



Appendix K

Synchro 2035

Intersection LOS

Reports

SR 21 Corridor Study
Phase I Final Report

No Build
2035
AM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: SR 30 & SR 21

SR 21 Corridor No Build
2035 AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	40	656	118	30	67	82	1030	108	106	5270	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	4.5	7.0	4.0	7.0	6.4	4.0	7.0	6.4	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1784	1553	1719	1810	1538	3335	3438	1538	1703	3406	1524
Flt Permitted		0.83	1.00	0.53	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1520	1553	953	1810	1538	3335	3438	1538	1703	3406	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	43	713	128	33	73	89	1120	117	115	5728	29
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	82	713	128	33	73	89	1120	117	115	5728	29
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)		13.4	150.0	21.9	21.9	150.0	5.0	92.3	150.0	15.4	102.7	150.0
Effective Green, g (s)		13.4	150.0	21.9	21.9	150.0	5.0	92.3	150.0	15.4	102.7	150.0
Actuated g/C Ratio		0.09	1.00	0.15	0.15	1.00	0.03	0.62	1.00	0.10	0.68	1.00
Clearance Time (s)		7.0		4.5	7.0		7.0	6.4		7.0	6.4	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		136	1553	160	264	1538	111	2116	1538	175	2332	1524
v/s Ratio Prot				c0.02	0.02		0.03	0.33		0.07	c1.68	
v/s Ratio Perm		0.05	c0.46	c0.10		0.05			0.08			0.02
v/c Ratio		0.60	0.46	0.80	0.12	0.05	0.80	0.53	0.08	0.66	2.46	0.02
Uniform Delay, d1		65.7	0.0	62.4	55.7	0.0	72.0	16.5	0.0	64.8	23.6	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.75	1.00	1.00	1.00	1.00
Incremental Delay, d2		7.3	1.0	24.1	0.2	0.1	30.9	0.9	0.1	8.6	656.6	0.0
Delay (s)		73.1	1.0	86.6	55.9	0.1	100.9	13.2	0.1	73.3	680.3	0.0
Level of Service		E	A	F	E	A	F	B	A	E	F	A
Approach Delay (s)		8.4			55.3			18.0			665.0	
Approach LOS		A			E			B			F	

Intersection Summary

HCM Average Control Delay	479.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.97		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.9
Intersection Capacity Utilization	170.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2: SR 21 & I-95 Southbound On-Ramp

SR 21 Corridor No Build
2035 AM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 			 						 	
Volume (vph)	29	1133	0	0	2871	3151	0	0	0	110	0	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0				4.5	4.5	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00				0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	1736	3471			3438	1538				1383	1383	1302
Flt Permitted	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	1736	3471			3438	1538				1383	1383	1302
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	1232	0	0	3121	3425	0	0	0	120	0	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	32	1232	0	0	3121	3425	0	0	0	60	60	54
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	6%	6%	6%	24%	24%	24%
Turn Type	Prot					Free				Prot		Free
Protected Phases	3	8			4					1	6	
Permitted Phases						Free						Free
Actuated Green, G (s)	4.8	120.8			110.0	150.0				18.7	18.7	150.0
Effective Green, g (s)	4.8	120.8			110.0	150.0				18.7	18.7	150.0
Actuated g/C Ratio	0.03	0.81			0.73	1.00				0.12	0.12	1.00
Clearance Time (s)	6.0	6.0			6.0					4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)	56	2795			2521	1538				172	172	1302
v/s Ratio Prot	0.02	0.35			0.91					0.04	0.04	
v/s Ratio Perm						c2.23						0.04
v/c Ratio	0.57	0.44			1.24	2.23				0.35	0.35	0.04
Uniform Delay, d1	71.6	4.4			20.0	75.0				60.1	60.1	0.0
Progression Factor	0.72	1.46			0.21	1.00				1.00	1.00	1.00
Incremental Delay, d2	7.2	0.1			107.4	552.3				1.2	1.2	0.1
Delay (s)	58.4	6.5			111.6	627.3				61.3	61.3	0.1
Level of Service	E	A			F	F				E	E	A
Approach Delay (s)		7.8			381.4			0.0			42.3	
Approach LOS		A			F			A			D	

Intersection Summary

HCM Average Control Delay	314.9	HCM Level of Service	F
HCM Volume to Capacity ratio	2.23		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: SR 21 & I-95 Northbound Off-Ramp

SR 21 Corridor No Build
2035 AM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑	↗	↖	↑↑		↖	↗	↗			
Volume (vph)	0	886	27	630	2351	0	276	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	6.4	5.5	6.4		4.5	8.8	4.0			
Lane Util. Factor		0.95	1.00	1.00	0.95		0.95	0.95	1.00			
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3406	1524	1687	3374		1603	1603	1509			
Flt Permitted		1.00	1.00	0.95	1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3406	1524	1687	3374		1603	1603	1509			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	963	29	685	2555	0	300	0	12	0	0	0
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	963	9	685	2555	0	150	150	12	0	0	0
Heavy Vehicles (%)	6%	6%	6%	7%	7%	7%	7%	7%	7%	6%	6%	6%
Turn Type			Perm	Prot			pm+pt		Free			
Protected Phases		8		7	4		5	2				
Permitted Phases			8				2		Free			
Actuated Green, G (s)		49.0	49.0	63.1	117.6		21.5	21.5	150.0			
Effective Green, g (s)		49.0	49.0	63.1	117.6		21.5	21.5	150.0			
Actuated g/C Ratio		0.33	0.33	0.42	0.78		0.14	0.14	1.00			
Clearance Time (s)		6.4	6.4	5.5	6.4		4.5	8.8				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		1113	498	710	2645		230	230	1509			
v/s Ratio Prot		0.28		0.41	c0.76		c0.09	0.09				
v/s Ratio Perm			0.01						0.01			
v/c Ratio		0.87	0.02	0.96	0.97		0.65	0.65	0.01			
Uniform Delay, d1		47.4	34.2	42.4	14.4		60.7	60.7	0.0			
Progression Factor		0.97	0.92	1.00	0.12		1.00	1.00	1.00			
Incremental Delay, d2		6.8	0.0	4.5	1.5		6.5	6.5	0.0			
Delay (s)		52.7	31.4	46.9	3.2		67.2	67.2	0.0			
Level of Service		D	C	D	A		E	E	A			
Approach Delay (s)		52.0			12.5			64.6			0.0	
Approach LOS		D			B			E			A	
Intersection Summary												
HCM Average Control Delay			24.7			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			10.9			
Intersection Capacity Utilization			103.1%			ICU Level of Service			G			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Pilot Truck Stop & SR 21

SR 21 Corridor No Build
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↘	↕↕	↗	↘	↕↕	↗
Volume (vph)	115	6	201	61	3	52	44	746	20	37	2223	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	4.0		6.8	4.0	6.7	6.0	4.0	6.7	6.0	4.0
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)		1728	1538		1778	1583	1719	3438	1538	1703	3406	1524
Flt Permitted		0.69	1.00		0.50	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1244	1538		934	1583	1719	3438	1538	1703	3406	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	7	218	66	3	57	48	811	22	40	2416	111
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	132	218	0	69	57	48	811	22	40	2416	111
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	5%	5%	5%	6%	6%	6%
Turn Type	Perm		Free	Perm		Free	Prot		Free	Prot		Free
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)		17.0	150.0		17.0	150.0	4.9	106.5	150.0	7.0	108.6	150.0
Effective Green, g (s)		17.0	150.0		17.0	150.0	4.9	106.5	150.0	7.0	108.6	150.0
Actuated g/C Ratio		0.11	1.00		0.11	1.00	0.03	0.71	1.00	0.05	0.72	1.00
Clearance Time (s)		6.8			6.8		6.7	6.0		6.7	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		141	1538		106	1583	56	2441	1538	79	2466	1524
v/s Ratio Prot							c0.03	0.24		0.02	c0.71	
v/s Ratio Perm		c0.11	0.14		0.07	0.04			0.01			0.07
v/c Ratio		0.94	0.14		0.65	0.04	0.86	0.33	0.01	0.51	0.98	0.07
Uniform Delay, d1		66.0	0.0		63.7	0.0	72.2	8.3	0.0	69.8	19.7	0.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.21	0.37	1.00
Incremental Delay, d2		56.2	0.2		13.4	0.0	70.1	0.4	0.0	1.5	6.3	0.0
Delay (s)		122.2	0.2		77.1	0.0	142.3	8.6	0.0	85.7	13.5	0.0
Level of Service		F	A		E	A	F	A	A	F	B	A
Approach Delay (s)		46.2			42.2			15.7			14.0	
Approach LOS		D			D			B			B	

Intersection Summary

HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
5: Hendley Road & SR 21

SR 21 Corridor No Build
2035 AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	233	464	116	577	2125	360
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)	253	504	126	627	2310	391
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)	3					
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					803	
pX, platoon unblocked	0.29	0.29	0.29			
vC, conflicting volume	3071	1351	2310			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3241	0	659			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	0	53			
cM capacity (veh/h)	1	319	267			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	758	126	314	314	1540	1161
Volume Left	253	126	0	0	0	0
Volume Right	504	0	0	0	0	391
cSH	3	267	1700	1700	1700	1700
Volume to Capacity	233.41	0.47	0.18	0.18	0.91	0.68
Queue Length 95th (ft)	Err	59	0	0	0	0
Control Delay (s)	Err	30.0	0.0	0.0	0.0	0.0
Lane LOS	F	D				
Approach Delay (s)	Err	5.0			0.0	
Approach LOS	F					

Intersection Summary						
Average Delay			1799.4			
Intersection Capacity Utilization			105.6%	ICU Level of Service	G	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis
6: International Trade Parkway & SR 21

SR 21 Corridor No Build
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕	↗	↖	↕	↕
Volume (vph)	1	0	1	73	0	34	1	658	206	128	2460	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5	4.0	5.5	5.5	4.0	6.1	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1094	979	1703	3406	1524	1719	3438	
Flt Permitted		0.84			0.76	1.00	0.07	1.00	1.00	0.33	1.00	
Satd. Flow (perm)		1470			871	979	121	3406	1524	595	3438	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	1	79	0	37	1	715	224	139	2674	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	79	37	1	715	224	139	2675	0
Heavy Vehicles (%)	1%	1%	1%	65%	65%	65%	6%	6%	6%	5%	5%	5%
Turn Type	Perm			Perm		Free	Perm		Free	pm+pt		
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		Free	6		Free		2	
Actuated Green, G (s)		7.5			7.5	90.0	59.2	59.2	90.0	71.5	71.5	
Effective Green, g (s)		7.5			7.5	90.0	59.2	59.2	90.0	71.5	71.5	
Actuated g/C Ratio		0.08			0.08	1.00	0.66	0.66	1.00	0.79	0.79	
Clearance Time (s)		5.5			5.5		5.5	5.5		6.1	5.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		123			73	979	80	2240	1524	550	2731	
v/s Ratio Prot								0.21		0.02	c0.78	
v/s Ratio Perm		0.00			c0.09	0.04	0.01		0.15	0.18		
v/c Ratio		0.01			1.08	0.04	0.01	0.32	0.15	0.25	0.98	
Uniform Delay, d1		37.8			41.2	0.0	5.3	6.7	0.0	2.6	8.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			129.6	0.1	0.3	0.4	0.2	0.2	13.0	
Delay (s)		37.9			170.9	0.1	5.6	7.0	0.2	2.8	21.6	
Level of Service		D			F	A	A	A	A	A	C	
Approach Delay (s)		37.9			116.4			5.4			20.7	
Approach LOS		D			F			A			C	

Intersection Summary

HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Jimmy DeLoach Parkway & SR 21

SR 21 Corridor No Build
2035 AM



Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	125	304	0	600	45	1119	1531
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	4.0		7.5	4.0	6.5	7.5
Lane Util. Factor	0.97	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)	3045	1404		3539	1583	1703	3406
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3045	1404		3539	1583	1703	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	330	0	652	49	1216	1664
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	136	330	0	652	49	1216	1664
Heavy Vehicles (%)	15%	15%	2%	2%	2%	6%	6%
Turn Type		Free	Perm		Free	Prot	
Protected Phases	4			2		1	6
Permitted Phases		Free	2		Free		
Actuated Green, G (s)	11.0	140.0		25.5	140.0	81.5	113.5
Effective Green, g (s)	11.0	140.0		25.5	140.0	81.5	113.5
Actuated g/C Ratio	0.08	1.00		0.18	1.00	0.58	0.81
Clearance Time (s)	8.0			7.5		6.5	7.5
Vehicle Extension (s)	3.0			3.0		3.0	3.0
Lane Grp Cap (vph)	239	1404		645	1583	991	2761
v/s Ratio Prot	c0.04			c0.18		c0.71	0.49
v/s Ratio Perm		0.23			0.03		
v/c Ratio	0.57	0.24		1.01	0.03	1.23	0.60
Uniform Delay, d1	62.2	0.0		57.2	0.0	29.2	4.9
Progression Factor	1.00	1.00		0.68	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.4		37.7	0.0	111.2	1.0
Delay (s)	65.3	0.4		76.8	0.0	140.4	5.9
Level of Service	E	A		E	A	F	A
Approach Delay (s)	19.3			71.4			62.7
Approach LOS	B			E			E

Intersection Summary

HCM Average Control Delay	59.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Bonnybridge Road (SR 30) & SR 21

SR 21 Corridor No Build
2035 AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	16	63	582	18	373	1283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.5	6.5	5.0	6.5
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)	1641	1468	3574	1599	1752	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.40	1.00
Satd. Flow (perm)	1641	1468	3574	1599	737	3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	68	633	20	405	1395
RTOR Reduction (vph)	0	0	0	10	0	0
Lane Group Flow (vph)	17	68	633	10	405	1395
Heavy Vehicles (%)	10%	10%	1%	1%	3%	3%
Turn Type		Free		Perm	pm+pt	
Protected Phases	8		6		5	2
Permitted Phases		Free		6	2	
Actuated Green, G (s)	3.0	70.0	36.0	36.0	56.0	54.5
Effective Green, g (s)	3.0	70.0	36.0	36.0	56.0	54.5
Actuated g/C Ratio	0.04	1.00	0.51	0.51	0.80	0.78
Clearance Time (s)	6.0		6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	70	1468	1838	822	785	2729
v/s Ratio Prot	c0.01		0.18		c0.10	0.40
v/s Ratio Perm		0.05		0.01	c0.31	
v/c Ratio	0.24	0.05	0.34	0.01	0.52	0.51
Uniform Delay, d1	32.4	0.0	10.0	8.3	3.5	2.9
Progression Factor	1.00	1.00	0.57	0.42	0.78	0.62
Incremental Delay, d2	1.8	0.1	0.5	0.0	0.5	0.6
Delay (s)	34.2	0.1	6.2	3.5	3.2	2.3
Level of Service	C	A	A	A	A	A
Approach Delay (s)	6.9		6.1			2.5
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay	3.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Gulfstream Road & SR 21

SR 21 Corridor No Build
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↕↕	↗	↗	↕↕	↗
Volume (vph)	75	123	491	65	135	62	403	468	78	86	1029	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0		7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0
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		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1793	1553		1700	1468	1770	3539	1583	1787	3574	1599
Flt Permitted		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1793	1553		1700	1468	1770	3539	1583	1787	3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	134	534	71	147	67	438	509	85	93	1118	215
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	216	534	0	218	67	438	509	85	93	1118	215
Heavy Vehicles (%)	4%	4%	4%	10%	10%	10%	2%	2%	2%	1%	1%	1%
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Free
Protected Phases	3	3		4	4		5	2		1		6
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)		17.0	140.0		18.1	140.0	33.0	65.1	140.0	11.8	43.9	140.0
Effective Green, g (s)		17.0	140.0		18.1	140.0	33.0	65.1	140.0	11.8	43.9	140.0
Actuated g/C Ratio		0.12	1.00		0.13	1.00	0.24	0.46	1.00	0.08	0.31	1.00
Clearance Time (s)		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	
Lane Grp Cap (vph)		218	1553		220	1468	417	1646	1583	151	1121	1599
v/s Ratio Prot		c0.12			c0.13		c0.25	0.14		0.05	c0.31	
v/s Ratio Perm			0.34			0.05			0.05			0.13
v/c Ratio		0.99	0.34		0.99	0.05	1.05	0.31	0.05	0.62	1.00	0.13
Uniform Delay, d1		61.4	0.0		60.9	0.0	53.5	23.4	0.0	61.9	48.0	0.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.96	0.86	1.00
Incremental Delay, d2		58.2	0.6		57.9	0.1	57.9	0.5	0.1	6.7	25.2	0.2
Delay (s)		119.6	0.6		118.8	0.1	111.4	23.9	0.1	65.9	66.4	0.2
Level of Service		F	A		F	A	F	C	A	E	E	A
Approach Delay (s)		34.9			90.9			59.1			56.4	
Approach LOS		C			F			E			E	

Intersection Summary

HCM Average Control Delay	55.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
10: Grange Road & SR 21

SR 21 Corridor No Build
2035 AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	28	26	922	16	99	1481
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	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)	1583	1417	3539	1583	1752	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.28	1.00
Satd. Flow (perm)	1583	1417	3539	1583	516	3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	30	28	1002	17	108	1610
RTOR Reduction (vph)	0	26	0	4	0	0
Lane Group Flow (vph)	30	2	1002	13	108	1610
Heavy Vehicles (%)	14%	14%	2%	2%	3%	3%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	3.8	3.8	37.2	37.2	37.2	37.2
Effective Green, g (s)	3.8	3.8	37.2	37.2	37.2	37.2
Actuated g/C Ratio	0.08	0.08	0.74	0.74	0.74	0.74
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	120	108	2633	1178	384	2608
v/s Ratio Prot	c0.02		0.28			c0.46
v/s Ratio Perm		0.00		0.01	0.21	
v/c Ratio	0.25	0.02	0.38	0.01	0.28	0.62
Uniform Delay, d1	21.8	21.4	2.3	1.7	2.1	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.1	0.0	0.4	0.4
Delay (s)	22.9	21.5	2.4	1.7	2.5	3.5
Level of Service	C	C	A	A	A	A
Approach Delay (s)	22.2		2.4			3.4
Approach LOS	C		A			A

Intersection Summary

HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 11: Bourne Avenue (SR 307) & SR 21

SR 21 Corridor No Build
 2035 AM

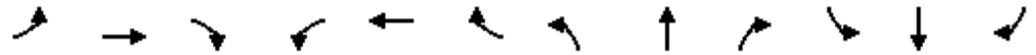
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	316	446	277	255	87	238	745	295	253	1019	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	4.0	8.0	8.0	8.0	8.5	8.0	4.0	8.5	8.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	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)	1421	2843	1272	1456	2911	1302	1770	3539	1583	3467	3574	1599
Flt Permitted	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 (perm)	1421	2843	1272	1456	2911	1302	1770	3539	1583	3467	3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	343	485	301	277	95	259	810	321	275	1108	258
RTOR Reduction (vph)	0	0	0	0	0	76	0	0	0	0	0	0
Lane Group Flow (vph)	115	343	485	301	277	19	259	810	321	275	1108	258
Heavy Vehicles (%)	27%	27%	27%	24%	24%	24%	2%	2%	2%	1%	1%	1%
Turn Type	Prot		Free	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Actuated Green, G (s)	16.4	17.0	145.0	29.0	29.6	29.6	21.5	50.5	145.0	16.0	45.0	145.0
Effective Green, g (s)	16.4	17.0	145.0	29.0	29.6	29.6	21.5	50.5	145.0	16.0	45.0	145.0
Actuated g/C Ratio	0.11	0.12	1.00	0.20	0.20	0.20	0.15	0.35	1.00	0.11	0.31	1.00
Clearance Time (s)	8.0	8.0		8.0	8.0	8.0	8.5	8.0		8.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	161	333	1272	291	594	266	262	1233	1583	383	1109	1599
v/s Ratio Prot	0.08	c0.12		c0.21	0.10		c0.15	0.23		0.08	c0.31	
v/s Ratio Perm			c0.38			0.01			0.20			0.16
v/c Ratio	0.71	1.03	0.38	1.03	0.47	0.07	0.99	0.66	0.20	0.72	1.00	0.16
Uniform Delay, d1	62.0	64.0	0.0	58.0	50.8	46.6	61.6	39.9	0.0	62.3	50.0	0.0
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	14.0	57.3	0.9	61.9	0.6	0.1	51.9	1.3	0.3	6.3	26.6	0.2
Delay (s)	76.0	121.3	0.9	119.9	51.3	46.7	113.5	41.2	0.3	68.6	76.6	0.2
Level of Service	E	F	A	F	D	D	F	D	A	E	E	A
Approach Delay (s)		53.8			81.4			45.2			63.2	
Approach LOS		D			F			D			E	

Intersection Summary		
HCM Average Control Delay	58.6	HCM Level of Service E
HCM Volume to Capacity ratio	1.03	
Actuated Cycle Length (s)	145.0	Sum of lost time (s) 32.5
Intersection Capacity Utilization	96.3%	ICU Level of Service F
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
12: Brampton Road & SR 21

