9	0	0	2	0	0	0	66	0	0	32
Lane Group Flow (vph)	22	504	0	120	1068	0	0	243	25	0	164	12
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	10%	5%	13%	5%	2%	3%	6%	5%	14%	5%	1%	33%
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2		2	2		2
Actuated Green, G (s)	73.0	73.0		73.0	73.0			33.0	33.0		33.0	33.0
Effective Green, g (s)	73.0	73.0		73.0	73.0			33.0	33.0		33.0	33.0
Actuated g/C Ratio	0.61	0.61		0.61	0.61			0.28	0.28		0.28	0.28
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	58	1057		443	1137			302	394		398	329
v/s Ratio Prot		0.29			c0.57							
v/s Ratio Perm	0.23			0.16				c0.22	0.02		0.11	0.01
v/c Ratio	0.38	0.48		0.27	0.94			0.80	0.06		0.41	0.04
Uniform Delay, d1	12.0	13.0		11.0	21.5			40.5	32.1		35.6	31.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	17.8	1.5		1.5	15.6			20.0	0.3		3.1	0.2
Delay (s)	29.8	14.5		12.5	37.1			60.5	32.4		38.7	32.1
Level of Service	C	B		B	D			E	C		D	C
Approach Delay (s)		15.1			34.7			52.8			37.3	
Approach LOS		B			C			D			D	

Intersection Summary

HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 3: Murison Dr & Victoria Square Blvd




















Victoria Square
 2031 Conditions AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	22	44	40	263	614	42
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	49	44	292	682	47
Pedestrians	3			1	1	
Lane Width (m)	3.7			3.7	3.7	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	0	
Right turn flare (veh)	9					
Median type				None	None	
Median storage veh						
Upstream signal (m)	246					
pX, platoon unblocked						
vC, conflicting volume	1067	686	732			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1067	686	732			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	89	89	95			
cM capacity (veh/h)	228	436	852			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	73	44	292	682	47	
Volume Left	24	44	0	0	0	
Volume Right	49	0	0	0	47	
cSH	654	852	1700	1700	1700	
Volume to Capacity	0.11	0.05	0.17	0.40	0.03	
Queue Length 95th (m)	2.9	1.3	0.0	0.0	0.0	
Control Delay (s)	17.1	9.5	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	17.1	1.2		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			43.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6: Vine Cliff Blvd & Victoria Square Blvd

Victoria Square
2031 Conditions AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	4	1	219	11	77	4	170	111	221	436	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	7	4	1	231	12	81	4	179	117	233	459	21
Pedestrians								1				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1209	1239	470	1174	1191	237	480			296		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1209	1239	470	1174	1191	237	480			296		
tC, single (s)	7.1	6.5	6.3	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	94	97	100	0	92	90	100			82		
cM capacity (veh/h)	117	142	584	138	150	794	1023			1266		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	13	231	93	4	296	233	480					
Volume Left	7	231	0	4	0	233	0					
Volume Right	1	0	81	0	117	0	21					
cSH	134	138	517	1023	1700	1266	1700					
Volume to Capacity	0.09	1.67	0.18	0.00	0.17	0.18	0.28					
Queue Length 95th (m)	2.3	127.0	4.9	0.1	0.0	5.1	0.0					
Control Delay (s)	34.7	386.1	13.5	8.5	0.0	8.5	0.0					
Lane LOS	D	F	B	A		A						
Approach Delay (s)	34.7	279.3		0.1		2.8						
Approach LOS	D	F										
Intersection Summary												
Average Delay			68.8									
Intersection Capacity Utilization			56.6%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 9: Stony Hill Dr & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	158	62	321	192	128	100	90	64	99	294	58
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	19	214	84	434	259	173	135	122	86	134	397	78
Pedestrians		1						3				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.2						1.2				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1400	1183	440	1294	1179	165	477			208		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1400	1183	440	1294	1179	165	477			208		
tC, single (s)	7.3	6.6	6.2	7.1	6.6	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.3	3.5	4.1	3.4	2.2			2.3		
p0 queue free %	0	0	86	0	0	80	87			90		
cM capacity (veh/h)	0	146	610	0	145	849	1074			1289		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	19	297	434	432	135	208	134	476
Volume Left	19	0	434	0	135	0	134	0
Volume Right	0	84	0	173	0	86	0	78
cSH	0	185	0	217	1074	1700	1289	1700
Volume to Capacity	Err	1.60	Err	1.99	0.13	0.12	0.10	0.28
Queue Length 95th (m)	Err	149.4	Err	243.0	3.3	0.0	2.6	0.0
Control Delay (s)	Err	340.3	Err	498.6	8.8	0.0	8.1	0.0
Lane LOS	F	F	F	F	A		A	
Approach Delay (s)	Err		Err		3.5		1.8	
Approach LOS	F		F					