SR 21 Corridor No Build
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖		↗		↕↕↕		↖	↕↕↕	
Volume (vph)	1	1	1	73	0	49	0	1794	61	52	1989	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Lane Util. Factor		1.00	1.00	1.00		1.00		0.91		1.00	0.91	
Frt		1.00	0.85	1.00		0.85		1.00		1.00	1.00	
Flt Protected		0.98	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1817	1583	1671		1495		5060		1770	5085	
Flt Permitted		0.98	1.00	0.76		1.00		1.00		0.07	1.00	
Satd. Flow (perm)		1817	1583	1331		1495		5060		138	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	79	0	53	0	1950	66	57	2162	0
RTOR Reduction (vph)	0	0	1	0	0	47	0	3	0	0	0	0
Lane Group Flow (vph)	0	2	0	79	0	6	0	2013	0	57	2162	0
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	2%	2%	2%	2%	2%	2%
Turn Type	Perm		Perm	custom		custom				pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)		8.9	8.9	8.9		8.9		49.6		58.1	58.1	
Effective Green, g (s)		8.9	8.9	8.9		8.9		49.6		58.1	58.1	
Actuated g/C Ratio		0.11	0.11	0.11		0.11		0.62		0.73	0.73	
Clearance Time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Vehicle Extension (s)		3.0	3.0	3.0		3.0		5.0		3.0	5.0	
Lane Grp Cap (vph)		202	176	148		166		3137		182	3693	
v/s Ratio Prot								c0.40		0.02	c0.43	
v/s Ratio Perm		0.00	0.00	c0.06		0.00				0.21		
v/c Ratio		0.01	0.00	0.53		0.04		0.64		0.31	0.59	
Uniform Delay, d1		31.6	31.6	33.6		31.7		9.6		6.2	5.2	
Progression Factor		1.00	1.00	1.00		1.00		0.10		1.00	1.00	
Incremental Delay, d2		0.0	0.0	3.7		0.1		0.5		1.0	0.7	
Delay (s)		31.6	31.6	37.3		31.8		1.5		7.2	5.9	
Level of Service		C	C	D		C		A		A	A	
Approach Delay (s)		31.6			35.1			1.5			5.9	
Approach LOS		C			D			A			A	

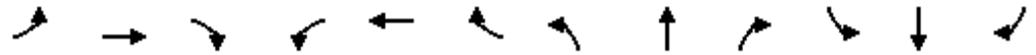
Intersection Summary

HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Minus Avenue & SR 21

SR 21 Corridor No Build
2035 AM

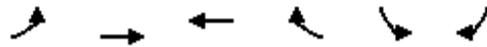


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑↑↑		↕	↑↑↑	
Volume (vph)	58	10	180	121	10	52	26	1745	61	137	1723	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frt		0.90			0.96		1.00	0.99		1.00	0.98	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1629			1965		1770	5060		1770	5005	
Flt Permitted		0.88			0.53		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1445			1084		1770	5060		1770	5005	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	11	196	132	11	57	28	1897	66	149	1873	220
RTOR Reduction (vph)	0	121	0	0	18	0	0	5	0	0	16	0
Lane Group Flow (vph)	0	149	0	0	182	0	28	1958	0	149	2077	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Actuated Green, G (s)		15.2			15.2		2.0	32.4		12.4	42.8	
Effective Green, g (s)		15.2			15.2		2.0	32.4		12.4	42.8	
Actuated g/C Ratio		0.19			0.19		0.02	0.40		0.16	0.53	
Clearance Time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		275			206		44	2049		274	2678	
v/s Ratio Prot							0.02	c0.39		0.08	c0.41	
v/s Ratio Perm		0.10			c0.17							
v/c Ratio		0.54			0.88		0.64	0.96		0.54	0.78	
Uniform Delay, d1		29.3			31.5		38.6	23.1		31.2	14.8	
Progression Factor		1.00			1.00		1.00	1.00		0.83	0.62	
Incremental Delay, d2		2.2			33.0		26.4	11.9		1.9	1.9	
Delay (s)		31.4			64.6		65.0	35.0		27.7	11.1	
Level of Service		C			E		E	C		C	B	
Approach Delay (s)		31.4			64.6			35.4			12.2	
Approach LOS		C			E			D			B	

Intersection Summary		
HCM Average Control Delay	25.4	HCM Level of Service C
HCM Volume to Capacity ratio	0.84	
Actuated Cycle Length (s)	80.0	Sum of lost time (s) 13.5
Intersection Capacity Utilization	84.2%	ICU Level of Service E
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis
 14: Bourne Avenue (SR 307) & JDL Connector

SR 21 Corridor No Build
 2035 AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	424	440	103	66	1266	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2694	2777	1951	873	2824	1302
Flt Permitted	0.68	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1931	2777	1951	873	2824	1302
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	461	478	112	72	1376	561
RTOR Reduction (vph)	0	0	0	52	0	243
Lane Group Flow (vph)	461	478	112	20	1376	318
Heavy Vehicles (%)	30%	30%	85%	85%	24%	24%
Turn Type	Perm			Perm		Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	16.6	16.6	16.6	16.6	33.5	33.5
Effective Green, g (s)	16.6	16.6	16.6	16.6	33.5	33.5
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.57	0.57
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	542	780	548	245	1601	738
v/s Ratio Prot		0.17	0.06		0.49	
v/s Ratio Perm	0.24			0.02		0.24
v/c Ratio	0.85	0.61	0.20	0.08	0.86	0.43
Uniform Delay, d1	20.1	18.5	16.2	15.6	10.8	7.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	1.4	0.2	0.1	6.3	1.8
Delay (s)	32.2	19.9	16.4	15.8	17.1	9.2
Level of Service	C	B	B	B	B	A
Approach Delay (s)		26.0	16.2		14.8	
Approach LOS		C	B		B	

Intersection Summary

HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: Grange Road & JDLC On Off Ramp

SR 21 Corridor No Build
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Volume (vph)	0	109	6	8	41	0	0	0	0	108	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00						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)		1652	1404	1612	1696						1378	1233
Flt Permitted		1.00	1.00	0.68	1.00						0.95	1.00
Satd. Flow (perm)		1652	1404	1155	1696						1378	1233
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	118	7	9	45	0	0	0	0	117	0	14
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	0	118	1	9	45	0	0	0	0	0	117	10
Heavy Vehicles (%)	15%	15%	15%	12%	12%	12%	2%	2%	2%	31%	31%	31%
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		9.1	9.1	9.1	9.1						51.9	51.9
Effective Green, g (s)		9.1	9.1	9.1	9.1						51.9	51.9
Actuated g/C Ratio		0.13	0.13	0.13	0.13						0.74	0.74
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		215	183	150	220						1022	914
v/s Ratio Prot		c0.07			0.03							
v/s Ratio Perm			0.00	0.01							0.08	0.01
v/c Ratio		0.55	0.00	0.06	0.20						0.11	0.01
Uniform Delay, d1		28.5	26.5	26.7	27.2						2.6	2.4
Progression Factor		1.00	1.00	1.05	1.05						1.00	1.00
Incremental Delay, d2		2.9	0.0	0.2	0.5						0.2	0.0
Delay (s)		31.4	26.5	28.1	29.0						2.8	2.4
Level of Service		C	C	C	C						A	A
Approach Delay (s)		31.1			28.8			0.0			2.7	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

16: Grange Road & JDLCon On Ramp

SR 21 Corridor No Build
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑			↑	↗		↗	↗			
Volume (vph)	59	158	0	0	37	160	12	0	46	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	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)	1480	1557			1450	1233		1641	1468			
Flt Permitted	0.73	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1138	1557			1450	1233		1641	1468			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	172	0	0	40	174	13	0	50	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	141	0	0	16	0	0	0
Lane Group Flow (vph)	64	172	0	0	40	33	0	13	34	0	0	0
Heavy Vehicles (%)	22%	22%	22%	31%	31%	31%	10%	10%	10%	2%	2%	2%
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	13.3	13.3			13.3	13.3		47.7	47.7			
Effective Green, g (s)	13.3	13.3			13.3	13.3		47.7	47.7			
Actuated g/C Ratio	0.19	0.19			0.19	0.19		0.68	0.68			
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	216	296			276	234		1118	1000			
v/s Ratio Prot		c0.11			0.03							
v/s Ratio Perm	0.06					0.03		0.01	c0.02			
v/c Ratio	0.30	0.58			0.14	0.14		0.01	0.03			
Uniform Delay, d1	24.3	25.8			23.6	23.6		3.6	3.6			
Progression Factor	0.56	0.58			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.8	2.9			0.2	0.3		0.0	0.1			
Delay (s)	14.4	17.9			23.9	23.9		3.6	3.7			
Level of Service	B	B			C	C		A	A			
Approach Delay (s)		17.0			23.9			3.7			0.0	
Approach LOS		B			C			A			A	

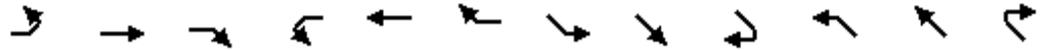
Intersection Summary

HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 17: Jimmy DeLoach Parkway & JDL Parkway Off Ramp

SR 21 Corridor No Build
 2035 AM



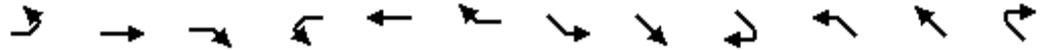
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↑		↑		↑		↑			
Volume (veh/h)	0	188	976	2	324	0	2	0	105	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	204	1061	2	352	0	2	0	114	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	352			204			459	561	352	561	561	102
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	352			204			459	561	352	561	561	102
tC, single (s)	4.4			4.5			7.7	6.7	7.1	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.3			2.4			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	100			100			100	100	82	100	100	100
cM capacity (veh/h)	1121			1255			465	416	619	334	434	933

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	SE 1	SE 2
Volume Total	102	102	1061	354	2	114
Volume Left	0	0	0	2	2	0
Volume Right	0	0	1061	0	0	114
cSH	1700	1700	1700	1255	465	619
Volume to Capacity	0.06	0.06	0.62	0.00	0.00	0.18
Queue Length 95th (ft)	0	0	0	0	0	17
Control Delay (s)	0.0	0.0	0.0	0.1	12.8	12.1
Lane LOS				A	B	B
Approach Delay (s)	0.0			0.1	12.1	
Approach LOS					B	

Intersection Summary		
Average Delay		0.8
Intersection Capacity Utilization	84.3%	ICU Level of Service E
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis
 18: Jimmy DeLoach Parkway & JDL Parkway On Ramp

SR 21 Corridor No Build
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	186	4	0	0	4	1	0	0	0	322	0	1
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)	202	4	0	0	4	1	0	0	0	350	0	1

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total (vph)	202	4	5	351
Volume Left (vph)	202	0	0	350
Volume Right (vph)	0	0	1	1
Hadj (s)	0.64	0.14	-0.09	0.50
Departure Headway (s)	6.1	5.6	5.2	5.1
Degree Utilization, x	0.34	0.01	0.01	0.49
Capacity (veh/h)	561	608	624	693
Control Delay (s)	11.1	7.5	8.3	12.9
Approach Delay (s)	11.0		8.3	12.9
Approach LOS	B		A	B

Intersection Summary			
Delay		12.2	
HCM Level of Service		B	
Intersection Capacity Utilization	41.5%		ICU Level of Service A
Analysis Period (min)		15	

No Build
2035
PM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: SR 30 & SR 21

SR 21 Corridor No Build
2035 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	62	155	110	42	364	495	3953	256	76	1875	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	4.5	7.0	4.0	7.0	6.4	4.0	7.0	6.4	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1735	1524	1703	1792	1524	3303	3406	1524	1703	3406	1524
Flt Permitted		0.77	1.00	0.36	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1383	1524	639	1792	1524	3303	3406	1524	1703	3406	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	67	168	120	46	396	538	4297	278	83	2038	30
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	200	168	120	46	396	538	4297	278	83	2038	30
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)		24.5	145.6	33.0	33.0	145.6	14.0	87.2	145.6	5.0	78.2	145.6
Effective Green, g (s)		24.5	145.6	33.0	33.0	145.6	14.0	87.2	145.6	5.0	78.2	145.6
Actuated g/C Ratio		0.17	1.00	0.23	0.23	1.00	0.10	0.60	1.00	0.03	0.54	1.00
Clearance Time (s)		7.0		4.5	7.0		7.0	6.4		7.0	6.4	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		233	1524	174	406	1524	318	2040	1524	58	1829	1524
v/s Ratio Prot				c0.02	0.03		c0.16	c1.26		0.05	0.60	
v/s Ratio Perm		c0.14	0.11	0.14		0.26			0.18			0.02
v/c Ratio		0.86	0.11	0.69	0.11	0.26	1.69	2.11	0.18	1.43	1.11	0.02
Uniform Delay, d1		58.9	0.0	53.8	44.7	0.0	65.8	29.2	0.0	70.3	33.7	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		25.4	0.1	10.8	0.1	0.4	324.6	499.5	0.3	268.4	59.7	0.0
Delay (s)		84.3	0.1	64.6	44.8	0.4	390.4	528.7	0.3	338.7	93.4	0.0
Level of Service		F	A	E	D	A	F	F	A	F	F	A
Approach Delay (s)		45.9			17.8			485.5			101.6	
Approach LOS		D			B			F			F	

Intersection Summary

HCM Average Control Delay	332.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.83		
Actuated Cycle Length (s)	145.6	Sum of lost time (s)	24.9
Intersection Capacity Utilization	147.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: SR 21 & I-95 Southbound On-Ramp

SR 21 Corridor No Build
2035 PM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 			 						 	
Volume (vph)	68	4584	0	0	1091	1073	0	0	0	122	0	365
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	4.0				4.5	4.5	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00				0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	1687	3374			3374	1509				1603	1603	1509
Flt Permitted	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	1687	3374			3374	1509				1603	1603	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	4983	0	0	1186	1166	0	0	0	133	0	397
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	74	4983	0	0	1186	1166	0	0	0	66	67	397
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot					Free				Prot		Free
Protected Phases	3	8			4					1	6	
Permitted Phases						Free						Free
Actuated Green, G (s)	11.5	123.0			105.5	150.0				16.5	16.5	150.0
Effective Green, g (s)	11.5	123.0			105.5	150.0				16.5	16.5	150.0
Actuated g/C Ratio	0.08	0.82			0.70	1.00				0.11	0.11	1.00
Clearance Time (s)	6.0	6.0			6.0					4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)	129	2767			2373	1509				176	176	1509
v/s Ratio Prot	0.04	c1.48			0.35					0.04	0.04	
v/s Ratio Perm						c0.77						0.26
v/c Ratio	0.57	1.80			0.50	0.77				0.38	0.38	0.26
Uniform Delay, d1	66.9	13.5			10.2	0.0				62.0	62.0	0.0
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	6.0	361.8			0.2	3.9				1.3	1.4	0.4
Delay (s)	72.9	375.3			10.3	3.9				63.3	63.4	0.4
Level of Service	E	F			B	A				E	E	A
Approach Delay (s)		370.9			7.2			0.0			16.2	
Approach LOS		F			A			A			B	

Intersection Summary		
HCM Average Control Delay	239.5	HCM Level of Service F
HCM Volume to Capacity ratio	1.65	
Actuated Cycle Length (s)	150.0	Sum of lost time (s) 6.0
Intersection Capacity Utilization	176.6%	ICU Level of Service H
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: SR 21 & I-95 Northbound Off-Ramp

SR 21 Corridor No Build
2035 PM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑	↑	↑	↑↑		↑	↑	↑			
Volume (vph)	0	2172	71	226	987	0	2480	0	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	6.4	5.5	6.4		4.5	8.8	4.0			
Lane Util. Factor		0.95	1.00	1.00	0.95		0.95	0.95	1.00			
Fr _t		1.00	0.85	1.00	1.00		1.00	1.00	0.85			
Fl _t Protected		1.00	1.00	0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3374	1509	1687	3374		1603	1603	1509			
Fl _t Permitted		1.00	1.00	0.95	1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3374	1509	1687	3374		1603	1603	1509			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2361	77	246	1073	0	2696	0	25	0	0	0
RTOR Reduction (vph)	0	0	31	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2361	46	246	1073	0	1348	1348	25	0	0	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type			Perm	Prot			pm+pt		Free			
Protected Phases		8		7	4		5	2				
Permitted Phases			8				2		Free			
Actuated Green, G (s)		38.6	38.6	10.5	54.6		44.5	44.5	110.0			
Effective Green, g (s)		38.6	38.6	10.5	54.6		44.5	44.5	110.0			
Actuated g/C Ratio		0.35	0.35	0.10	0.50		0.40	0.40	1.00			
Clearance Time (s)		6.4	6.4	5.5	6.4		4.5	8.8				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		1184	530	161	1675		648	648	1509			
v/s Ratio Prot		c0.70		c0.15	0.32		c0.84	0.84				
v/s Ratio Perm			0.03						0.02			
v/c Ratio		1.99	0.09	1.53	0.64		2.08	2.08	0.02			
Uniform Delay, d ₁		35.7	23.9	49.8	20.5		32.8	32.8	0.0			
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d ₂		450.4	0.1	266.4	0.8		491.4	491.4	0.0			
Delay (s)		486.1	24.0	316.2	21.3		524.2	524.2	0.0			
Level of Service		F	C	F	C		F	F	A			
Approach Delay (s)		471.5			76.3			519.3			0.0	
Approach LOS		F			E			F			A	

Intersection Summary

HCM Average Control Delay	411.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	176.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Pilot Truck Stop & SR 21

SR 21 Corridor No Build
2035 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	6	80	29	3	32	161	2067	26	46	872	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	4.0		6.8	4.0	6.7	6.0	4.0	6.7	6.0	4.0
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		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1727	1538		1730	1538	1719	3438	1538	1719	3438	1538
Flt Permitted		0.71	1.00		0.50	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1284	1538		912	1538	1719	3438	1538	1719	3438	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	7	87	32	3	35	175	2247	28	50	948	100
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	164	87	0	35	35	175	2247	28	50	948	100
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Perm		Free	Perm		Free	Prot		Free	Prot		Free
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)		19.0	133.2		19.0	133.2	46.5	90.1	133.2	4.6	48.2	133.2
Effective Green, g (s)		19.0	133.2		19.0	133.2	46.5	90.1	133.2	4.6	48.2	133.2
Actuated g/C Ratio		0.14	1.00		0.14	1.00	0.35	0.68	1.00	0.03	0.36	1.00
Clearance Time (s)		6.8			6.8		6.7	6.0		6.7	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		183	1538		130	1538	600	2326	1538	59	1244	1538
v/s Ratio Prot							0.10	c0.65		0.03	c0.28	
v/s Ratio Perm		c0.13	0.06		0.04	0.02			0.02			0.07
v/c Ratio		0.90	0.06		0.27	0.02	0.29	0.97	0.02	0.85	0.76	0.07
Uniform Delay, d1		56.1	0.0		50.9	0.0	31.4	20.1	0.0	64.0	37.4	0.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		38.4	0.1		1.1	0.0	0.3	11.7	0.0	64.8	2.8	0.1
Delay (s)		94.5	0.1		52.0	0.0	31.7	31.8	0.0	128.8	40.3	0.1
Level of Service		F	A		D	A	C	C	A	F	D	A
Approach Delay (s)		61.8			26.0			31.4			40.6	
Approach LOS		E			C			C			D	
Intersection Summary												
HCM Average Control Delay			35.9				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			133.2				Sum of lost time (s)				18.8	
Intersection Capacity Utilization			93.3%				ICU Level of Service				F	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
5: Hendley Road & SR 21

SR 21 Corridor No Build
2035 PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	285	104	279	1969	827	154
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)	310	113	303	2140	899	167
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)	3					
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					803	
pX, platoon unblocked	0.76	0.76	0.76			
vC, conflicting volume	2659	533	899			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2550	0	226			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	86	70			
cM capacity (veh/h)	11	814	998			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	423	303	1070	1070	599	467
Volume Left	310	303	0	0	0	0
Volume Right	113	0	0	0	0	167
cSH	15	998	1700	1700	1700	1700
Volume to Capacity	28.23	0.30	0.63	0.63	0.35	0.27
Queue Length 95th (ft)	Err	32	0	0	0	0
Control Delay (s)	Err	10.2	0.0	0.0	0.0	0.0
Lane LOS	F	B				
Approach Delay (s)	Err	1.3			0.0	
Approach LOS	F					

Intersection Summary						
Average Delay			1075.9			
Intersection Capacity Utilization			76.9%	ICU Level of Service	D	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis
6: International Trade Parkway & SR 21

SR 21 Corridor No Build
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕	↗	↖	↕	↕
Volume (vph)	1	0	1	86	0	73	1	2174	370	56	875	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5	4.0	5.5	5.5	4.0	6.1	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1626	1455	1626	3252	1455	1626	3252	
Flt Permitted		0.79			0.76	1.00	0.30	1.00	1.00	0.05	1.00	
Satd. Flow (perm)		1393			1295	1455	515	3252	1455	93	3252	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	1	93	0	79	1	2363	402	61	951	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	93	79	1	2363	402	61	951	0
Heavy Vehicles (%)	1%	1%	1%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Perm			Perm		Free	Perm		Free	pm+pt		
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		Free	6		Free		2	
Actuated Green, G (s)		5.5			5.5	94.0	67.7	67.7	94.0	77.5	77.5	
Effective Green, g (s)		5.5			5.5	94.0	67.7	67.7	94.0	77.5	77.5	
Actuated g/C Ratio		0.06			0.06	1.00	0.72	0.72	1.00	0.82	0.82	
Clearance Time (s)		5.5			5.5		5.5	5.5		6.1	5.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		82			76	1455	371	2342	1455	137	2681	
v/s Ratio Prot								c0.73		0.02	0.29	
v/s Ratio Perm		0.00			c0.07	0.05	0.00		c0.28	0.35		
v/c Ratio		0.01			1.22	0.05	0.00	1.01	0.28	0.45	0.35	
Uniform Delay, d1		41.7			44.2	0.0	3.7	13.1	0.0	23.0	2.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			175.1	0.1	0.0	20.8	0.5	2.3	0.4	
Delay (s)		41.8			219.4	0.1	3.7	34.0	0.5	25.3	2.4	
Level of Service		D			F	A	A	C	A	C	A	
Approach Delay (s)		41.8			118.7			29.1			3.8	
Approach LOS		D			F			C			A	

Intersection Summary		
HCM Average Control Delay	26.5	HCM Level of Service C
HCM Volume to Capacity ratio	0.94	
Actuated Cycle Length (s)	94.0	Sum of lost time (s) 11.0
Intersection Capacity Utilization	77.7%	ICU Level of Service D
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Jimmy DeLoach Parkway & SR 21

SR 21 Corridor No Build
2035 PM



Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	129	992	0	1668	109	386	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	4.0		7.5	4.0	6.5	7.5
Lane Util. Factor	0.97	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)	3273	1509		3374	1509	1687	3374
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509		3374	1509	1687	3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	1078	0	1813	118	420	674
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	140	1078	0	1813	118	420	674
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%
Turn Type		Free	Perm		Free	Prot	
Protected Phases	4			2		1	6
Permitted Phases		Free	2		Free		
Actuated Green, G (s)	10.9	140.0		73.6	140.0	33.5	113.6
Effective Green, g (s)	10.9	140.0		73.6	140.0	33.5	113.6
Actuated g/C Ratio	0.08	1.00		0.53	1.00	0.24	0.81
Clearance Time (s)	8.0			7.5		6.5	7.5
Vehicle Extension (s)	3.0			3.0		3.0	3.0
Lane Grp Cap (vph)	255	1509		1774	1509	404	2738
v/s Ratio Prot	0.04			c0.54		c0.25	0.20
v/s Ratio Perm		c0.71			0.08		
v/c Ratio	0.55	0.71		1.02	0.08	1.04	0.25
Uniform Delay, d1	62.2	0.0		33.2	0.0	53.2	3.1
Progression Factor	1.00	1.00		0.83	1.00	1.00	1.00
Incremental Delay, d2	2.4	2.9		24.3	0.1	55.4	0.2
Delay (s)	64.6	2.9		51.7	0.1	108.7	3.3
Level of Service	E	A		D	A	F	A
Approach Delay (s)	10.0			48.5			43.8
Approach LOS	B			D			D

Intersection Summary			
HCM Average Control Delay		36.3	HCM Level of Service D
HCM Volume to Capacity ratio		0.98	
Actuated Cycle Length (s)		140.0	Sum of lost time (s) 14.0
Intersection Capacity Utilization		92.5%	ICU Level of Service F
Analysis Period (min)		15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Bonnybridge Road (SR 30) & SR 21

SR 21 Corridor No Build
2035 PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	8	166	1611	17	100	649
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.5	6.5	5.0	6.5
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)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.08	1.00
Satd. Flow (perm)	1770	1583	3539	1583	155	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	180	1751	18	109	705
RTOR Reduction (vph)	0	0	0	5	0	0
Lane Group Flow (vph)	9	180	1751	13	109	705
Turn Type		Free		Perm	pm+pt	
Protected Phases	8		6		5	2
Permitted Phases		Free		6	2	
Actuated Green, G (s)	3.0	70.0	41.5	41.5	56.0	54.5
Effective Green, g (s)	3.0	70.0	41.5	41.5	56.0	54.5
Actuated g/C Ratio	0.04	1.00	0.59	0.59	0.80	0.78
Clearance Time (s)	6.0		6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	76	1583	2098	938	309	2755
v/s Ratio Prot	0.01		c0.49		c0.04	0.20
v/s Ratio Perm		c0.11		0.01	0.24	
v/c Ratio	0.12	0.11	0.83	0.01	0.35	0.26
Uniform Delay, d1	32.2	0.0	11.5	5.9	15.6	2.1
Progression Factor	1.00	1.00	0.77	0.66	0.92	0.78
Incremental Delay, d2	0.7	0.1	4.1	0.0	0.7	0.2
Delay (s)	32.9	0.1	13.0	3.9	15.0	1.9
Level of Service	C	A	B	A	B	A
Approach Delay (s)	1.7		12.9			3.6
Approach LOS	A		B			A

Intersection Summary

HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: Gulfstream Road & SR 21

SR 21 Corridor No Build
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↕↕	↗	↗	↕↕	↗
Volume (vph)	201	246	504	86	187	143	201	246	504	64	438	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0		7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1804	1568		1816	1568	1752	3505	1568	1752	3505	1568
Fl _t Permitted		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1804	1568		1816	1568	1752	3505	1568	1752	3505	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	267	548	93	203	155	218	267	548	70	476	176
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	485	548	0	296	155	218	267	548	70	476	176
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Free
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)		40.1	140.0		25.1	140.0	18.8	30.9	140.0	15.9	28.0	140.0
Effective Green, g (s)		40.1	140.0		25.1	140.0	18.8	30.9	140.0	15.9	28.0	140.0
Actuated g/C Ratio		0.29	1.00		0.18	1.00	0.13	0.22	1.00	0.11	0.20	1.00
Clearance Time (s)		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	
Lane Grp Cap (vph)		517	1568		326	1568	235	774	1568	199	701	1568
v/s Ratio Prot		c0.27			c0.16		c0.12	0.08		0.04	c0.14	
v/s Ratio Perm			0.35			0.10			0.35			0.11
v/c Ratio		0.94	0.35		0.91	0.10	0.93	0.34	0.35	0.35	0.68	0.11
Uniform Delay, d ₁		48.7	0.0		56.3	0.0	59.9	46.0	0.0	57.3	51.8	0.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.80	0.80	1.00
Incremental Delay, d ₂		24.8	0.6		27.5	0.1	39.0	1.2	0.6	1.1	5.2	0.1
Delay (s)		73.5	0.6		83.8	0.1	98.9	47.2	0.6	47.0	46.7	0.1
Level of Service		E	A		F	A	F	D	A	D	D	A
Approach Delay (s)		34.8			55.1			33.4			35.4	
Approach LOS		C			E			C			D	

Intersection Summary

HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
10: Grange Road & SR 21

SR 21 Corridor No Build
2035 PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	21	101	1828	64	39	985
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	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)	1752	1568	3505	1568	1752	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.10	1.00
Satd. Flow (perm)	1752	1568	3505	1568	188	3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	110	1987	70	42	1071
RTOR Reduction (vph)	0	7	0	21	0	0
Lane Group Flow (vph)	23	103	1987	49	42	1071
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	7.7	7.7	39.2	39.2	39.2	39.2
Effective Green, g (s)	7.7	7.7	39.2	39.2	39.2	39.2
Actuated g/C Ratio	0.14	0.14	0.70	0.70	0.70	0.70
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	241	216	2458	1100	132	2458
v/s Ratio Prot	0.01		c0.57			0.31
v/s Ratio Perm		c0.07		0.03	0.22	
v/c Ratio	0.10	0.48	0.81	0.04	0.32	0.44
Uniform Delay, d1	21.1	22.2	5.8	2.6	3.2	3.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.7	2.1	0.0	1.4	0.1
Delay (s)	21.2	23.9	7.8	2.6	4.6	3.7
Level of Service	C	C	A	A	A	A
Approach Delay (s)	23.4		7.6			3.7
Approach LOS	C		A			A

Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 11: Bourne Avenue (SR 307) & SR 21

SR 21 Corridor No Build
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↘	↘	↗↗	↘	↘	↗↗	↘	↗↗	↗↗	↘
Volume (vph)	247	427	416	379	474	295	293	1350	218	102	813	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	4.0	8.0	8.0	8.0	8.5	8.0	4.0	8.5	8.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	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)	1612	3223	1442	1612	3223	1442	1612	3223	1442	3127	3223	1442
Flt Permitted	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 (perm)	1612	3223	1442	1612	3223	1442	1612	3223	1442	3127	3223	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	464	452	412	515	321	318	1467	237	111	884	99
RTOR Reduction (vph)	0	0	0	0	0	115	0	0	0	0	0	0
Lane Group Flow (vph)	268	464	452	412	515	206	318	1467	237	111	884	99
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot		Free	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases			Free			8			Free			Free
Actuated Green, G (s)	24.0	17.0	145.0	30.0	23.0	23.0	24.5	58.5	145.0	7.0	41.0	145.0
Effective Green, g (s)	24.0	17.0	145.0	30.0	23.0	23.0	24.5	58.5	145.0	7.0	41.0	145.0
Actuated g/C Ratio	0.17	0.12	1.00	0.21	0.16	0.16	0.17	0.40	1.00	0.05	0.28	1.00
Clearance Time (s)	8.0	8.0		8.0	8.0	8.0	8.5	8.0		8.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	267	378	1442	334	511	229	272	1300	1442	151	911	1442
v/s Ratio Prot	0.17	c0.14		c0.26	c0.16		c0.20	c0.46		0.04	0.27	
v/s Ratio Perm			0.31			0.14			0.16			0.07
v/c Ratio	1.00	1.23	0.31	1.23	1.01	0.90	1.17	1.13	0.16	0.74	0.97	0.07
Uniform Delay, d1	60.5	64.0	0.0	57.5	61.0	59.9	60.2	43.2	0.0	68.1	51.4	0.0
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	56.0	123.7	0.6	128.4	41.8	33.2	108.3	68.1	0.2	16.9	22.8	0.1
Delay (s)	116.5	187.7	0.6	185.9	102.8	93.0	168.5	111.4	0.2	85.0	74.2	0.1
Level of Service	F	F	A	F	F	F	F	F	A	F	E	A
Approach Delay (s)		100.1			127.7			107.3			68.5	
Approach LOS		F			F			F			E	

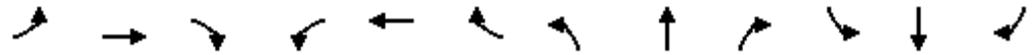
Intersection Summary

HCM Average Control Delay	102.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	40.5
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 12: Brampton Road & SR 21

SR 21 Corridor No Build
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖		↗		↑↑↑		↖	↑↑↑	
Volume (vph)	1	1	1	54	0	61	0	2192	76	36	1652	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Lane Util. Factor		1.00	1.00	1.00		1.00		0.91		1.00	0.91	
Frt		1.00	0.85	1.00		0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1817	1583	1770		1583		5060		1770	5085	
Flt Permitted		0.98	1.00	0.76		1.00		1.00		0.04	1.00	
Satd. Flow (perm)		1817	1583	1409		1583		5060		80	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	59	0	66	0	2383	83	39	1796	0
RTOR Reduction (vph)	0	0	1	0	0	61	0	2	0	0	0	0
Lane Group Flow (vph)	0	2	0	59	0	5	0	2464	0	39	1796	0
Turn Type	Perm		Perm	custom		custom				pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)		9.6	9.6	9.6		9.6		98.2		109.4	107.4	
Effective Green, g (s)		9.6	9.6	9.6		9.6		98.2		109.4	107.4	
Actuated g/C Ratio		0.07	0.07	0.07		0.07		0.76		0.84	0.83	
Clearance Time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Vehicle Extension (s)		3.0	3.0	3.0		3.0		5.0		3.0	5.0	
Lane Grp Cap (vph)		134	117	104		117		3822		128	4201	
v/s Ratio Prot								c0.49		0.01	c0.35	
v/s Ratio Perm		0.00	0.00	c0.04		0.00				0.24		
v/c Ratio		0.01	0.00	0.57		0.04		0.64		0.30	0.43	
Uniform Delay, d1		55.8	55.8	58.2		55.9		7.6		13.0	3.0	
Progression Factor		1.00	1.00	1.00		1.00		0.27		1.00	1.00	
Incremental Delay, d2		0.0	0.0	6.9		0.1		0.1		1.3	0.3	
Delay (s)		55.9	55.8	65.1		56.1		2.1		14.3	3.4	
Level of Service		E	E	E		E		A		B	A	
Approach Delay (s)		55.8			60.3			2.1			3.6	
Approach LOS		E			E			A			A	

Intersection Summary		
HCM Average Control Delay	4.4	HCM Level of Service
HCM Volume to Capacity ratio	0.61	A
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	73.6%	13.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		D

HCM Signalized Intersection Capacity Analysis
13: Minus Avenue & SR 21

SR 21 Corridor No Build
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑↑↑		↕	↑↑↑	
Volume (vph)	89	10	286	237	10	76	31	2103	54	88	1450	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frt		0.90			0.97		1.00	1.00		1.00	0.98	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1657			1972		1770	5066		1770	5006	
Flt Permitted		0.85			0.45		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1427			926		1770	5066		1770	5006	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	11	311	258	11	83	34	2286	59	96	1576	183
RTOR Reduction (vph)	0	80	0	0	9	0	0	2	0	0	10	0
Lane Group Flow (vph)	0	339	0	0	343	0	34	2343	0	96	1749	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Actuated Green, G (s)		44.0			44.0		4.1	55.3		10.7	61.9	
Effective Green, g (s)		44.0			44.0		4.1	55.3		10.7	61.9	
Actuated g/C Ratio		0.34			0.34		0.03	0.43		0.08	0.48	
Clearance Time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		483			313		56	2155		146	2384	
v/s Ratio Prot							0.02	c0.46		0.05	c0.35	
v/s Ratio Perm		0.24			c0.37							
v/c Ratio		0.70			1.10		0.61	1.09		0.66	0.73	
Uniform Delay, d1		37.3			43.0		62.2	37.4		57.9	27.4	
Progression Factor		1.00			1.00		1.00	1.00		0.95	0.90	
Incremental Delay, d2		4.6			79.4		17.2	47.8		9.5	1.9	
Delay (s)		41.9			122.4		79.4	85.1		64.4	26.5	
Level of Service		D			F		E	F		E	C	
Approach Delay (s)		41.9			122.4			85.0			28.4	
Approach LOS		D			F			F			C	

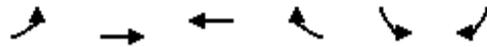
Intersection Summary

HCM Average Control Delay	63.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	110.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 14: Bourne Avenue (SR 307) & JDL Connector

SR 21 Corridor No Build
 2035 PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖↗	↕↕	↕↕	↗	↖↗	↗
Volume (vph)	607	165	495	885	456	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2694	2777	1951	873	2824	1302
Flt Permitted	0.43	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1220	2777	1951	873	2824	1302
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	660	179	538	962	496	710
RTOR Reduction (vph)	0	0	0	329	0	252
Lane Group Flow (vph)	660	179	538	633	496	458
Heavy Vehicles (%)	30%	30%	85%	85%	24%	24%
Turn Type	Perm			Perm		Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	68.5	68.5	68.5	68.5	32.5	32.5
Effective Green, g (s)	68.5	68.5	68.5	68.5	32.5	32.5
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.30	0.30
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	760	1729	1215	544	834	385
v/s Ratio Prot		0.06	0.28		0.18	
v/s Ratio Perm	0.54			c0.72		c0.35
v/c Ratio	0.87	0.10	0.44	1.16	0.59	1.19
Uniform Delay, d1	17.0	8.4	10.8	20.8	33.1	38.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	0.0	0.3	92.1	3.1	108.9
Delay (s)	27.4	8.4	11.1	112.9	36.2	147.6
Level of Service	C	A	B	F	D	F
Approach Delay (s)		23.3	76.4		101.8	
Approach LOS		C	E		F	

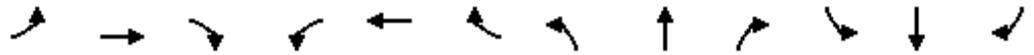
Intersection Summary

HCM Average Control Delay	72.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 15: Grange Road & JDLC on Off Ramp

SR 21 Corridor No Build
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Volume (vph)	0	99	4	10	115	0	0	0	0	72	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00						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)		1652	1404	1612	1696						1378	1233
Flt Permitted		1.00	1.00	0.69	1.00						0.95	1.00
Satd. Flow (perm)		1652	1404	1166	1696						1378	1233
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	108	4	11	125	0	0	0	0	78	0	8
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	108	1	11	125	0	0	0	0	0	78	6
Heavy Vehicles (%)	15%	15%	15%	12%	12%	12%	2%	2%	2%	31%	31%	31%
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		9.3	9.3	9.3	9.3						51.7	51.7
Effective Green, g (s)		9.3	9.3	9.3	9.3						51.7	51.7
Actuated g/C Ratio		0.13	0.13	0.13	0.13						0.74	0.74
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		219	187	155	225						1018	911
v/s Ratio Prot		0.07			c0.07							
v/s Ratio Perm			0.00	0.01							0.06	0.00
v/c Ratio		0.49	0.00	0.07	0.56						0.08	0.01
Uniform Delay, d1		28.2	26.3	26.6	28.4						2.5	2.4
Progression Factor		1.00	1.00	0.41	0.49						1.00	1.00
Incremental Delay, d2		1.7	0.0	0.2	2.9						0.1	0.0
Delay (s)		29.9	26.3	11.2	16.8						2.7	2.4
Level of Service		C	C	B	B						A	A
Approach Delay (s)		29.8			16.4			0.0			2.7	
Approach LOS		C			B			A			A	

Intersection Summary		
HCM Average Control Delay	17.3	HCM Level of Service B
HCM Volume to Capacity ratio	0.15	
Actuated Cycle Length (s)	70.0	Sum of lost time (s) 9.0
Intersection Capacity Utilization	31.8%	ICU Level of Service A
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Grange Road & JDLC On Ramp

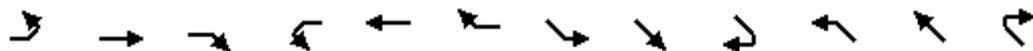
SR 21 Corridor No Build
2035 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	108	0	0	104	221	21	0	128	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	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)	1480	1557			1450	1233		1641	1468			
Flt Permitted	0.68	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1066	1557			1450	1233		1641	1468			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	117	0	0	113	240	23	0	139	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	202	0	0	40	0	0	0
Lane Group Flow (vph)	68	117	0	0	113	38	0	23	99	0	0	0
Heavy Vehicles (%)	22%	22%	22%	31%	31%	31%	10%	10%	10%	2%	2%	2%
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	11.1	11.1			11.1	11.1		49.9	49.9			
Effective Green, g (s)	11.1	11.1			11.1	11.1		49.9	49.9			
Actuated g/C Ratio	0.16	0.16			0.16	0.16		0.71	0.71			
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	169	247			230	196		1170	1046			
v/s Ratio Prot		0.08			c0.08							
v/s Ratio Perm	0.06					0.03		0.01	c0.07			
v/c Ratio	0.40	0.47			0.49	0.19		0.02	0.09			
Uniform Delay, d1	26.5	26.8			26.9	25.6		2.9	3.1			
Progression Factor	0.88	0.88			1.00	1.00		1.00	1.00			
Incremental Delay, d2	1.6	1.4			1.7	0.5		0.0	0.2			
Delay (s)	24.9	25.1			28.5	26.1		3.0	3.3			
Level of Service	C	C			C	C		A	A			
Approach Delay (s)		25.0			26.8			3.2			0.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM Average Control Delay			20.9				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.17									
Actuated Cycle Length (s)			70.0				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			31.8%				ICU Level of Service			A		
Analysis Period (min)			15									

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 17: Jimmy DeLoach Parkway & JDL Parkway Off Ramp

SR 21 Corridor No Build
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↑		↑		↑		↑			
Volume (veh/h)	0	66	429	1	737	0	2	0	384	0	0	0
Sign Control		Free			Free			Stop			Stop	
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)	0	72	466	1	801	0	2	0	417	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	801			72			839	875	801	875	875	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	801			72			839	875	801	875	875	36
tC, single (s)	4.4			4.5			7.7	6.7	7.1	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.3			2.4			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	100			100			99	100	0	0	100	100
cM capacity (veh/h)	745			1417			244	270	309	0	286	1029