Intersection Summary		
Average Delay		Err
Intersection Capacity Utilization	68.0%	ICU Level of Service
Analysis Period (min)	15	C

HCM Unsignalized Intersection Capacity Analysis

12: Reflection Rd & Victoria Square Blvd

Victoria Square
2031 Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	3	0	30	90	60	150	9	159	70	30	302	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	3	0	34	101	67	169	10	179	79	34	339	2
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	848	685	340	680	647	218	342			257		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	848	685	340	680	647	218	342			257		
tC, single (s)	7.2	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	95	70	82	80	99			97		
cM capacity (veh/h)	179	360	691	341	379	827	1212			1319		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	37	337	267	375								
Volume Left	3	101	10	34								
Volume Right	34	169	79	2								
cSH	548	497	1212	1319								
Volume to Capacity	0.07	0.68	0.01	0.03								
Queue Length 95th (m)	1.6	38.4	0.2	0.6								
Control Delay (s)	12.0	26.2	0.4	0.9								
Lane LOS	B	D	A	A								
Approach Delay (s)	12.0	26.2	0.4	0.9								
Approach LOS	B	D										
Intersection Summary												
Average Delay			9.6									
Intersection Capacity Utilization			58.9%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 15: Church View Ave & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Volume (veh/h)	11	4	232	0	5	440
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	13	5	267	0	6	506
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	784	267			267	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	784	267			267	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	360	777			1309	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	17	267	511
Volume Left	13	0	6
Volume Right	5	0	0
cSH	420	1700	1309
Volume to Capacity	0.04	0.16	0.00
Queue Length 95th (m)	1.0	0.0	0.1
Control Delay (s)	13.9	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	13.9	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		37.1%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 17: Cecil Nichols Ave & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	18	12	227	9	2	427
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	18	12	232	9	2	436
Pedestrians	1					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	677	237			242	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	677	237			242	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	96	98			100	
cM capacity (veh/h)	420	775			1295	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	31	241	438
Volume Left	18	0	2
Volume Right	12	9	0
cSH	514	1700	1295
Volume to Capacity	0.06	0.14	0.00
Queue Length 95th (m)	1.4	0.0	0.0
Control Delay (s)	12.4	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	12.4	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		34.1%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 19: Campus Close & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	1	237	2	0	422
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	1	260	2	0	464
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	725	262			263	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	725	262			263	
tC, single (s)	6.8	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.9	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	340	782			1313	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	263	464
Volume Left	8	0	0
Volume Right	1	2	0
cSH	366	1700	1313
Volume to Capacity	0.02	0.15	0.00
Queue Length 95th (m)	0.6	0.0	0.0
Control Delay (s)	15.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	15.1	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		32.2%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis
 21: Royal Albert St & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	0	4	0	2	0	312	0	4	330	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	4	0	2	0	328	0	4	347	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)											170	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	686	684	347	684	684	328	347			328		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	672	670	328	670	670	328	328			328		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	364	373	706	366	373	718	1222			1242		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	6	328	352
Volume Left	0	4	0	4
Volume Right	0	2	0	0
cSH	1700	437	1222	1242
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.3	0.0	0.1
Control Delay (s)	0.0	13.3	0.0	0.1
Lane LOS	A	B		A
Approach Delay (s)	0.0	13.3	0.0	0.1
Approach LOS	A	B		

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 27: Edward Roberts Dr & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	10	26	5	91	169	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	11	30	6	103	192	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)				256		
pX, platoon unblocked						
vC, conflicting volume	307	192	192			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	307	192	192			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	97	100			
cM capacity (veh/h)	687	847	1394			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	41	109	192			
Volume Left	11	6	0			
Volume Right	30	0	0			
cSH	795	1394	1700			
Volume to Capacity	0.05	0.00	0.11			
Queue Length 95th (m)	1.2	0.1	0.0			
Control Delay (s)	9.8	0.4	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.8	0.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization		18.9%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 29: Prince of Wales Dr & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	16	8	93	153	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	6	19	9	109	180	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)	3					
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	338					
pX, platoon unblocked						
vC, conflicting volume	308	180	180			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	308	180	180			
tC, single (s)	6.9	6.3	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.4	2.2			
p0 queue free %	99	98	99			
cM capacity (veh/h)	591	833	1378			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	25	119	180			
Volume Left	6	9	0			
Volume Right	19	0	0			
cSH	1093	1378	1700			
Volume to Capacity	0.02	0.01	0.11			
Queue Length 95th (m)	0.5	0.2	0.0			
Control Delay (s)	9.8	0.7	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.8	0.7	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			21.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Bruce Thomson Dr & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	5	0	4	0	0	0	0	98	0	0	149	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	0	5	0	0	0	0	111	0	0	169	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	281	281	169	285	281	111	169			111		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	281	281	169	285	281	111	169			111		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	100	100	100	100			100		
cM capacity (veh/h)	676	631	880	668	631	947	1420			1491		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	10	0	111	169								
Volume Left	6	0	0	0								
Volume Right	5	0	0	0								
cSH	753	1700	1420	1491								
Volume to Capacity	0.01	0.00	0.00	0.00								
Queue Length 95th (m)	0.3	0.0	0.0	0.0								
Control Delay (s)	9.8	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	9.8	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			17.8%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 33: Colonel George McLaren Dr & Victoria Square Blvd