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	SE 1	SE 2
Volume Total	36	36	466	802	2	417
Volume Left	0	0	0	1	2	0
Volume Right	0	0	466	0	0	417
cSH	1700	1700	1700	1417	244	309
Volume to Capacity	0.02	0.02	0.27	0.00	0.01	1.35
Queue Length 95th (ft)	0	0	0	0	1	525
Control Delay (s)	0.0	0.0	0.0	0.0	19.9	211.1
Lane LOS				A	C	F
Approach Delay (s)	0.0			0.0	210.1	
Approach LOS					F	

Intersection Summary		
Average Delay		50.1
Intersection Capacity Utilization	72.1%	ICU Level of Service C
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis
 18: Jimmy DeLoach Parkway & JDL Parkway On Ramp

SR 21 Corridor No Build
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↗	↑			↖							↕
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	64	4	0	0	4	1	0	0	0	734	0	2
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)	70	4	0	0	4	1	0	0	0	798	0	2

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total (vph)	70	4	5	800
Volume Left (vph)	70	0	0	798
Volume Right (vph)	0	0	1	2
Hadj (s)	0.64	0.14	-0.09	0.50
Departure Headway (s)	7.0	6.5	6.0	4.7
Degree Utilization, x	0.14	0.01	0.01	1.04
Capacity (veh/h)	506	544	589	776
Control Delay (s)	9.9	8.4	9.0	64.7
Approach Delay (s)	9.8		9.0	64.7
Approach LOS	A		A	F

Intersection Summary			
Delay		59.7	
HCM Level of Service		F	
Intersection Capacity Utilization	57.7%		ICU Level of Service B
Analysis Period (min)		15	

ALT 3
2035
AM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: SR 30 & SR 21

SR 21 Corridor ALT 3
2035 AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	54	711	248	59	67	191	471	77	98	2869	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0	4.0	4.5	7.0	4.0	7.0	6.4	4.0	7.0	6.4	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	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)	3367	3471	1553	3367	3471	1553	3242	4803	1495	3183	4715	1468
Flt Permitted	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 (perm)	3367	3471	1553	3367	3471	1553	3242	4803	1495	3183	4715	1468
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	59	773	270	64	73	208	512	84	107	3118	192
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	59	773	270	64	73	208	512	84	107	3118	192
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	8%	8%	8%	10%	10%	10%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.7	6.6	129.6	9.7	10.6	129.6	8.6	37.0	129.6	51.4	79.8	129.6
Effective Green, g (s)	5.7	6.6	129.6	9.7	10.6	129.6	8.6	37.0	129.6	51.4	79.8	129.6
Actuated g/C Ratio	0.04	0.05	1.00	0.07	0.08	1.00	0.07	0.29	1.00	0.40	0.62	1.00
Clearance Time (s)	4.5	7.0		4.5	7.0		7.0	6.4		7.0	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	148	177	1553	252	284	1553	215	1371	1495	1262	2903	1468
v/s Ratio Prot	0.02	0.02		c0.08	0.02		c0.06	0.11		0.03	c0.66	
v/s Ratio Perm			c0.50			0.05			0.06			0.13
v/c Ratio	0.52	0.33	0.50	1.07	0.23	0.05	0.97	0.37	0.06	0.08	1.07	0.13
Uniform Delay, d1	60.6	59.4	0.0	59.9	55.7	0.0	60.4	37.0	0.0	24.4	24.9	0.0
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	3.3	1.1	1.1	76.9	0.4	0.1	51.5	0.2	0.1	0.0	40.7	0.2
Delay (s)	63.9	60.5	1.1	136.9	56.1	0.1	111.9	37.2	0.1	24.4	65.6	0.2
Level of Service	E	E	A	F	E	A	F	D	A	C	E	A
Approach Delay (s)		10.3			99.6			52.6			60.6	
Approach LOS		B			F			D			E	
Intersection Summary												
HCM Average Control Delay			54.1			HCM Level of Service			D			
HCM Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			129.6			Sum of lost time (s)			17.9			
Intersection Capacity Utilization			91.6%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: SR 21 & I-95 Southbound On-Ramp

SR 21 Corridor ALT 3
2035 AM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		  			 	  					 	
Volume (vph)	59	665	0	0	1114	2722	0	0	0	293	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0				4.5	4.5	4.0
Lane Util. Factor	1.00	0.91			0.95	0.76				0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	1687	4848			3343	3409				1143	1143	1077
Flt Permitted	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	1687	4848			3343	3409				1143	1143	1077
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	723	0	0	1211	2959	0	0	0	318	0	53
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	64	723	0	0	1211	2959	0	0	0	159	159	53
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	10%	10%	10%	50%	50%	50%
Turn Type	Prot					Free				Prot		Free
Protected Phases	3	8			4					1	6	
Permitted Phases						Free						Free
Actuated Green, G (s)	4.8	35.4			24.6	60.0				14.1	14.1	60.0
Effective Green, g (s)	4.8	35.4			24.6	60.0				14.1	14.1	60.0
Actuated g/C Ratio	0.08	0.59			0.41	1.00				0.23	0.23	1.00
Clearance Time (s)	6.0	6.0			6.0					4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)	135	2860			1371	3409				269	269	1077
v/s Ratio Prot	0.04	0.15			0.36					0.14	0.14	
v/s Ratio Perm						c0.87						0.05
v/c Ratio	0.47	0.25			0.88	0.87				0.59	0.59	0.05
Uniform Delay, d1	26.4	5.9			16.4	0.0				20.4	20.4	0.0
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	2.6	0.0			7.1	3.3				3.5	3.5	0.1
Delay (s)	29.0	6.0			23.4	3.3				23.8	23.8	0.1
Level of Service	C	A			C	A				C	C	A
Approach Delay (s)		7.8			9.1			0.0			20.5	
Approach LOS		A			A			A			C	

Intersection Summary

HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: SR 21 & I-95 Northbound Off-Ramp

SR 21 Corridor ALT 3
2035 AM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑	↑	↑↑	↑↑		↑↑↑		↑			
Volume (vph)	0	198	46	758	649	0	526	0	78	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	6.4	5.5	6.4		4.5		4.0			
Lane Util. Factor		0.91	1.00	0.97	0.95		0.94		1.00			
Fr _t		1.00	0.85	1.00	1.00		1.00		0.85			
Fl _t Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		3679	1145	2694	2777		4757		1509			
Fl _t Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		3679	1145	2694	2777		4757		1509			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	215	50	824	705	0	572	0	85	0	0	0
RTOR Reduction (vph)	0	0	39	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	215	11	824	705	0	572	0	85	0	0	0
Heavy Vehicles (%)	41%	41%	41%	30%	30%	30%	7%	7%	7%	7%	7%	7%
Turn Type			Perm	Prot			custom		Free			
Protected Phases		8		7	4		5					
Permitted Phases			8				2		Free			
Actuated Green, G (s)		15.0	15.0	24.8	45.3		13.8		70.0			
Effective Green, g (s)		15.0	15.0	24.8	45.3		13.8		70.0			
Actuated g/C Ratio		0.21	0.21	0.35	0.65		0.20		1.00			
Clearance Time (s)		6.4	6.4	5.5	6.4		4.5					
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0					
Lane Grp Cap (vph)		788	245	954	1797		938		1509			
v/s Ratio Prot		0.06		c0.31	c0.25		c0.12					
v/s Ratio Perm			0.01						0.06			
v/c Ratio		0.27	0.04	0.86	0.39		0.61		0.06			
Uniform Delay, d ₁		22.9	21.8	21.0	5.8		25.6		0.0			
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Incremental Delay, d ₂		0.2	0.1	8.2	0.1		1.1		0.1			
Delay (s)		23.1	21.9	29.2	6.0		26.8		0.1			
Level of Service		C	C	C	A		C		A			
Approach Delay (s)		22.9			18.5			23.3			0.0	
Approach LOS		C			B			C			A	

Intersection Summary

HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

HCM Signalized Intersection Capacity Analysis
5: Hendley Road & SR 21

SR 21 Corridor ALT 3
2035 AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	6	630	68	3	6	140	109	14	37	394	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	1677	1568	1770	1863	1583	1444	2839		1347	2694	1205
Flt Permitted	0.95	0.96	1.00	0.75	1.00	1.00	0.47	1.00		0.67	1.00	1.00
Satd. Flow (perm)	1665	1677	1568	1406	1863	1583	721	2839		947	2694	1205
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	7	685	74	3	7	152	118	15	40	428	211
RTOR Reduction (vph)	0	0	260	0	0	6	0	10	0	0	0	146
Lane Group Flow (vph)	73	74	425	74	3	1	152	123	0	40	428	65
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	25%	25%	25%	34%	34%	34%
Turn Type	Split		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases	4	4			8			2			6	
Permitted Phases			4	8		8	2			6		6
Actuated Green, G (s)	19.2	19.2	19.2	5.3	5.3	5.3	16.8	16.8		16.8	16.8	16.8
Effective Green, g (s)	19.2	19.2	19.2	5.3	5.3	5.3	16.8	16.8		16.8	16.8	16.8
Actuated g/C Ratio	0.35	0.35	0.35	0.10	0.10	0.10	0.31	0.31		0.31	0.31	0.31
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	583	588	549	136	180	153	221	870		290	826	369
v/s Ratio Prot	0.04	0.04			0.00			0.04			0.16	
v/s Ratio Perm			c0.27	c0.05		0.00	c0.21			0.04		0.05
v/c Ratio	0.13	0.13	0.77	0.54	0.02	0.00	0.69	0.14		0.14	0.52	0.18
Uniform Delay, d1	12.1	12.1	15.9	23.6	22.4	22.4	16.7	13.8		13.8	15.7	13.9
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	0.1	0.1	6.7	4.4	0.0	0.0	8.6	0.1		0.2	0.6	0.2
Delay (s)	12.2	12.2	22.6	28.0	22.4	22.4	25.3	13.8		14.0	16.2	14.2
Level of Service	B	B	C	C	C	C	C	B		B	B	B
Approach Delay (s)		20.8			27.3			19.9			15.4	
Approach LOS		C			C			B			B	

Intersection Summary		
HCM Average Control Delay	19.0	HCM Level of Service B
HCM Volume to Capacity ratio	0.71	
Actuated Cycle Length (s)	54.8	Sum of lost time (s) 13.5
Intersection Capacity Utilization	64.9%	ICU Level of Service C
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: International Trade Parkway & SR 21

SR 21 Corridor ALT 3
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↕	↔	↔	↕	↕
Volume (vph)	1	0	1	176	0	54	0	208	121	203	888	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5	4.0		5.5	4.0	6.1	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1094	979		2843	1272	1480	2959	
Flt Permitted		0.86			0.76	1.00		1.00	1.00	0.45	1.00	
Satd. Flow (perm)		1515			871	979		2843	1272	698	2959	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	1	191	0	59	0	226	132	221	965	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	191	59	0	226	132	221	966	0
Heavy Vehicles (%)	1%	1%	1%	65%	65%	65%	27%	27%	27%	22%	22%	22%
Turn Type	Perm			Perm		Free	Perm		Free	pm+pt		
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		Free	6		Free		2	
Actuated Green, G (s)		11.5			11.5	50.0		16.8	50.0	27.5	27.5	
Effective Green, g (s)		11.5			11.5	50.0		16.8	50.0	27.5	27.5	
Actuated g/C Ratio		0.23			0.23	1.00		0.34	1.00	0.55	0.55	
Clearance Time (s)		5.5			5.5			5.5		6.1	5.5	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		348			200	979		955	1272	456	1627	
v/s Ratio Prot								0.08		0.04	c0.33	
v/s Ratio Perm		0.00			c0.22	0.06			0.10	0.22		
v/c Ratio		0.00			0.95	0.06		0.24	0.10	0.48	0.59	
Uniform Delay, d1		14.8			19.0	0.0		12.0	0.0	6.4	7.5	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			50.4	0.1		0.6	0.2	0.8	1.6	
Delay (s)		14.8			69.4	0.1		12.6	0.2	7.3	9.1	
Level of Service		B			E	A		B	A	A	A	
Approach Delay (s)		14.8			53.0			8.0			8.8	
Approach LOS		B			D			A			A	

Intersection Summary		
HCM Average Control Delay	14.8	HCM Level of Service B
HCM Volume to Capacity ratio	0.70	
Actuated Cycle Length (s)	50.0	Sum of lost time (s) 11.0
Intersection Capacity Utilization	58.1%	ICU Level of Service B
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Jimmy DeLoach Parkway & SR 21

SR 21 Corridor ALT 3
2035 AM



Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	226	154	0	215	50	548	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	4.0		7.5	4.0	6.5	7.5
Lane Util. Factor	0.97	1.00		0.95	1.00	1.00	0.95
Fr _t	1.00	0.85		1.00	0.85	1.00	1.00
Fl _t Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	2501	1154		3471	1553	1467	2935
Fl _t Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	2501	1154		3471	1553	1467	2935
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	167	0	234	54	596	687
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	246	167	0	234	54	596	687
Heavy Vehicles (%)	40%	40%	4%	4%	4%	23%	23%
Turn Type		Free	Perm		Free	Prot	
Protected Phases	4			2		1	6
Permitted Phases		Free	2		Free		
Actuated Green, G (s)	11.9	89.2		18.0	89.2	37.3	61.8
Effective Green, g (s)	11.9	89.2		18.0	89.2	37.3	61.8
Actuated g/C Ratio	0.13	1.00		0.20	1.00	0.42	0.69
Clearance Time (s)	8.0			7.5		6.5	7.5
Vehicle Extension (s)	3.0			3.0		3.0	3.0
Lane Grp Cap (vph)	334	1154		700	1553	613	2033
v/s Ratio Prot	c0.10			0.07		c0.41	c0.23
v/s Ratio Perm		0.14			0.03		
v/c Ratio	0.74	0.14		0.33	0.03	0.97	0.34
Uniform Delay, d ₁	37.1	0.0		30.5	0.0	25.4	5.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d ₂	8.2	0.3		0.3	0.0	29.3	0.1
Delay (s)	45.3	0.3		30.8	0.0	54.7	5.6
Level of Service	D	A		C	A	D	A
Approach Delay (s)	27.1			25.0			28.4
Approach LOS	C			C			C

Intersection Summary

HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Bonnybridge Road (SR 30) & SR 21

SR 21 Corridor ALT 3
2035 AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	71	61	204	58	198	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.5	6.5	5.0	6.5
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)	1626	1455	3471	1553	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.50	1.00
Satd. Flow (perm)	1626	1455	3471	1553	916	3471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	66	222	63	215	717
RTOR Reduction (vph)	0	0	0	39	0	0
Lane Group Flow (vph)	77	66	222	24	215	717
Heavy Vehicles (%)	11%	11%	4%	4%	4%	4%
Turn Type		Free		Perm	pm+pt	
Protected Phases	8		6		5	2
Permitted Phases		Free		6	2	
Actuated Green, G (s)	8.0	58.3	22.5	22.5	37.8	37.8
Effective Green, g (s)	8.0	58.3	22.5	22.5	37.8	37.8
Actuated g/C Ratio	0.14	1.00	0.39	0.39	0.65	0.65
Clearance Time (s)	6.0		6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	223	1455	1340	599	739	2250
v/s Ratio Prot	c0.05		0.06		0.05	c0.21
v/s Ratio Perm		0.05		0.02	0.14	
v/c Ratio	0.35	0.05	0.17	0.04	0.29	0.32
Uniform Delay, d1	22.8	0.0	11.7	11.2	4.4	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.1	0.0	0.2	0.1
Delay (s)	23.7	0.1	11.8	11.2	4.6	4.6
Level of Service	C	A	B	B	A	A
Approach Delay (s)	12.8		11.7			4.6
Approach LOS	B		B			A

Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	12.5
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Gulfstream Road & SR 21

SR 21 Corridor ALT 3
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	178	559	61	298	40	417	364	30	142	871	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0
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	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)	1736	1827	1553	1703	1792	1524	1752	3505	1568	1752	3505	1568
Flt Permitted	0.32	1.00	1.00	0.59	1.00	1.00	0.12	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	589	1827	1553	1064	1792	1524	214	3505	1568	956	3505	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	193	608	66	324	43	453	396	33	154	947	358
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	117	193	608	66	324	43	453	396	33	154	947	358
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		Free	Perm		Free	pm+pt		Free	pm+pt		Free
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2		Free	6		Free
Actuated Green, G (s)	18.9	18.9	87.7	18.9	18.9	87.7	54.8	39.8	87.7	35.4	27.4	87.7
Effective Green, g (s)	18.9	18.9	87.7	18.9	18.9	87.7	54.8	39.8	87.7	35.4	27.4	87.7
Actuated g/C Ratio	0.22	0.22	1.00	0.22	0.22	1.00	0.62	0.45	1.00	0.40	0.31	1.00
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)	127	394	1553	229	386	1524	491	1591	1568	458	1095	1568
v/s Ratio Prot		0.11			0.18		c0.21	0.11		0.03	0.27	
v/s Ratio Perm	c0.20		0.39	0.06		0.03	c0.36		0.02	0.10		0.23
v/c Ratio	0.92	0.49	0.39	0.29	0.84	0.03	0.92	0.25	0.02	0.34	0.86	0.23
Uniform Delay, d1	33.7	30.2	0.0	28.8	32.9	0.0	23.8	14.7	0.0	17.1	28.4	0.0
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	56.0	1.0	0.7	0.7	14.7	0.0	23.0	0.1	0.0	0.4	7.3	0.3
Delay (s)	89.7	31.1	0.7	29.5	47.7	0.0	46.8	14.8	0.0	17.5	35.7	0.3
Level of Service	F	C	A	C	D	A	D	B	A	B	D	A
Approach Delay (s)		18.5			40.2			30.7			25.1	
Approach LOS		B			D			C			C	

Intersection Summary

HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	87.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
10: Grange Road & SR 21

SR 21 Corridor ALT 3
2035 AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	32	41	768	27	125	1361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	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)	1703	1524	3471	1553	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.34	1.00
Satd. Flow (perm)	1703	1524	3471	1553	617	3471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	35	45	835	29	136	1479
RTOR Reduction (vph)	0	41	0	8	0	0
Lane Group Flow (vph)	35	4	835	21	136	1479
Heavy Vehicles (%)	6%	6%	4%	4%	4%	4%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	3.8	3.8	35.8	35.8	35.8	35.8
Effective Green, g (s)	3.8	3.8	35.8	35.8	35.8	35.8
Actuated g/C Ratio	0.08	0.08	0.74	0.74	0.74	0.74
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	119	2557	1144	454	2557
v/s Ratio Prot	c0.02		0.24			c0.43
v/s Ratio Perm		0.00		0.01	0.22	
v/c Ratio	0.26	0.03	0.33	0.02	0.30	0.58
Uniform Delay, d1	21.1	20.7	2.2	1.7	2.2	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.1	0.0	0.4	0.3
Delay (s)	22.1	20.8	2.3	1.7	2.5	3.3
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.4		2.3			3.2
Approach LOS	C		A			A

Intersection Summary

HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 11: Bourne Avenue (SR 307) & SR 21

SR 21 Corridor ALT 3
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Volume (vph)	151	466	304	113	617	92	193	279	31	191	1013	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	4.0	8.0	8.0	4.0	8.5	8.0	4.0	8.5	8.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	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)	2870	2959	1324	2673	2756	1233	3400	5036	1568	3433	5085	1583
Flt Permitted	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 (perm)	2870	2959	1324	2673	2756	1233	3400	5036	1568	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	164	507	330	123	671	100	210	303	34	208	1101	205
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	164	507	330	123	671	100	210	303	34	208	1101	205
Heavy Vehicles (%)	22%	22%	22%	31%	31%	31%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.0	27.9	110.0	15.0	27.9	110.0	8.0	20.3	110.0	14.3	26.6	110.0
Effective Green, g (s)	15.0	27.9	110.0	15.0	27.9	110.0	8.0	20.3	110.0	14.3	26.6	110.0
Actuated g/C Ratio	0.14	0.25	1.00	0.14	0.25	1.00	0.07	0.18	1.00	0.13	0.24	1.00
Clearance Time (s)	8.0	8.0		8.0	8.0		8.5	8.0		8.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	391	751	1324	365	699	1233	247	929	1568	446	1230	1583
v/s Ratio Prot	0.06	c0.17		0.05	c0.24		c0.06	0.06		0.06	c0.22	
v/s Ratio Perm			0.25			0.08			0.02			0.13
v/c Ratio	0.42	0.68	0.25	0.34	0.96	0.08	0.85	0.33	0.02	0.47	0.90	0.13
Uniform Delay, d1	43.5	37.0	0.0	43.0	40.5	0.0	50.4	38.9	0.0	44.3	40.4	0.0
Progression Factor	1.00	1.00	1.00	1.22	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	2.4	0.5	0.5	22.9	0.1	23.3	0.9	0.0	0.8	10.3	0.2
Delay (s)	44.2	39.4	0.5	53.1	61.0	0.1	73.8	39.9	0.0	45.1	50.6	0.2
Level of Service	D	D	A	D	E	A	E	D	A	D	D	A
Approach Delay (s)		27.3			53.1			50.4			43.0	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	42.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
12: Brampton Road & SR 21

SR 21 Corridor ALT 3
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖		↗		↑↑↑		↖	↑↑↑	
Volume (vph)	1	1	1	74	0	48	0	747	63	69	709	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Lane Util. Factor		1.00	1.00	1.00		1.00		0.91		1.00	0.91	
Frt		1.00	0.85	1.00		0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1817	1583	1671		1495		4978		1770	5085	
Flt Permitted		0.98	1.00	0.76		1.00		1.00		0.31	1.00	
Satd. Flow (perm)		1817	1583	1331		1495		4978		577	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	80	0	52	0	812	68	75	771	0
RTOR Reduction (vph)	0	0	1	0	0	46	0	9	0	0	0	0
Lane Group Flow (vph)	0	2	0	80	0	6	0	871	0	75	771	0
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	custom		custom				pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)		8.7	8.7	8.7		8.7		44.4		55.3	53.3	
Effective Green, g (s)		8.7	8.7	8.7		8.7		44.4		55.3	53.3	
Actuated g/C Ratio		0.12	0.12	0.12		0.12		0.59		0.74	0.71	
Clearance Time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Vehicle Extension (s)		3.0	3.0	3.0		3.0		5.0		3.0	5.0	
Lane Grp Cap (vph)		211	184	154		173		2947		495	3614	
v/s Ratio Prot								c0.18		0.01	c0.15	
v/s Ratio Perm		0.00	0.00	c0.06		0.00				0.10		
v/c Ratio		0.01	0.00	0.52		0.03		0.30		0.15	0.21	
Uniform Delay, d1		29.3	29.3	31.2		29.4		7.6		3.0	3.7	
Progression Factor		1.00	1.00	1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0	2.9		0.1		0.3		0.1	0.1	
Delay (s)		29.4	29.3	34.1		29.5		7.8		3.2	3.8	
Level of Service		C	C	C		C		A		A	A	
Approach Delay (s)		29.3			32.3			7.8			3.8	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Minus Avenue & SR 21

SR 21 Corridor ALT 3
2035 AM



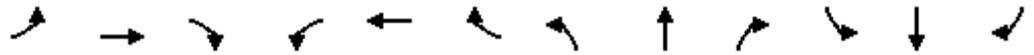
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↑↑↑		↗	↑↑↑	
Volume (vph)	60	10	169	174	10	48	43	702	30	141	456	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frt		0.90			0.97		1.00	0.99		1.00	0.96	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1632			1998		1787	5104		1752	4817	
Flt Permitted		0.86			0.61		0.23	1.00		0.34	1.00	
Satd. Flow (perm)		1421			1260		432	5104		625	4817	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	11	184	189	11	52	47	763	33	153	496	202
RTOR Reduction (vph)	0	115	0	0	15	0	0	6	0	0	91	0
Lane Group Flow (vph)	0	145	0	0	237	0	47	790	0	153	607	0
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Turn Type	Perm			pm+pt			pm+pt			pm+pt		
Protected Phases		8		7	4		5	2		1	6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		19.8			19.8		21.9	21.9		26.8	26.8	
Effective Green, g (s)		19.8			19.8		21.9	21.9		26.8	26.8	
Actuated g/C Ratio		0.28			0.28		0.31	0.31		0.38	0.38	
Clearance Time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		402			356		201	1597		373	1844	
v/s Ratio Prot							0.01	c0.15		c0.05	0.13	
v/s Ratio Perm		0.10			c0.19		0.06			0.11		
v/c Ratio		0.36			0.67		0.23	0.49		0.41	0.33	
Uniform Delay, d1		20.0			22.2		17.4	19.6		17.7	15.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			4.6		0.6	1.1		0.7	0.5	
Delay (s)		20.6			26.8		18.0	20.6		18.4	15.7	
Level of Service		C			C		B	C		B	B	
Approach Delay (s)		20.6			26.8			20.5			16.2	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 14: Bourne Avenue (SR 307) &

SR 21 Corridor ALT 3
 2035 AM



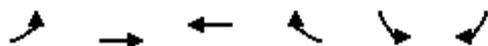
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↘	↘	↗↗	↘		↗	↘		↗	↘
Volume (vph)	3	683	2	2	630	2	2	1	2	33	1	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	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		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1337	2674	1196	1378	2756	1233		1785	1568		1759	1568
Flt Permitted	0.32	1.00	1.00	0.29	1.00	1.00		0.94	1.00		0.83	1.00
Satd. Flow (perm)	451	2674	1196	417	2756	1233		1731	1568		1531	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	742	2	2	685	2	2	1	2	36	1	207
RTOR Reduction (vph)	0	0	1	0	0	1	0	0	1	0	0	100
Lane Group Flow (vph)	3	742	1	2	685	1	0	3	1	0	37	107
Heavy Vehicles (%)	35%	35%	35%	31%	31%	31%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	21.5	21.5	21.5	21.5	21.5	21.5		24.5	24.5		24.5	24.5
Effective Green, g (s)	21.5	21.5	21.5	21.5	21.5	21.5		24.5	24.5		24.5	24.5
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39		0.45	0.45		0.45	0.45
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	176	1045	468	163	1077	482		771	698		682	698
v/s Ratio Prot		c0.28			0.25							
v/s Ratio Perm	0.01		0.00	0.00		0.00		0.00	0.00		0.02	c0.07
v/c Ratio	0.02	0.71	0.00	0.01	0.64	0.00		0.00	0.00		0.05	0.15
Uniform Delay, d1	10.3	14.1	10.2	10.3	13.6	10.2		8.5	8.5		8.7	9.1
Progression Factor	1.62	1.67	2.12	0.89	0.88	0.92		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	1.9	0.0	0.0	1.0	0.0		0.0	0.0		0.2	0.5
Delay (s)	16.7	25.4	21.7	9.1	13.0	9.4		8.5	8.5		8.8	9.5
Level of Service	B	C	C	A	B	A		A	A		A	A
Approach Delay (s)		25.4			13.0			8.5			9.4	
Approach LOS		C			B			A			A	

Intersection Summary		
HCM Average Control Delay	18.0	HCM Level of Service B
HCM Volume to Capacity ratio	0.41	
Actuated Cycle Length (s)	55.0	Sum of lost time (s) 9.0
Intersection Capacity Utilization	43.8%	ICU Level of Service A
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 15: Bourne Avenue (SR 307) & JDL Connector

SR 21 Corridor ALT 3
 2035 AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	105	613	159	213	672	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2537	2616	2087	934	2449	1129
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2537	2616	2087	934	2449	1129
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	666	173	232	730	516
RTOR Reduction (vph)	0	0	0	0	0	290
Lane Group Flow (vph)	114	666	173	232	730	226
Heavy Vehicles (%)	38%	38%	73%	73%	43%	43%
Turn Type	Prot			Free		Perm
Protected Phases	7	4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)	6.1	21.9	11.3	55.0	24.1	24.1
Effective Green, g (s)	6.1	21.9	11.3	55.0	24.1	24.1
Actuated g/C Ratio	0.11	0.40	0.21	1.00	0.44	0.44
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	281	1042	429	934	1073	495
v/s Ratio Prot	0.04	c0.25	0.08		c0.30	
v/s Ratio Perm				0.25		0.20
v/c Ratio	0.41	0.64	0.40	0.25	0.68	0.46
Uniform Delay, d1	22.8	13.4	18.9	0.0	12.4	10.9
Progression Factor	0.51	0.15	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.1	0.6	0.6	3.5	3.0
Delay (s)	12.4	3.1	19.6	0.6	15.9	13.9
Level of Service	B	A	B	A	B	B
Approach Delay (s)		4.4	8.7		15.0	
Approach LOS		A	A		B	

Intersection Summary

HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Grange Road & JDLC on Off Ramp

SR 21 Corridor ALT 3
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Volume (vph)	0	121	31	13	49	0	0	0	0	48	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00						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)		1638	1392	1671	1759						1752	1568
Flt Permitted		1.00	1.00	0.67	1.00						0.95	1.00
Satd. Flow (perm)		1638	1392	1183	1759						1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	132	34	14	53	0	0	0	0	52	0	26
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	132	6	14	53	0	0	0	0	0	52	17
Heavy Vehicles (%)	16%	16%	16%	8%	8%	8%	2%	2%	2%	3%	3%	3%
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		8.2	8.2	8.2	8.2						32.8	32.8
Effective Green, g (s)		8.2	8.2	8.2	8.2						32.8	32.8
Actuated g/C Ratio		0.16	0.16	0.16	0.16						0.66	0.66
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		269	228	194	288						1149	1029
v/s Ratio Prot		c0.08			0.03							
v/s Ratio Perm			0.00	0.01							0.03	0.01
v/c Ratio		0.49	0.02	0.07	0.18						0.05	0.02
Uniform Delay, d1		19.0	17.5	17.7	18.0						3.0	3.0
Progression Factor		1.00	1.00	0.44	0.45						1.00	1.00
Incremental Delay, d2		1.4	0.0	0.2	0.3						0.1	0.0
Delay (s)		20.4	17.6	7.9	8.5						3.1	3.0
Level of Service		C	B	A	A						A	A
Approach Delay (s)		19.8			8.4			0.0			3.1	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
17: Grange Road & JDLC On Ramp

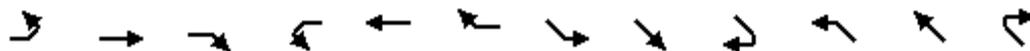
SR 21 Corridor ALT 3
2035 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	138	0	0	55	80	7	0	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	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)	1752	1845			1696	1442		1736	1553			
Flt Permitted	0.72	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1324	1845			1696	1442		1736	1553			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	150	0	0	60	87	8	0	25	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	73	0	0	9	0	0	0
Lane Group Flow (vph)	34	150	0	0	60	14	0	8	16	0	0	0
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	2%	2%	2%
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	8.2	8.2			8.2	8.2		32.8	32.8			
Effective Green, g (s)	8.2	8.2			8.2	8.2		32.8	32.8			
Actuated g/C Ratio	0.16	0.16			0.16	0.16		0.66	0.66			
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	217	303			278	236		1139	1019			
v/s Ratio Prot		c0.08			0.04							
v/s Ratio Perm	0.03					0.01		0.00	c0.01			
v/c Ratio	0.16	0.50			0.22	0.06		0.01	0.02			
Uniform Delay, d1	17.9	19.0			18.1	17.6		3.0	3.0			
Progression Factor	0.48	0.52			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.3	1.3			0.4	0.1		0.0	0.0			
Delay (s)	8.9	11.2			18.5	17.8		3.0	3.0			
Level of Service	A	B			B	B		A	A			
Approach Delay (s)		10.8			18.1			3.0			0.0	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM Average Control Delay			13.0				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.11									
Actuated Cycle Length (s)			50.0				Sum of lost time (s)				9.0	
Intersection Capacity Utilization			24.3%				ICU Level of Service				A	
Analysis Period (min)			15									

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 18: Jimmy DeLoach Parkway & JDL Parkway Off Ramp

SR 21 Corridor ALT 3
 2035 AM



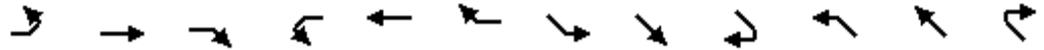
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↑		↑		↑		↑			
Volume (veh/h)	0	113	485	2	86	0	2	0	294	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	123	527	2	93	0	2	0	320	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	93			123			159	221	93	221	221	61
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	93			123			159	221	93	221	221	61
tC, single (s)	4.9			5.5			7.8	6.8	7.2	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.6			2.9			3.7	4.2	3.5	3.5	4.0	3.3
p0 queue free %	100			100			100	100	65	100	100	100
cM capacity (veh/h)	1255			1072			753	644	902	462	675	991

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	SE 1	SE 2
Volume Total	61	61	527	96	2	320
Volume Left	0	0	0	2	2	0
Volume Right	0	0	527	0	0	320
cSH	1700	1700	1700	1072	753	902
Volume to Capacity	0.04	0.04	0.31	0.00	0.00	0.35
Queue Length 95th (ft)	0	0	0	0	0	40
Control Delay (s)	0.0	0.0	0.0	0.2	9.8	11.2
Lane LOS				A	A	B
Approach Delay (s)	0.0			0.2	11.2	
Approach LOS					B	

Intersection Summary		
Average Delay		3.4
Intersection Capacity Utilization	41.3%	ICU Level of Service
Analysis Period (min)		15
A		

HCM Unsignalized Intersection Capacity Analysis
 19: Jimmy DeLoach Parkway & JDL Parkway On Ramp

SR 21 Corridor ALT 3
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	111	4	0	0	3	0	0	0	0	83	0	1
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)	121	4	0	0	3	0	0	0	0	90	0	1

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total (vph)	121	4	3	91
Volume Left (vph)	121	0	0	90
Volume Right (vph)	0	0	0	1
Hadj (s)	0.77	0.27	0.03	1.40
Departure Headway (s)	5.6	5.1	4.5	5.7
Degree Utilization, x	0.19	0.01	0.00	0.14
Capacity (veh/h)	636	692	779	617
Control Delay (s)	8.6	6.9	7.5	9.6
Approach Delay (s)	8.6		7.5	9.6
Approach LOS	A		A	A

Intersection Summary			
Delay		9.0	
HCM Level of Service		A	
Intersection Capacity Utilization	24.1%		ICU Level of Service A
Analysis Period (min)		15	

ALT 3
2035
PM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: SR 30 & SR 21

SR 21 Corridor ALT 3
2035 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Volume (vph)	280	40	200	100	30	318	724	1789	293	36	1051	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0	4.0	4.5	7.0	4.0	7.0	6.4	4.0	7.0	6.4	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	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)	3367	3471	1553	3367	3471	1553	3242	4803	1495	3183	4715	1468
Flt Permitted	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 (perm)	3367	3471	1553	3367	3471	1553	3242	4803	1495	3183	4715	1468
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	43	217	109	33	346	787	1945	318	39	1142	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	304	43	217	109	33	346	787	1945	318	39	1142	71
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	8%	8%	8%	10%	10%	10%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.7	6.5	130.0	13.1	4.9	130.0	34.1	79.6	130.0	5.9	51.4	130.0
Effective Green, g (s)	14.7	6.5	130.0	13.1	4.9	130.0	34.1	79.6	130.0	5.9	51.4	130.0
Actuated g/C Ratio	0.11	0.05	1.00	0.10	0.04	1.00	0.26	0.61	1.00	0.05	0.40	1.00
Clearance Time (s)	4.5	7.0		4.5	7.0		7.0	6.4		7.0	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	381	174	1553	339	131	1553	850	2941	1495	144	1864	1468
v/s Ratio Prot	c0.09	0.01		c0.03	0.01		c0.24	c0.40		0.01	c0.24	
v/s Ratio Perm			0.14			0.22			0.21			0.05
v/c Ratio	0.80	0.25	0.14	0.32	0.25	0.22	0.93	0.66	0.21	0.27	0.61	0.05
Uniform Delay, d1	56.2	59.4	0.0	54.3	60.8	0.0	46.7	16.4	0.0	60.0	31.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.69	0.36	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.1	0.7	0.2	0.6	1.0	0.3	10.6	0.7	0.2	1.0	1.5	0.1
Delay (s)	67.3	60.1	0.2	54.9	61.8	0.3	42.8	6.6	0.2	61.0	32.9	0.1
Level of Service	E	E	A	D	E	A	D	A	A	E	C	A
Approach Delay (s)		40.9			16.7			15.2			31.9	
Approach LOS		D			B			B			C	

Intersection Summary

HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.3
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: SR 21 & I-95 Southbound On-Ramp

SR 21 Corridor ALT 3
2035 PM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		  			 	  						
Volume (vph)	145	2779	0	0	400	978	0	0	0	150	0	206
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	4.0				4.5	4.5	4.0
Lane Util. Factor	1.00	0.91			0.95	0.76				0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	1687	4848			3343	3409				1143	1143	1077
Flt Permitted	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	1687	4848			3343	3409				1143	1143	1077
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	3021	0	0	435	1063	0	0	0	163	0	224
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	158	3021	0	0	435	1063	0	0	0	81	82	224
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	50%	50%	50%
Turn Type	Prot					Free				Prot		Free
Protected Phases	3	8			4					1	6	
Permitted Phases						Free						Free
Actuated Green, G (s)	16.8	99.0			76.2	130.0				20.5	20.5	130.0
Effective Green, g (s)	16.8	99.0			76.2	130.0				20.5	20.5	130.0
Actuated g/C Ratio	0.13	0.76			0.59	1.00				0.16	0.16	1.00
Clearance Time (s)	6.0	6.0			6.0					4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)	218	3692			1960	3409				180	180	1077
v/s Ratio Prot	0.09	c0.62			0.13					0.07	c0.07	
v/s Ratio Perm						0.31						0.21
v/c Ratio	0.72	0.82			0.22	0.31				0.45	0.46	0.21
Uniform Delay, d1	54.4	9.8			12.8	0.0				49.6	49.7	0.0
Progression Factor	1.25	0.10			0.71	1.00				1.00	1.00	1.00
Incremental Delay, d2	4.2	0.5			0.1	0.2				1.8	1.8	0.4
Delay (s)	72.3	1.5			9.1	0.2				51.4	51.5	0.4
Level of Service	E	A			A	A				D	D	A
Approach Delay (s)		5.0			2.8			0.0			21.9	
Approach LOS		A			A			A			C	

Intersection Summary

HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: SR 21 & I-95 Northbound Off-Ramp

SR 21 Corridor ALT 3
2035 PM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑	↑	↑↑	↑↑		↑↑↑		↑			
Volume (vph)	0	487	112	272	278	0	2437	0	33	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	6.4	5.5	6.4		4.5		4.0			
Lane Util. Factor		0.91	1.00	0.97	0.95		0.94		1.00			
Fr _t		1.00	0.85	1.00	1.00		1.00		0.85			
Fl _t Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		3679	1145	2694	2777		4757		1509			
Fl _t Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		3679	1145	2694	2777		4757		1509			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	529	122	296	302	0	2649	0	36	0	0	0
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	529	19	296	302	0	2649	0	36	0	0	0
Heavy Vehicles (%)	41%	41%	41%	30%	30%	30%	7%	7%	7%	7%	7%	7%
Turn Type			Perm	Prot			Prot		Free			
Protected Phases		8		7	4		5					
Permitted Phases			8						Free			
Actuated Green, G (s)		20.4	20.4	16.2	42.1		77.0		130.0			
Effective Green, g (s)		20.4	20.4	16.2	42.1		77.0		130.0			
Actuated g/C Ratio		0.16	0.16	0.12	0.32		0.59		1.00			
Clearance Time (s)		6.4	6.4	5.5	6.4		4.5					
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0					
Lane Grp Cap (vph)		577	180	336	899		2818		1509			
v/s Ratio Prot		c0.14		c0.11	0.11		c0.56					
v/s Ratio Perm			0.02						0.02			
v/c Ratio		0.92	0.11	0.88	0.34		0.94		0.02			
Uniform Delay, d ₁		54.0	47.0	56.0	33.3		24.4		0.0			
Progression Factor		1.00	1.00	0.87	0.47		1.00		1.00			
Incremental Delay, d ₂		19.3	0.3	22.1	0.2		7.8		0.0			
Delay (s)		73.2	47.2	70.5	15.9		32.1		0.0			
Level of Service		E	D	E	B		C		A			
Approach Delay (s)		68.4			42.9			31.7			0.0	
Approach LOS		E			D			C			A	
Intersection Summary												
HCM Average Control Delay			39.5				HCM Level of Service		D			
HCM Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)		16.4			
Intersection Capacity Utilization			85.4%				ICU Level of Service		E			
Analysis Period (min)			15									

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

HCM Signalized Intersection Capacity Analysis
5: Hendley Road & SR 21

SR 21 Corridor ALT 3
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	285	6	192	27	3	20	512	293	48	17	174	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	1672	1568	1770	1863	1583	1444	2827		1347	2694	1205
Flt Permitted	0.95	0.95	1.00	0.77	1.00	1.00	0.63	1.00		0.53	1.00	1.00
Satd. Flow (perm)	1665	1672	1568	1433	1863	1583	962	2827		754	2694	1205
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	310	7	209	29	3	22	557	318	52	18	189	84
RTOR Reduction (vph)	0	0	176	0	0	21	0	11	0	0	0	60
Lane Group Flow (vph)	158	159	33	29	3	1	557	359	0	18	189	24
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	25%	25%	25%	34%	34%	34%
Turn Type	Split		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases	4	4			8		5	2			6	
Permitted Phases			4	8		8	2			6		6
Actuated Green, G (s)	12.5	12.5	12.5	5.2	5.2	5.2	48.8	48.8		23.3	23.3	23.3
Effective Green, g (s)	12.5	12.5	12.5	5.2	5.2	5.2	48.8	48.8		23.3	23.3	23.3
Actuated g/C Ratio	0.16	0.16	0.16	0.07	0.07	0.07	0.61	0.61		0.29	0.29	0.29
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	260	261	245	93	121	103	713	1724		220	785	351
v/s Ratio Prot	0.09	c0.10			0.00		c0.20	0.13			0.07	
v/s Ratio Perm			0.02	c0.02		0.00	c0.27			0.02		0.02
v/c Ratio	0.61	0.61	0.13	0.31	0.02	0.01	0.78	0.21		0.08	0.24	0.07
Uniform Delay, d1	31.5	31.5	29.1	35.7	35.0	35.0	12.2	7.0		20.6	21.6	20.5
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	4.0	4.0	0.2	1.9	0.1	0.1	5.6	0.3		0.7	0.7	0.4
Delay (s)	35.4	35.5	29.3	37.6	35.1	35.1	17.7	7.2		21.3	22.3	20.9
Level of Service	D	D	C	D	D	D	B	A		C	C	C
Approach Delay (s)		33.0			36.4			13.5			21.9	
Approach LOS		C			D			B			C	