Victoria Square
 2031 Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	5	0	13	0	0	0	4	99	0	0	136	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	0	13	0	0	0	4	102	0	0	140	1
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	251	251	141	264	252	102	141			102		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	251	251	141	264	252	102	141			102		
tC, single (s)	8.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	4.4	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	100	100	100	100			100		
cM capacity (veh/h)	539	654	913	681	653	959	1454			1503		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	19	0	106	141
Volume Left	5	0	4	0
Volume Right	13	0	0	1
cSH	765	1700	1454	1503
Volume to Capacity	0.02	0.00	0.00	0.00
Queue Length 95th (m)	0.6	0.0	0.1	0.0
Control Delay (s)	9.8	0.0	0.3	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.8	0.0	0.3	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization	18.5%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 36: Duke of Cornwall Dr & Victoria Square Blvd






















Victoria Square
 2031 Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	5	0	14	20	0	230	3	81	20	60	103	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Hourly flow rate (vph)	5	0	15	22	0	250	3	86	22	65	110	2
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	594	355	111	359	346	97	112			108		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	594	355	111	359	346	97	112			108		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	98	96	100	74	100			96		
cM capacity (veh/h)	299	544	943	566	551	959	1466			1483		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	20	272	111	177								
Volume Left	5	22	3	65								
Volume Right	15	250	22	2								
cSH	602	909	1466	1483								
Volume to Capacity	0.03	0.30	0.00	0.04								
Queue Length 95th (m)	0.8	9.6	0.0	1.0								
Control Delay (s)	11.2	10.6	0.2	3.0								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.2	10.6	0.2	3.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			6.3									
Intersection Capacity Utilization			38.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
38: Victoria Square Blvd & Woodbine Ave

Victoria Square
2031 Conditions AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	273	0	48	0	216	47	117	1132	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	0	0	279	0	49	0	220	48	119	1155	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWTL			None	
Median storage (veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1553	1662	578	1037	1614	110	1155			268		
vC1, stage 1 conf vol	1394	1394		220	220							
vC2, stage 2 conf vol	159	268		816	1394							
vCu, unblocked vol	1553	1662	578	1037	1614	110	1155			268		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.0	4.1			4.2		
tC, 2 stage (s)	6.5	5.5		6.7	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.3		
p0 queue free %	100	100	100	0	100	95	100			91		
cM capacity (veh/h)	133	183	464	278	184	916	612			1264		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	0	279	49	0	110	110	48	119	578	578	0	
Volume Left	0	279	0	0	0	0	0	119	0	0	0	
Volume Right	0	0	49	0	0	0	48	0	0	0	0	
cSH	1700	278	916	1700	1700	1700	1700	1264	1700	1700	1700	
Volume to Capacity	0.00	1.00	0.05	0.00	0.06	0.06	0.03	0.09	0.34	0.34	0.00	
Queue Length 95th (m)	0.0	77.8	1.3	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	
Control Delay (s)	0.0	94.5	9.2	0.0	0.0	0.0	0.0	8.1	0.0	0.0	0.0	
Lane LOS	A	F	A					A				
Approach Delay (s)	0.0	81.8		0.0				0.8				
Approach LOS	A	F										
Intersection Summary												
Average Delay			14.8									
Intersection Capacity Utilization			59.7%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
42: Vetmar Dr & Victoria Square Blvd

Victoria Square
2031 Conditions AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	8	1	10	10	0	3	6	310	0	17	145	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	1	11	11	0	3	7	337	0	18	158	2
Pedestrians		2						1				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.2						1.2				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	551	548	162	558	549	337	162			337		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	551	548	162	558	549	337	162			337		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	97	100	100	100			99		
cM capacity (veh/h)	438	437	886	430	437	710	1427			1234		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	14	343	178								
Volume Left	9	11	7	18								
Volume Right	11	3	0	2								
cSH	597	473	1427	1234								
Volume to Capacity	0.03	0.03	0.00	0.01								
Queue Length 95th (m)	0.8	0.7	0.1	0.3								
Control Delay (s)	11.2	12.9	0.2	0.9								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.2	12.9	0.2	0.9								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			27.8%	ICU Level of Service						A		
Analysis Period (min)			15									