Intersection Summary		
HCM Average Control Delay	21.3	HCM Level of Service C
HCM Volume to Capacity ratio	0.70	
Actuated Cycle Length (s)	80.0	Sum of lost time (s) 13.5
Intersection Capacity Utilization	59.1%	ICU Level of Service B
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: International Trade Parkway & SR 21

SR 21 Corridor ALT 3
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕	↗	↖	↕	↕
Volume (vph)	1	0	1	66	0	111	1	741	227	56	337	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5	4.0	5.5	5.5	4.0	6.1	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1094	979	1421	2843	1272	1480	2959	
Flt Permitted		0.88			1.00	1.00	0.53	1.00	1.00	0.28	1.00	
Satd. Flow (perm)		1548			1152	979	798	2843	1272	428	2959	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	1	72	0	121	1	805	247	61	366	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	72	121	1	805	247	61	366	0
Heavy Vehicles (%)	1%	1%	1%	65%	65%	65%	27%	27%	27%	22%	22%	22%
Turn Type	Perm			Perm		Free	Perm		Free	pm+pt		
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		Free	6		Free		2	
Actuated Green, G (s)		3.4			3.4	52.2	29.8	29.8	52.2	37.8	37.8	
Effective Green, g (s)		3.4			3.4	52.2	29.8	29.8	52.2	37.8	37.8	
Actuated g/C Ratio		0.07			0.07	1.00	0.57	0.57	1.00	0.72	0.72	
Clearance Time (s)		5.5			5.5		5.5	5.5		6.1	5.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		101			75	979	456	1623	1272	348	2143	
v/s Ratio Prot								c0.28		0.01	0.12	
v/s Ratio Perm		0.00			c0.06	0.12	0.00		c0.19	0.12		
v/c Ratio		0.01			0.96	0.12	0.00	0.50	0.19	0.18	0.17	
Uniform Delay, d1		22.8			24.3	0.0	4.8	6.7	0.0	2.7	2.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			89.1	0.3	0.0	1.1	0.3	0.2	0.2	
Delay (s)		22.9			113.4	0.3	4.8	7.8	0.3	2.9	2.4	
Level of Service		C			F	A	A	A	A	A	A	
Approach Delay (s)		22.9			42.5			6.0			2.5	
Approach LOS		C			D			A			A	

Intersection Summary		
HCM Average Control Delay	9.4	HCM Level of Service
HCM Volume to Capacity ratio	0.48	A
Actuated Cycle Length (s)	52.2	Sum of lost time (s)
Intersection Capacity Utilization	44.5%	11.0
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Jimmy DeLoach Parkway & SR 21

SR 21 Corridor ALT 3
2035 PM



Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	122	491	0	594	137	182	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	4.0		7.5	4.0	6.5	7.5
Lane Util. Factor	0.97	1.00		0.95	1.00	1.00	0.95
Fr _t	1.00	0.85		1.00	0.85	1.00	1.00
Fl _t Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	2501	1154		3471	1553	1467	2935
Fl _t Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	2501	1154		3471	1553	1467	2935
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	534	0	646	149	198	289
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	133	534	0	646	149	198	289
Heavy Vehicles (%)	40%	40%	4%	4%	4%	23%	23%
Turn Type		Free	Perm		Free	Prot	
Protected Phases	4			2		1	6
Permitted Phases		Free	2		Free		
Actuated Green, G (s)	7.0	59.5		19.1	59.5	11.4	37.0
Effective Green, g (s)	7.0	59.5		19.1	59.5	11.4	37.0
Actuated g/C Ratio	0.12	1.00		0.32	1.00	0.19	0.62
Clearance Time (s)	8.0			7.5		6.5	7.5
Vehicle Extension (s)	3.0			3.0		3.0	3.0
Lane Grp Cap (vph)	294	1154		1114	1553	281	1825
v/s Ratio Prot	0.05			0.19		0.13	0.10
v/s Ratio Perm		c0.46			0.10		
v/c Ratio	0.45	0.46		0.58	0.10	0.70	0.16
Uniform Delay, d ₁	24.5	0.0		16.9	0.0	22.5	4.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d ₂	1.1	1.3		0.7	0.1	7.8	0.0
Delay (s)	25.6	1.3		17.6	0.1	30.3	4.8
Level of Service	C	A		B	A	C	A
Approach Delay (s)	6.2			14.3			15.1
Approach LOS	A			B			B

Intersection Summary

HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	0.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 8: Bonnybridge Road (SR 30) & SR 21

SR 21 Corridor ALT 3
 2035 PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	50	144	587	125	69	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.5	6.5	5.0	6.5
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)	1626	1455	3471	1553	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.34	1.00
Satd. Flow (perm)	1626	1455	3471	1553	628	3471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	157	638	136	75	347
RTOR Reduction (vph)	0	0	0	69	0	0
Lane Group Flow (vph)	54	157	638	67	75	347
Heavy Vehicles (%)	11%	11%	4%	4%	4%	4%
Turn Type		Free		Perm	pm+pt	
Protected Phases	8		6		5	2
Permitted Phases		Free		6	2	
Actuated Green, G (s)	7.8	59.7	29.2	29.2	39.4	39.4
Effective Green, g (s)	7.8	59.7	29.2	29.2	39.4	39.4
Actuated g/C Ratio	0.13	1.00	0.49	0.49	0.66	0.66
Clearance Time (s)	6.0		6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	212	1455	1698	760	511	2291
v/s Ratio Prot	c0.03		c0.18		0.01	c0.10
v/s Ratio Perm		0.11		0.04	0.08	
v/c Ratio	0.25	0.11	0.38	0.09	0.15	0.15
Uniform Delay, d1	23.3	0.0	9.5	8.1	3.9	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.1	0.0	0.1	0.0
Delay (s)	24.0	0.1	9.7	8.2	4.0	3.9
Level of Service	C	A	A	A	A	A
Approach Delay (s)	6.2		9.4			3.9
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	19.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Gulfstream Road & SR 21

SR 21 Corridor ALT 3
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	317	173	547	29	135	151	543	1012	95	72	391	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0
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	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)	1736	1827	1553	1703	1792	1524	1752	3505	1568	1752	3505	1568
Flt Permitted	0.66	1.00	1.00	0.62	1.00	1.00	0.37	1.00	1.00	0.20	1.00	1.00
Satd. Flow (perm)	1212	1827	1553	1114	1792	1524	681	3505	1568	367	3505	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	345	188	595	32	147	164	590	1100	103	78	425	182
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	345	188	595	32	147	164	590	1100	103	78	425	182
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		Free	Perm		Free	pm+pt		Free	pm+pt		Free
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2		Free	6		Free
Actuated Green, G (s)	25.0	25.0	90.9	25.0	25.0	90.9	51.9	38.5	90.9	33.3	26.9	90.9
Effective Green, g (s)	25.0	25.0	90.9	25.0	25.0	90.9	51.9	38.5	90.9	33.3	26.9	90.9
Actuated g/C Ratio	0.28	0.28	1.00	0.28	0.28	1.00	0.57	0.42	1.00	0.37	0.30	1.00
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)	333	502	1553	306	493	1524	601	1485	1568	232	1037	1568
v/s Ratio Prot		0.10			0.08		c0.19	0.31		0.02	0.12	
v/s Ratio Perm	c0.28		0.38	0.03		0.11	c0.37		0.07	0.10		0.12
v/c Ratio	1.04	0.37	0.38	0.10	0.30	0.11	0.98	0.74	0.07	0.34	0.41	0.12
Uniform Delay, d1	33.0	26.6	0.0	24.6	26.0	0.0	14.9	22.0	0.0	19.4	25.6	0.0
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	59.0	0.5	0.7	0.2	0.3	0.1	31.9	2.0	0.1	0.9	0.3	0.2
Delay (s)	91.9	27.1	0.7	24.7	26.4	0.1	46.8	24.0	0.1	20.2	25.9	0.2
Level of Service	F	C	A	C	C	A	D	C	A	C	C	A
Approach Delay (s)		33.0			13.7			30.2			18.4	
Approach LOS		C			B			C			B	

Intersection Summary

HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 10: Grange Road & SR 21

SR 21 Corridor ALT 3
 2035 PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	21	96	1550	54	55	908
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	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)	1703	1524	3471	1553	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.10	1.00
Satd. Flow (perm)	1703	1524	3471	1553	189	3471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	23	104	1685	59	60	987
RTOR Reduction (vph)	0	20	0	17	0	0
Lane Group Flow (vph)	23	84	1685	42	60	987
Heavy Vehicles (%)	6%	6%	4%	4%	4%	4%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	7.0	7.0	39.5	39.5	39.5	39.5
Effective Green, g (s)	7.0	7.0	39.5	39.5	39.5	39.5
Actuated g/C Ratio	0.13	0.13	0.71	0.71	0.71	0.71
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	215	192	2470	1105	135	2470
v/s Ratio Prot	0.01		c0.49			0.28
v/s Ratio Perm		c0.06		0.03	0.32	
v/c Ratio	0.11	0.44	0.68	0.04	0.44	0.40
Uniform Delay, d1	21.5	22.4	4.5	2.4	3.4	3.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.6	0.8	0.0	2.3	0.1
Delay (s)	21.7	24.0	5.3	2.4	5.7	3.3
Level of Service	C	C	A	A	A	A
Approach Delay (s)	23.6		5.2			3.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 11: Bourne Avenue (SR 307) & SR 21

SR 21 Corridor ALT 3
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Volume (vph)	304	316	394	184	614	167	114	573	45	94	742	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	4.0	8.0	8.0	4.0	8.5	8.0	4.0	8.5	8.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	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)	2870	2959	1324	2673	2756	1233	3400	5036	1568	3433	5085	1583
Flt Permitted	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 (perm)	2870	2959	1324	2673	2756	1233	3400	5036	1568	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	343	428	200	667	182	124	623	49	102	807	101
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	330	343	428	200	667	182	124	623	49	102	807	101
Heavy Vehicles (%)	22%	22%	22%	31%	31%	31%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	17.8	35.9	120.0	15.0	33.1	120.0	7.6	27.3	120.0	9.3	29.0	120.0
Effective Green, g (s)	17.8	35.9	120.0	15.0	33.1	120.0	7.6	27.3	120.0	9.3	29.0	120.0
Actuated g/C Ratio	0.15	0.30	1.00	0.12	0.28	1.00	0.06	0.23	1.00	0.08	0.24	1.00
Clearance Time (s)	8.0	8.0		8.0	8.0		8.5	8.0		8.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	426	885	1324	334	760	1233	215	1146	1568	266	1229	1583
v/s Ratio Prot	c0.11	0.12		0.07	c0.24		0.04	0.12		0.03	c0.16	
v/s Ratio Perm			c0.32			0.15			0.03			0.06
v/c Ratio	0.77	0.39	0.32	0.60	0.88	0.15	0.58	0.54	0.03	0.38	0.66	0.06
Uniform Delay, d1	49.2	33.3	0.0	49.7	41.5	0.0	54.6	40.9	0.0	52.6	41.0	0.0
Progression Factor	1.00	1.00	1.00	0.82	0.89	1.00	0.93	0.70	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	0.3	0.6	2.4	9.5	0.2	3.5	1.8	0.0	0.9	2.8	0.1
Delay (s)	57.7	33.6	0.6	43.2	46.7	0.2	54.3	30.2	0.0	53.5	43.8	0.1
Level of Service	E	C	A	D	D	A	D	C	A	D	D	A
Approach Delay (s)		28.0			37.9			32.1			40.4	
Approach LOS		C			D			C			D	

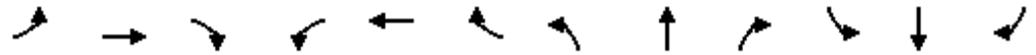
Intersection Summary

HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
12: Brampton Road & SR 21

SR 21 Corridor ALT 3
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖		↗		↕↕↕		↖	↕↕↕	
Volume (vph)	1	1	1	61	0	59	0	913	77	57	587	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Lane Util. Factor		1.00	1.00	1.00		1.00		0.91		1.00	0.91	
Fr _t		1.00	0.85	1.00		0.85		0.99		1.00	1.00	
Fl _t Protected		0.98	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1817	1583	1671		1495		4977		1770	5085	
Fl _t Permitted		0.98	1.00	0.76		1.00		1.00		0.21	1.00	
Satd. Flow (perm)		1817	1583	1331		1495		4977		390	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	66	0	64	0	992	84	62	638	0
RTOR Reduction (vph)	0	0	1	0	0	56	0	12	0	0	0	0
Lane Group Flow (vph)	0	2	0	66	0	8	0	1064	0	62	638	0
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	custom		custom				pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)		7.6	7.6	7.6		7.6		30.9		39.4	39.4	
Effective Green, g (s)		7.6	7.6	7.6		7.6		30.9		39.4	39.4	
Actuated g/C Ratio		0.13	0.13	0.13		0.13		0.51		0.66	0.66	
Clearance Time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Vehicle Extension (s)		3.0	3.0	3.0		3.0		5.0		3.0	5.0	
Lane Grp Cap (vph)		230	201	169		189		2563		348	3339	
v/s Ratio Prot								c0.21		0.01	c0.13	
v/s Ratio Perm		0.00	0.00	c0.05		0.01				0.11		
v/c Ratio		0.01	0.00	0.39		0.04		0.42		0.18	0.19	
Uniform Delay, d1		22.9	22.9	24.1		23.0		9.0		4.0	4.0	
Progression Factor		1.00	1.00	1.00		1.00		0.13		0.31	0.30	
Incremental Delay, d2		0.0	0.0	1.5		0.1		0.4		0.2	0.1	
Delay (s)		22.9	22.9	25.6		23.1		1.6		1.5	1.3	
Level of Service		C	C	C		C		A		A	A	
Approach Delay (s)		22.9			24.4			1.6			1.3	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	3.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Minus Avenue & SR 21

SR 21 Corridor ALT 3
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↑↑↑		↗	↑↑↑	
Volume (vph)	75	10	171	174	10	57	33	858	34	97	433	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frt		0.91			0.97		1.00	0.99		1.00	0.97	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1638			1992		1787	5106		1752	4875	
Flt Permitted		0.84			0.61		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1399			1261		1787	5106		1752	4875	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	11	186	189	11	62	36	933	37	105	471	128
RTOR Reduction (vph)	0	125	0	0	19	0	0	7	0	0	72	0
Lane Group Flow (vph)	0	154	0	0	243	0	36	963	0	105	527	0
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Turn Type	Perm		Perm				Prot		Prot			
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Actuated Green, G (s)		14.3			14.3		2.2	18.6		7.1	23.5	
Effective Green, g (s)		14.3			14.3		2.2	18.6		7.1	23.5	
Actuated g/C Ratio		0.24			0.24		0.04	0.31		0.12	0.39	
Clearance Time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		333			301		66	1583		207	1909	
v/s Ratio Prot							0.02	c0.19		c0.06	0.11	
v/s Ratio Perm		0.11			c0.19							
v/c Ratio		0.46			0.81		0.55	0.61		0.51	0.28	
Uniform Delay, d1		19.6			21.5		28.4	17.6		24.8	12.4	
Progression Factor		1.00			1.00		1.00	1.00		1.42	1.45	
Incremental Delay, d2		1.0			14.6		8.9	1.7		1.9	0.4	
Delay (s)		20.6			36.1		37.3	19.4		37.3	18.4	
Level of Service		C			D		D	B		D	B	
Approach Delay (s)		20.6			36.1			20.0			21.2	
Approach LOS		C			D			B			C	

Intersection Summary

HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 14: Bourne Avenue (SR 307) &

SR 21 Corridor ALT 3
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↘	↘	↗↗	↘		↗	↘		↗	↘
Volume (vph)	3	450	2	2	849	2	2	1	2	47	1	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	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		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1337	2674	1196	1378	2756	1233		1226	1077		1758	1568
Flt Permitted	0.22	1.00	1.00	0.46	1.00	1.00		0.93	1.00		0.80	1.00
Satd. Flow (perm)	313	2674	1196	662	2756	1233		1183	1077		1480	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	489	2	2	923	2	2	1	2	51	1	124
RTOR Reduction (vph)	0	0	1	0	0	1	0	0	1	0	0	69
Lane Group Flow (vph)	3	489	1	2	923	1	0	3	1	0	52	55
Heavy Vehicles (%)	35%	35%	35%	31%	31%	31%	50%	50%	50%	3%	3%	3%
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	27.2	27.2	27.2	27.2	27.2	27.2		23.8	23.8		23.8	23.8
Effective Green, g (s)	27.2	27.2	27.2	27.2	27.2	27.2		23.8	23.8		23.8	23.8
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45		0.40	0.40		0.40	0.40
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	142	1212	542	300	1249	559		469	427		587	622
v/s Ratio Prot		0.18			c0.33							
v/s Ratio Perm	0.01		0.00	0.00		0.00		0.00	0.00		c0.04	0.03
v/c Ratio	0.02	0.40	0.00	0.01	0.74	0.00		0.01	0.00		0.09	0.09
Uniform Delay, d1	9.1	11.0	9.0	9.0	13.5	9.0		10.9	10.9		11.3	11.3
Progression Factor	0.39	0.51	0.28	0.50	0.42	0.39		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.2	0.0	0.0	1.5	0.0		0.0	0.0		0.3	0.3
Delay (s)	3.6	5.8	2.5	4.5	7.2	3.5		11.0	10.9		11.6	11.6
Level of Service	A	A	A	A	A	A		B	B		B	B
Approach Delay (s)		5.7			7.2			11.0			11.6	
Approach LOS		A			A			B			B	

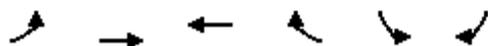
Intersection Summary

HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 15: Bourne Avenue (SR 307) & JDL Connector

SR 21 Corridor ALT 3
 2035 PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	323	176	483	652	347	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2537	2616	2087	934	2449	1129
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2537	2616	2087	934	2449	1129
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	191	525	709	377	402
RTOR Reduction (vph)	0	0	0	0	0	283
Lane Group Flow (vph)	351	191	525	709	377	119
Heavy Vehicles (%)	38%	38%	73%	73%	43%	43%
Turn Type	Prot		Free		Perm	
Protected Phases	7	4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)	11.2	33.3	17.6	60.0	17.7	17.7
Effective Green, g (s)	11.2	33.3	17.6	60.0	17.7	17.7
Actuated g/C Ratio	0.19	0.55	0.29	1.00	0.29	0.29
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	474	1452	612	934	722	333
v/s Ratio Prot	0.14	0.07	0.25		0.15	
v/s Ratio Perm				c0.76		0.11
v/c Ratio	0.74	0.13	0.86	0.76	0.52	0.36
Uniform Delay, d1	23.0	6.4	20.0	0.0	17.6	16.7
Progression Factor	1.07	0.32	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	0.0	11.4	5.8	2.7	3.0
Delay (s)	30.6	2.1	31.5	5.8	20.3	19.6
Level of Service	C	A	C	A	C	B
Approach Delay (s)		20.6	16.7		20.0	
Approach LOS		C	B		B	

Intersection Summary

HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Grange Road & JDLCOn Off Ramp

SR 21 Corridor ALT 3
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Volume (vph)	0	89	20	14	103	0	0	0	0	30	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00						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)		1638	1392	1671	1759						1752	1568
Flt Permitted		1.00	1.00	0.73	1.00						0.95	1.00
Satd. Flow (perm)		1638	1392	1279	1759						1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	97	22	15	112	0	0	0	0	33	0	15
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	97	3	15	112	0	0	0	0	0	33	10
Heavy Vehicles (%)	16%	16%	16%	8%	8%	8%	2%	2%	2%	3%	3%	3%
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		5.5	5.5	5.5	5.5						25.5	25.5
Effective Green, g (s)		5.5	5.5	5.5	5.5						25.5	25.5
Actuated g/C Ratio		0.14	0.14	0.14	0.14						0.64	0.64
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		225	191	176	242						1117	1000
v/s Ratio Prot		0.06			c0.06							
v/s Ratio Perm			0.00	0.01							0.02	0.01
v/c Ratio		0.43	0.02	0.09	0.46						0.03	0.01
Uniform Delay, d1		15.8	14.9	15.1	15.9						2.7	2.6
Progression Factor		1.00	1.00	0.53	0.59						1.00	1.00
Incremental Delay, d2		1.3	0.0	0.2	1.4						0.0	0.0
Delay (s)		17.1	14.9	8.2	10.7						2.7	2.7
Level of Service		B	B	A	B						A	A
Approach Delay (s)		16.7			10.4			0.0			2.7	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.11		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
17: Grange Road & JDLC On Ramp

SR 21 Corridor ALT 3
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖	↗		↖	↗			
Volume (vph)	39	80	0	0	80	83	37	0	62	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	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)	1752	1845			1696	1442		1736	1553			
Flt Permitted	0.70	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1292	1845			1696	1442		1736	1553			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	87	0	0	87	90	40	0	67	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	76	0	0	26	0	0	0
Lane Group Flow (vph)	42	87	0	0	87	14	0	40	41	0	0	0
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	2%	2%	2%
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	6.4	6.4			6.4	6.4		24.6	24.6			
Effective Green, g (s)	6.4	6.4			6.4	6.4		24.6	24.6			
Actuated g/C Ratio	0.16	0.16			0.16	0.16		0.62	0.62			
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	207	295			271	231		1068	955			
v/s Ratio Prot		0.05			c0.05							
v/s Ratio Perm	0.03					0.01		0.02	c0.03			
v/c Ratio	0.20	0.29			0.32	0.06		0.04	0.04			
Uniform Delay, d1	14.6	14.8			14.9	14.3		3.0	3.0			
Progression Factor	0.47	0.46			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.5	0.6			0.7	0.1		0.1	0.1			
Delay (s)	7.4	7.3			15.6	14.4		3.1	3.1			
Level of Service	A	A			B	B		A	A			
Approach Delay (s)		7.4			15.0			3.1			0.0	
Approach LOS		A			B			A			A	

Intersection Summary

HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.10		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 18: Jimmy DeLoach Parkway & JDL Parkway Off Ramp

SR 21 Corridor ALT 3
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↑		↑		↑		↑			
Volume (veh/h)	0	119	200	2	302	0	1	0	311	0	0	0
Sign Control		Free			Free			Stop			Stop	
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)	0	129	217	2	328	0	1	0	338	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	328			129			397	462	328	462	462	65
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	328			129			397	462	328	462	462	65
tC, single (s)	4.9			5.5			7.8	6.8	7.2	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.6			2.9			3.7	4.2	3.5	3.5	4.0	3.3
p0 queue free %	100			100			100	100	46	100	100	100
cM capacity (veh/h)	990			1064			504	465	628	223	494	986

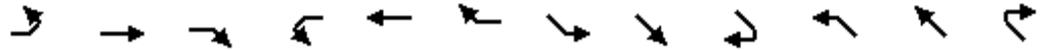
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	SE 1	SE 2
Volume Total	65	65	217	330	1	338
Volume Left	0	0	0	2	1	0
Volume Right	0	0	217	0	0	338
cSH	1700	1700	1700	1064	504	628
Volume to Capacity	0.04	0.04	0.13	0.00	0.00	0.54
Queue Length 95th (ft)	0	0	0	0	0	80
Control Delay (s)	0.0	0.0	0.0	0.1	12.2	17.2
Lane LOS				A	B	C
Approach Delay (s)	0.0			0.1	17.2	
Approach LOS					C	

Intersection Summary

Average Delay	5.8
Intersection Capacity Utilization	41.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 19: Jimmy DeLoach Parkway & JDL Parkway On Ramp

SR 21 Corridor ALT 3
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	117	3	0	0	4	1	0	0	0	300	0	2
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)	127	3	0	0	4	1	0	0	0	326	0	2

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total (vph)	127	3	5	328
Volume Left (vph)	127	0	0	326
Volume Right (vph)	0	0	1	2
Hadj (s)	0.77	0.27	-0.09	1.41
Departure Headway (s)	6.3	5.8	5.2	5.7
Degree Utilization, x	0.22	0.01	0.01	0.52
Capacity (veh/h)	541	586	637	616
Control Delay (s)	9.9	7.6	8.2	14.9
Approach Delay (s)	9.9		8.2	14.9
Approach LOS	A		A	B

Intersection Summary			
Delay		13.4	
HCM Level of Service		B	
Intersection Capacity Utilization	36.6%		ICU Level of Service A
Analysis Period (min)		15	

ALT 10
2035
AM Peak Hour

HCM Signalized Intersection Capacity Analysis

SR 21 Corridor ALT 10B

1: SR 30 & SR 21

2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↖	↖↗	↖↗	↖	↖	↖↗↘	↖
Volume (vph)	34	150	957	126	51	53	185	488	51	100	2817	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0	4.0	7.0	6.4	4.0	7.0	6.4	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1810	1553	1629	1827	1480	3242	3343	1495	1626	4673	1455
Flt Permitted		0.93	1.00	0.45	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1694	1553	766	1827	1480	3242	3343	1495	1626	4673	1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	163	1040	137	55	58	201	530	55	109	3062	58
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	200	1040	137	55	58	201	530	55	109	3062	58
Confl. Peds. (#/hr)				59		119						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	8%	8%	8%	11%	11%	11%
Turn Type	Perm		Free	Perm		Free	Prot		Free	Prot		Free
Protected Phases		4		8		8	1	6		5		2
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)		27.7	148.7	27.7	27.7	148.7	9.0	86.0	148.7	14.6	91.6	148.7
Effective Green, g (s)		27.7	148.7	27.7	27.7	148.7	9.0	86.0	148.7	14.6	91.6	148.7
Actuated g/C Ratio		0.19	1.00	0.19	0.19	1.00	0.06	0.58	1.00	0.10	0.62	1.00
Clearance Time (s)		7.0		7.0	7.0		7.0	6.4		7.0	6.4	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		316	1553	143	340	1480	196	1933	1495	160	2879	1455
v/s Ratio Prot					0.03		0.06	0.16		0.07	c0.66	
v/s Ratio Perm		0.12	c0.67	c0.18		0.04			0.04			0.04
v/c Ratio		0.63	0.67	0.96	0.16	0.04	1.03	0.27	0.04	0.68	1.06	0.04
Uniform Delay, d1		55.8	0.0	59.9	50.8	0.0	69.8	15.7	0.0	64.8	28.5	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		4.1	2.3	61.8	0.2	0.0	71.1	0.1	0.0	11.3	36.7	0.1
Delay (s)		59.9	2.3	121.8	51.0	0.0	140.9	15.8	0.0	76.1	65.3	0.1
Level of Service		E	A	F	D	A	F	B	A	E	E	A
Approach Delay (s)		11.6			78.0			46.7			64.5	
Approach LOS		B			E			D			E	

Intersection Summary			
HCM Average Control Delay	50.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	148.7	Sum of lost time (s)	7.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: SR 21 & I-95 Southbound On-Ramp

SR 21 Corridor ALT 10B
2035 AM



Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	59	649	0	0	1046	2880	0	0	0	243	0	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0				4.5		4.0
Lane Util. Factor	1.00	0.91			0.95	0.76				1.00		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)	1687	4848			3343	3409				1327		1188
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1687	4848			3343	3409				1327		1188
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	705	0	0	1137	3130	0	0	0	264	0	55
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	64	705	0	0	1137	3130	0	0	0	264	0	55
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	36%	36%	36%
Turn Type	Prot					Free				Prot		Free
Protected Phases	3	8			4					1		
Permitted Phases						Free						Free
Actuated Green, G (s)	4.8	33.5			22.7	60.0				16.0		60.0
Effective Green, g (s)	4.8	33.5			22.7	60.0				16.0		60.0
Actuated g/C Ratio	0.08	0.56			0.38	1.00				0.27		1.00
Clearance Time (s)	6.0	6.0			6.0					4.5		
Vehicle Extension (s)	3.0	3.0			3.0					3.0		
Lane Grp Cap (vph)	135	2707			1265	3409				354		1188
v/s Ratio Prot	0.04	0.15			0.34					0.20		
v/s Ratio Perm						c0.92						0.05
v/c Ratio	0.47	0.26			0.90	0.92				0.75		0.05
Uniform Delay, d1	26.4	6.8			17.6	0.0				20.1		0.0
Progression Factor	0.73	0.04			1.00	1.00				1.00		1.00
Incremental Delay, d2	2.2	0.0			8.7	5.2				8.3		0.1
Delay (s)	21.5	0.3			26.3	5.2				28.4		0.1
Level of Service	C	A			C	A				C		A
Approach Delay (s)		2.1			10.8			0.0			23.5	
Approach LOS		A			B			A			C	

Intersection Summary

HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: SR 21 & I-95 Northbound Off-Ramp

SR 21 Corridor ALT 10B
2035 AM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑	↑	↑↑	↑↑		↑↑↑		↑			
Volume (vph)	0	164	8	703	586	0	544	0	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	6.4	5.5	6.4		4.5		4.0			
Lane Util. Factor		0.91	1.00	0.97	0.95		0.94		1.00			
Frt		1.00	0.85	1.00	1.00		1.00		0.85			
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		4217	1313	2918	3008		4757		1509			
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		4217	1313	2918	3008		4757		1509			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	178	9	764	637	0	591	0	98	0	0	0
RTOR Reduction (vph)	0	0	7	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	178	2	764	637	0	591	0	98	0	0	0
Heavy Vehicles (%)	23%	23%	23%	20%	20%	20%	7%	7%	7%	7%	7%	7%
Turn Type			Perm	Prot			custom		Free			
Protected Phases		8		7	4		5					
Permitted Phases			8				2		Free			
Actuated Green, G (s)		15.0	15.0	17.3	37.8		11.3		60.0			
Effective Green, g (s)		15.0	15.0	17.3	37.8		11.3		60.0			
Actuated g/C Ratio		0.25	0.25	0.29	0.63		0.19		1.00			
Clearance Time (s)		6.4	6.4	5.5	6.4		4.5					
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0					
Lane Grp Cap (vph)		1054	328	841	1895		896		1509			
v/s Ratio Prot		0.04		c0.26	c0.21		c0.12					
v/s Ratio Perm			0.00						0.06			
v/c Ratio		0.17	0.01	0.91	0.34		0.66		0.06			
Uniform Delay, d1		17.6	16.9	20.6	5.2		22.6		0.0			
Progression Factor		1.00	1.00	0.55	0.43		1.00		1.00			
Incremental Delay, d2		0.1	0.0	7.5	0.1		1.8		0.1			
Delay (s)		17.7	16.9	18.8	2.3		24.3		0.1			
Level of Service		B	B	B	A		C		A			
Approach Delay (s)		17.7			11.3			20.9			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM Average Control Delay			14.7				HCM Level of Service		B			
HCM Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			60.0				Sum of lost time (s)		16.4			
Intersection Capacity Utilization			62.8%				ICU Level of Service		B			
Analysis Period (min)			15									

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

HCM Signalized Intersection Capacity Analysis

5: Hendley Road & SR 21

SR 21 Corridor ALT 10B
2035 AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	4	488	30	3	21	138	52	21	9	391	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1691	1583	1770	1863	1583	1583	3030		1504	3008	1346
Flt Permitted	0.93	0.90	1.00	0.93	1.00	1.00	0.50	1.00		0.70	1.00	1.00
Satd. Flow (perm)	1646	1584	1583	1733	1863	1583	840	3030		1112	3008	1346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	4	530	33	3	23	150	57	23	10	425	283
RTOR Reduction (vph)	0	0	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	54	53	530	33	3	23	150	69	0	10	425	283
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	14%	14%	14%	20%	20%	20%
Turn Type	Perm		Free	Perm		Free	pm+pt			pm+pt		Free
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2			6		Free
Actuated Green, G (s)	4.3	4.3	40.8	4.3	4.3	40.8	27.5	20.9		18.2	16.1	40.8
Effective Green, g (s)	4.3	4.3	40.8	4.3	4.3	40.8	27.5	20.9		18.2	16.1	40.8
Actuated g/C Ratio	0.11	0.11	1.00	0.11	0.11	1.00	0.67	0.51		0.45	0.39	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	173	167	1583	183	196	1583	692	1552		516	1187	1346
v/s Ratio Prot					0.00		0.04	0.02		0.00	0.14	
v/s Ratio Perm	0.03	0.03	c0.33	0.02		0.01	0.11			0.01		0.21
v/c Ratio	0.31	0.32	0.33	0.18	0.02	0.01	0.22	0.04		0.02	0.36	0.21
Uniform Delay, d1	16.9	16.9	0.0	16.6	16.4	0.0	2.6	5.0		6.3	8.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	1.1	0.6	0.5	0.0	0.0	0.2	0.0		0.0	0.2	0.4
Delay (s)	17.9	18.0	0.6	17.1	16.4	0.0	2.8	5.0		6.3	8.9	0.4
Level of Service	B	B	A	B	B	A	A	A		A	A	A
Approach Delay (s)		3.5			10.4			3.6			5.5	
Approach LOS		A			B			A			A	

Intersection Summary

HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	40.8	Sum of lost time (s)	0.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: International Trade & SR 21

SR 21 Corridor ALT 10B

2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕	↗	↖	↕	↕
Volume (vph)	1	0	1	121	0	25	0	185	79	150	758	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5	4.0		5.5	4.0	6.1	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1094	979		3059	1369	1612	3223	
Flt Permitted		0.91			0.76	1.00		1.00	1.00	0.54	1.00	
Satd. Flow (perm)		1596			871	979		3059	1369	913	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	1	132	0	27	0	201	86	163	824	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	132	27	0	201	86	163	825	0
Heavy Vehicles (%)	1%	1%	1%	65%	65%	65%	18%	18%	18%	12%	12%	12%
Turn Type	Perm			Perm		Free	Perm		Free	pm+pt		
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		Free	6		Free		2	
Actuated Green, G (s)		17.0			17.0	80.8		37.7	80.8	52.8	52.8	
Effective Green, g (s)		17.0			17.0	80.8		37.7	80.8	52.8	52.8	
Actuated g/C Ratio		0.21			0.21	1.00		0.47	1.00	0.65	0.65	
Clearance Time (s)		5.5			5.5			5.5		6.1	5.5	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		336			183	979		1427	1369	674	2106	
v/s Ratio Prot								0.07		0.03	c0.26	
v/s Ratio Perm		0.00			c0.15	0.03			0.06	0.13		
v/c Ratio		0.00			0.72	0.03		0.14	0.06	0.24	0.39	
Uniform Delay, d1		25.2			29.7	0.0		12.3	0.0	5.7	6.5	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			13.1	0.1		0.2	0.1	0.2	0.5	
Delay (s)		25.2			42.8	0.1		12.5	0.1	5.9	7.1	
Level of Service		C			D	A		B	A	A	A	
Approach Delay (s)		25.2			35.5			8.8			6.9	
Approach LOS		C			D			A			A	

Intersection Summary

HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Jimmy DeLoach Parkway & SR 21

SR 21 Corridor ALT 10B
2035 AM



Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Volume (vph)	209	180	0	425	71	49	715	1202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	4.0		7.5	4.0		7.5	7.5
Lane Util. Factor	0.97	1.00		0.95	1.00		0.97	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)	2894	1335		3505	1568		3144	3223
Flt Permitted	0.95	1.00		1.00	1.00		0.95	1.00
Satd. Flow (perm)	2894	1335		3505	1568		3144	3223
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	227	196	0	462	77	53	777	1307
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	227	196	0	462	77	0	830	1307
Heavy Vehicles (%)	21%	21%	3%	3%	3%	2%	12%	12%
Turn Type		Free	Perm		Free	Prot	Prot	
Protected Phases	4			2		1	1	6
Permitted Phases		Free	2		Free			
Actuated Green, G (s)	10.8	75.0		19.9	75.0		21.3	48.7
Effective Green, g (s)	10.8	75.0		19.9	75.0		21.3	48.7
Actuated g/C Ratio	0.14	1.00		0.27	1.00		0.28	0.65
Clearance Time (s)	8.0			7.5			7.5	7.5
Vehicle Extension (s)	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	417	1335		930	1568		893	2093
v/s Ratio Prot	c0.08			0.13			c0.26	c0.41
v/s Ratio Perm		0.15			0.05			
v/c Ratio	0.54	0.15		0.50	0.05		0.93	0.62
Uniform Delay, d1	29.8	0.0		23.3	0.0		26.1	7.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.2		1.9	0.1		15.5	0.6
Delay (s)	31.3	0.2		25.2	0.1		41.7	8.3
Level of Service	C	A		C	A		D	A
Approach Delay (s)	16.9			21.6				21.3
Approach LOS	B			C				C

Intersection Summary

HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Bonnybridge Road (SR 30) & SR 21

SR 21 Corridor ALT 10B
2035 AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↶	↕	↷	↶	↕
Volume (vph)	18	64	432	6	360	1051
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.5	6.5	5.0	6.5
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)	1626	1455	3505	1568	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.48	1.00
Satd. Flow (perm)	1626	1455	3505	1568	878	3471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	70	470	7	391	1142
RTOR Reduction (vph)	0	0	0	3	0	0
Lane Group Flow (vph)	20	70	470	4	391	1142
Heavy Vehicles (%)	11%	11%	3%	3%	4%	4%
Turn Type		Free		Perm	pm+pt	
Protected Phases	8		6		5	2
Permitted Phases		Free		6	2	
Actuated Green, G (s)	6.0	100.0	57.4	57.4	83.0	81.5
Effective Green, g (s)	6.0	100.0	57.4	57.4	83.0	81.5
Actuated g/C Ratio	0.06	1.00	0.57	0.57	0.83	0.82
Clearance Time (s)	6.0		6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	98	1455	2012	900	893	2829
v/s Ratio Prot	c0.01		0.13		c0.08	0.33
v/s Ratio Perm		0.05		0.00	c0.28	
v/c Ratio	0.20	0.05	0.23	0.00	0.44	0.40
Uniform Delay, d1	44.7	0.0	10.5	9.1	2.7	2.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	0.3	0.0	0.3	0.4
Delay (s)	45.8	0.1	10.8	9.1	3.0	3.0
Level of Service	D	A	B	A	A	A
Approach Delay (s)	10.2		10.7			3.0
Approach LOS	B		B			A

Intersection Summary

HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Gulfstream Road & SR 21

SR 21 Corridor ALT 10B
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖↗	↖↗	↖	↖	↖↗	↖
Volume (vph)	50	224	468	43	256	40	353	353	57	34	874	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0	4.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	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)	3367	1827	1553	1719	1810	1538	3400	3505	1568	1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.61	1.00	1.00	0.95	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	3367	1827	1553	1100	1810	1538	3400	3505	1568	967	3505	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	243	509	47	278	43	384	384	62	37	950	187
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	0	0
Lane Group Flow (vph)	54	243	509	47	278	8	384	384	62	37	950	187
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Free	Perm		Perm	Prot		Free	pm+pt		Free
Protected Phases	7	4			8		5	2			1	6
Permitted Phases			Free	8		8			Free		6	Free
Actuated Green, G (s)	2.4	22.1	80.0	15.2	15.2	15.2	11.1	32.1	80.0	30.6	25.8	80.0
Effective Green, g (s)	2.4	22.1	80.0	15.2	15.2	15.2	11.1	32.1	80.0	30.6	25.8	80.0
Actuated g/C Ratio	0.03	0.28	1.00	0.19	0.19	0.19	0.14	0.40	1.00	0.38	0.32	1.00
Clearance Time (s)	4.5	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	3.0	
Lane Grp Cap (vph)	101	505	1553	209	344	292	472	1406	1568	417	1130	1568
v/s Ratio Prot	0.02	0.13			c0.15		c0.11	0.11		0.01	c0.27	
v/s Ratio Perm			c0.33	0.04		0.01			0.04	0.03		0.12
v/c Ratio	0.53	0.48	0.33	0.22	0.81	0.03	0.81	0.27	0.04	0.09	0.84	0.12
Uniform Delay, d1	38.2	24.2	0.0	27.4	31.0	26.4	33.4	16.1	0.0	15.6	25.2	0.0
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	5.4	0.7	0.6	0.5	13.0	0.0	10.3	0.5	0.0	0.1	7.6	0.2
Delay (s)	43.6	24.9	0.6	28.0	44.0	26.4	43.8	16.6	0.0	15.7	32.8	0.2
Level of Service	D	C	A	C	D	C	D	B	A	B	C	A
Approach Delay (s)		10.8			39.9			27.9			27.1	
Approach LOS		B			D			C			C	

Intersection Summary

HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 10: Grange Road & SR 21

SR 21 Corridor ALT 10B
 2035 AM

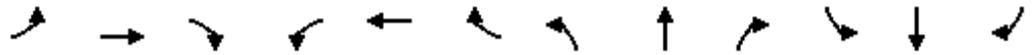


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	33	29	732	25	99	1281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1703	1524	3438	1538	1719	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.35	1.00
Satd. Flow (perm)	1703	1524	3438	1538	635	3438
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	36	32	796	27	108	1392
RTOR Reduction (vph)	0	29	0	7	0	0
Lane Group Flow (vph)	36	3	796	20	108	1392
Heavy Vehicles (%)	6%	6%	5%	5%	5%	5%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	3.8	3.8	35.6	35.6	35.6	35.6
Effective Green, g (s)	3.8	3.8	35.6	35.6	35.6	35.6
Actuated g/C Ratio	0.08	0.08	0.74	0.74	0.74	0.74
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	134	120	2529	1131	467	2529
v/s Ratio Prot	c0.02		0.23			c0.40
v/s Ratio Perm		0.00		0.01	0.17	
v/c Ratio	0.27	0.02	0.31	0.02	0.23	0.55
Uniform Delay, d1	21.0	20.6	2.2	1.7	2.0	2.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.1	0.0	0.3	0.3
Delay (s)	22.1	20.7	2.3	1.7	2.3	3.1
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.4		2.3			3.0
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	3.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 11: Bourne Avenue (SR 307) & SR 21

SR 21 Corridor ALT 10B
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↖	↖	↖↗	↖↖	↖		↖↖↖	↖	↖	↖↖↖	↖
Volume (vph)	237	418	177	230	470	58	0	834	117	85	998	603
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	4.0	8.0	8.0	4.0		8.0	4.0	8.5	8.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2870	2959	1324	2449	2524	1129		5036	1568	1719	4940	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2870	2959	1324	2449	2524	1129		5036	1568	1719	4940	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	258	454	192	250	511	63	0	907	127	92	1085	655
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	258	454	192	250	511	63	0	907	127	92	1085	655
Heavy Vehicles (%)	22%	22%	22%	43%	43%	43%	3%	3%	3%	5%	5%	5%
Turn Type	Prot		Free	Prot		Free			Free	Prot		Free
Protected Phases	7	4		3	8			2		1		6
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.1	15.1	88.6	15.1	15.1	88.6		20.5	88.6	5.4	34.4	88.6
Effective Green, g (s)	15.1	15.1	88.6	15.1	15.1	88.6		20.5	88.6	5.4	34.4	88.6
Actuated g/C Ratio	0.17	0.17	1.00	0.17	0.17	1.00		0.23	1.00	0.06	0.39	1.00
Clearance Time (s)	8.0	8.0		8.0	8.0			8.0		8.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	489	504	1324	417	430	1129		1165	1568	105	1918	1538
v/s Ratio Prot	0.09	c0.15		0.10	c0.20			c0.18		0.05	c0.22	
v/s Ratio Perm			0.15			0.06			0.08			0.43
v/c Ratio	0.53	0.90	0.15	0.60	1.19	0.06		0.78	0.08	0.88	0.57	0.43
Uniform Delay, d1	33.5	36.0	0.0	34.0	36.8	0.0		31.9	0.0	41.3	21.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	19.1	0.2	2.3	105.9	0.1		3.4	0.1	50.4	0.4	0.9
Delay (s)	34.5	55.1	0.2	36.3	142.7	0.1		35.3	0.1	91.7	21.6	0.9
Level of Service	C	E	A	D	F	A		D	A	F	C	A
Approach Delay (s)		37.6			99.5			31.0			17.7	
Approach LOS		D			F			C			B	

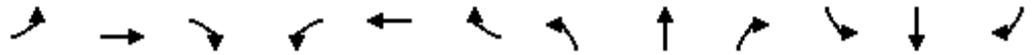
Intersection Summary

HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	32.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
12: Brampton & SR 21

SR 21 Corridor ALT 10B
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖		↗		↕↔		↖	↕↕	
Volume (vph)	1	1	1	116	0	13	0	749	37	63	653	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Lane Util. Factor		1.00	1.00	1.00		1.00		0.95		1.00	0.95	
Frt		1.00	0.85	1.00		0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1835	1599	1656		1482		3480		1770	3539	
Flt Permitted		0.98	1.00	0.76		1.00		1.00		0.25	1.00	
Satd. Flow (perm)		1835	1599	1319		1482		3480		459	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	126	0	14	0	814	40	68	710	0
RTOR Reduction (vph)	0	0	1	0	0	12	0	5	0	0	0	0
Lane Group Flow (vph)	0	2	0	126	0	2	0	849	0	68	710	0
Heavy Vehicles (%)	1%	1%	1%	9%	9%	9%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	custom		custom				pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)		9.7	9.7	9.7		9.7		28.6		37.3	37.3	
Effective Green, g (s)		9.7	9.7	9.7		9.7		28.6		37.3	37.3	
Actuated g/C Ratio		0.16	0.16	0.16		0.16		0.48		0.62	0.62	
Clearance Time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Vehicle Extension (s)		3.0	3.0	3.0		3.0		5.0		3.0	5.0	
Lane Grp Cap (vph)		297	259	213		240		1659		377	2200	
v/s Ratio Prot								c0.24		0.01	c0.20	
v/s Ratio Perm		0.00	0.00	c0.10		0.00				0.10		
v/c Ratio		0.01	0.00	0.59		0.01		0.51		0.18	0.32	
Uniform Delay, d1		21.1	21.1	23.3		21.1		10.9		5.1	5.4	
Progression Factor		1.00	1.00	1.00		1.00		0.26		1.00	1.00	
Incremental Delay, d2		0.0	0.0	4.4		0.0		1.0		0.2	0.4	
Delay (s)		21.1	21.1	27.7		21.1		3.8		5.4	5.8	
Level of Service		C	C	C		C		A		A	A	
Approach Delay (s)		21.1			27.0			3.8			5.7	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Minus Avenue & SR 21

SR 21 Corridor ALT 10B
2035 AM

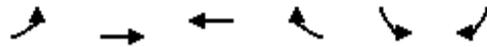


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑↑↑		↕	↑↑	
Volume (vph)	74	7	161	160	8	52	57	660	39	110	486	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.95	
Frt		0.91			0.97		1.00	0.99		1.00	0.96	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1638			1972		1770	5043		1770	3400	
Flt Permitted		0.84			0.63		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1401			1278		1770	5043		1770	3400	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	8	175	174	9	57	62	717	42	120	528	188
RTOR Reduction (vph)	0	126	0	0	19	0	0	10	0	0	54	0
Lane Group Flow (vph)	0	137	0	0	221	0	62	749	0	120	662	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Actuated Green, G (s)		13.7			13.7		3.2	20.2		6.1	23.1	
Effective Green, g (s)		13.7			13.7		3.2	20.2		6.1	23.1	
Actuated g/C Ratio		0.23			0.23		0.05	0.34		0.10	0.39	
Clearance Time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		320			292		94	1698		180	1309	
v/s Ratio Prot							0.04	c0.15		0.07	c0.19	
v/s Ratio Perm		0.10			c0.17							
v/c Ratio		0.43			0.76		0.66	0.44		0.67	0.51	
Uniform Delay, d1		19.8			21.6		27.9	15.5		26.0	14.1	
Progression Factor		1.00			1.00		1.00	1.00		0.84	0.80	
Incremental Delay, d2		0.9			10.6		15.5	0.8		8.7	1.4	
Delay (s)		20.7			32.2		43.4	16.3		30.5	12.7	
Level of Service		C			C		D	B		C	B	
Approach Delay (s)		20.7			32.2			18.4			15.2	
Approach LOS		C			C			B			B	

Intersection Summary		
HCM Average Control Delay	19.0	HCM Level of Service B
HCM Volume to Capacity ratio	0.63	
Actuated Cycle Length (s)	60.0	Sum of lost time (s) 20.0
Intersection Capacity Utilization	66.2%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis
 14: Bourne Avenue (SR 307) & JDLC Off-Ramp

SR 21 Corridor ALT 10B
 2035 AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Volume (vph)	0	620	217	0	704	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		2439	2051		2319	1070
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		2439	2051		2319	1070
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	674	236	0	765	588
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	674	236	0	765	588
Heavy Vehicles (%)	48%	48%	76%	76%	51%	51%
Turn Type						Free
Protected Phases		4	8		6	
Permitted Phases						Free
Actuated Green, G (s)		17.3	17.3		23.7	50.0
Effective Green, g (s)		17.3	17.3		23.7	50.0
Actuated g/C Ratio		0.35	0.35		0.47	1.00
Clearance Time (s)		4.5	4.5		4.5	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		844	710		1099	1070
v/s Ratio Prot		c0.28	0.12		c0.33	
v/s Ratio Perm						0.55
v/c Ratio		0.80	0.33		0.70	0.55
Uniform Delay, d1		14.8	12.1		10.3	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		5.3	0.3		3.7	2.0
Delay (s)		20.1	12.4		14.0	2.0
Level of Service		C	B		B	A
Approach Delay (s)		20.1	12.4		8.8	
Approach LOS		C	B		A	

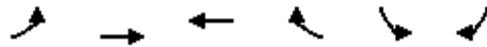
Intersection Summary

HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 15: Bourne Avenue (SR 307) & JDLC On-Ramp

SR 21 Corridor ALT 10B
 2035 AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖		
Volume (vph)	194	1130	217	132	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5		
Lane Util. Factor	1.00	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1142	2285	2228	997		
Flt Permitted	0.60	1.00	1.00	1.00		
Satd. Flow (perm)	727	2285	2228	997		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	1228	236	143	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	211	1228	236	143	0	0
Heavy Vehicles (%)	58%	58%	62%	62%	2%	2%
Turn Type	Perm			Perm		
Protected Phases		4	8			
Permitted Phases	4			8		
Actuated Green, G (s)	41.0	41.0	41.0	41.0		
Effective Green, g (s)	41.0	41.0	41.0	41.0		
Actuated g/C Ratio	1.00	1.00	1.00	1.00		
Clearance Time (s)	4.5	4.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	727	2285	2228	997		
v/s Ratio Prot		c0.54	0.11			
v/s Ratio Perm	0.29			0.14		
v/c Ratio	0.29	0.54	0.11	0.14		
Uniform Delay, d1	0.0	0.0	0.0	0.0		
Progression Factor	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.0	0.9	0.0	0.1		
Delay (s)	1.0	0.9	0.0	0.1		
Level of Service	A	A	A	A		
Approach Delay (s)		0.9	0.0		0.0	
Approach LOS		A	A		A	

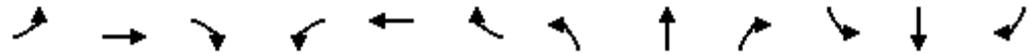
Intersection Summary

HCM Average Control Delay	0.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 16: Grange Road & JDLCon Off Ramp

SR 21 Corridor ALT 10B
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Volume (vph)	0	91	33	11	52	0	0	0	0	110	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00						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)		1792	1524	1671	1759						1703	1524
Flt Permitted		1.00	1.00	0.69	1.00						0.95	1.00
Satd. Flow (perm)		1792	1524	1219	1759						1703	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	99	36	12	57	0	0	0	0	120	0	11
RTOR Reduction (vph)	0	0	31	0	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	0	99	5	12	57	0	0	0	0	0	120	7
Heavy Vehicles (%)	6%	6%	6%	8%	8%	8%	2%	2%	2%	6%	6%	6%
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		7.1	7.1	7.1	7.1						33.9	33.9
Effective Green, g (s)		7.1	7.1	7.1	7.1						33.9	33.9
Actuated g/C Ratio		0.14	0.14	0.14	0.14						0.68	0.68
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		254	216	173	250						1155	1033
v/s Ratio Prot		c0.06			0.03							
v/s Ratio Perm			0.00	0.01							0.07	0.00
v/c Ratio		0.39	0.02	0.07	0.23						0.10	0.01
Uniform Delay, d1		19.5	18.5	18.6	19.0						2.8	2.6
Progression Factor		1.00	1.00	0.25	0.27						1.00	1.00
Incremental Delay, d2		1.0	0.0	0.2	0.5						0.2	0.0
Delay (s)		20.5	18.5	4.8	5.5						3.0	2.6
Level of Service		C	B	A	A						A	A
Approach Delay (s)		20.0			5.4			0.0			2.9	
Approach LOS		B			A			A			A	

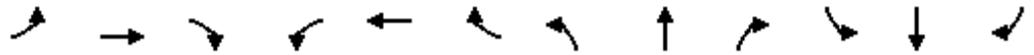
Intersection Summary

HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Grange Road & JDLC On Ramp

SR 21 Corridor ALT 10B
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑			↑	↗		↗	↗			
Volume (vph)	11	190	0	0	58	111	5	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1719	1810			1450	1233		1752	1568			
Flt Permitted	0.72	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1296	1810			1450	1233		1752	1568			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	207	0	0	63	121	5	0	12	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	98	0	0	4	0	0	0
Lane Group Flow (vph)	12	207	0	0	63	23	0	5	8	0	0	0
Heavy Vehicles (%)	5%	5%	5%	31%	31%	31%	3%	3%	3%	2%	2%	2%
Turn Type	Perm			Perm			Perm	Perm		Perm		
Protected Phases	4		8				2					
Permitted Phases	4		8				2		2			
Actuated Green, G (s)	9.7	9.7	9.7				9.7	31.3		31.3		
Effective Green, g (s)	9.7	9.7	9.7				9.7	31.3		31.3		
Actuated g/C Ratio	0.19	0.19	0.19				0.19	0.63		0.63		
Clearance Time (s)	4.5	4.5	4.5				4.5	4.5		4.5		
Vehicle Extension (s)	3.0	3.0	3.0				3.0	3.0		3.0		
Lane Grp Cap (vph)	251	351	281				239	1097		982		
v/s Ratio Prot	c0.11		0.04									
v/s Ratio Perm	0.01						0.02		0.00		c0.00	
v/c Ratio	0.05	0.59	0.22				0.10	0.00		0.01		
Uniform Delay, d1	16.4	18.3	17.0				16.6	3.5		3.5		
Progression Factor	0.77	0.81	1.00				1.00	1.00		1.00		
Incremental Delay, d2	0.1	2.5	0.4				0.2	0.0		0.0		
Delay (s)	12.7	17.4	17.4				16.7	3.5		3.5		
Level of Service	B	B	B				B	A		A		
Approach Delay (s)	17.1		17.0				3.5		0.0			
Approach LOS	B		B				A		A			

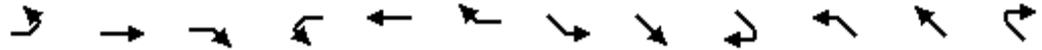
Intersection Summary

HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 18: Jimmy DeLoach Parkway & JDL Parkway Off Ramp

SR 21 Corridor ALT 10B
 2035 AM



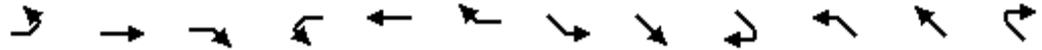
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↑		↑		↑		↑			
Volume (vph)	0	105	681	1	129	0	1	0	260	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5		4.5		4.5			
Lane Util. Factor		0.95	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		2959	1324		1386		1641		1468			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		2959	1324		1384		1641		1468			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	114	740	1	140	0	1	0	283	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	104	0	0	0
Lane Group Flow (vph)	0	114	740	0	141	0	1	0	179	0	0	0
Heavy Vehicles (%)	22%	22%	22%	37%	37%	37%	10%	10%	10%	2%	2%	2%
Turn Type			Free	Perm			custom		custom			
Protected Phases		4			8							
Permitted Phases			Free	8			6		6			
Actuated Green, G (s)		9.3	50.0		9.3		31.7		31.7			
Effective Green, g (s)		9.3	50.0		9.3		31.7		31.7			
Actuated g/C Ratio		0.19	1.00		0.19		0.63		0.63			
Clearance Time (s)		4.5			4.5		4.5		4.5			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		550	1324		257		1040		931			
v/s Ratio Prot		0.04										
v/s Ratio Perm			c0.56		0.10		0.00		0.12			
v/c Ratio		0.21	0.56		0.55		0.00		0.19			
Uniform Delay, d1		17.2	0.0		18.4		3.4		3.8			
Progression Factor		1.00	1.00		0.73		1.00		1.00			
Incremental Delay, d2		0.2	1.7		2.4		0.0		0.5			
Delay (s)		17.4	1.7		15.9		3.4		4.3			
Level of Service		B	A		B		A		A			
Approach Delay (s)		3.8			15.9			4.3			0.0	
Approach LOS		A			B			A			A	

Intersection Summary		
HCM Average Control Delay	5.2	HCM Level of Service
HCM Volume to Capacity ratio	0.56	A
Actuated Cycle Length (s)	50.0	Sum of lost time (s)
Intersection Capacity Utilization	30.4%	0.0
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 19: Jimmy DeLoach Parkway & JDL Parkway On Ramp

SR 21 Corridor ALT 10B
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↖	↑			↗							↕
Volume (vph)	104	2	0	0	3	1	0	0	0	127	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5							4.5
Lane Util. Factor	1.00	1.00			1.00							1.00
Frt	1.00	1.00			0.97							1.00
Flt Protected	0.95	1.00			1.00							0.95
Satd. Flow (prot)	1543	1624			1800							1318
Flt Permitted	0.76	1.00			1.00							0.95
Satd. Flow (perm)	1226	1624			1800							1318
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	2	0	0	3	1	0	0	0	138	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	113	2	0	0	3	0	0	0	0	0	138	0
Heavy Vehicles (%)	17%	17%	17%	2%	2%	2%	2%	2%	2%	37%	37%	37%
Turn Type	Perm						Perm					
Protected Phases		4			8							2
Permitted Phases	4									2		
Actuated Green, G (s)	8.8	8.8			8.8							32.2
Effective Green, g (s)	8.8	8.8			8.8							32.2
Actuated g/C Ratio	0.18	0.18			0.18							0.64
Clearance Time (s)	4.5	4.5			4.5							4.5
Vehicle Extension (s)	3.0	3.0			3.0							3.0
Lane Grp Cap (vph)	216	286			317							849
v/s Ratio Prot		0.00			0.00							
v/s Ratio Perm	c0.09											0.10
v/c Ratio	0.52	0.01			0.01							0.16
Uniform Delay, d1	18.7	17.0			17.0							3.5
Progression Factor	0.41	0.27			1.00							1.00
Incremental Delay, d2	2.3	0.0			0.0							0.4
Delay (s)	10.0	4.7			17.0							3.9
Level of Service	A	A			B							A
Approach Delay (s)		9.9			17.0			0.0				3.9
Approach LOS		A			B			A				A

Intersection Summary		
HCM Average Control Delay	6.8	HCM Level of Service A
HCM Volume to Capacity ratio	0.24	
Actuated Cycle Length (s)	50.0	Sum of lost time (s) 9.0
Intersection Capacity Utilization	27.0%	ICU Level of Service A
Analysis Period (min)	15	

c Critical Lane Group

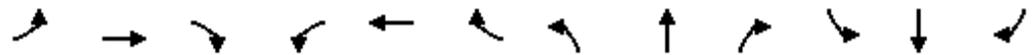
ALT 10
2035
PM Peak Hour

HCM Signalized Intersection Capacity Analysis

SR 21 Corridor ALT 10B

1: SR 30 & SR 21

2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖↗	↕↗	↖	↖	↕↕↕	↗
Volume (vph)	94	182	338	55	74	255	463	2144	143	37	983	151
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0	4.0	7.0	6.4	4.0	7.0	6.4	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1796	1553	1662	1827	1480	3242	3343	1495	1626	4673	1455
Flt Permitted		0.86	1.00	0.23	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1562	1553	411	1827	1480	3242	3343	1495	1626	4673	1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	198	367	60	80	277	503	2330	155	40	1068	164
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	300	367	60	80	277	503	2330	155	40	1068	164
Confl. Peds. (#/hr)				59		119						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	8%	8%	8%	11%	11%	11%
Turn Type	Perm		Free	Perm		Free	Prot		Free	Prot		Free
Protected Phases		4			8		1	6		5		2
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)		29.0	150.0	29.0	29.0	150.0	27.8	96.6	150.0	4.0	72.8	150.0
Effective Green, g (s)		29.0	150.0	29.0	29.0	150.0	27.8	96.6	150.0	4.0	72.8	150.0
Actuated g/C Ratio		0.19	1.00	0.19	0.19	1.00	0.19	0.64	1.00	0.03	0.49	1.00
Clearance Time (s)		7.0		7.0	7.0		7.0	6.4		7.0	6.4	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		302	1553	79	353	1480	601	2153	1495	43	2268	1455
v/s Ratio Prot					0.04		c0.16	c0.70		0.02	0.23	
v/s Ratio Perm		c0.19	0.24	0.15		0.19			0.10			0.11
v/c Ratio		0.99	0.24	0.76	0.23	0.19	0.84	1.08	0.10	0.93	0.47	0.11
Uniform Delay, d1		60.4	0.0	57.2	51.0	0.0	58.9	26.7	0.0	72.9	25.8	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.23	1.12	1.00	1.00	1.00	1.00
Incremental Delay, d2		49.7	0.4	33.5	0.3	0.3	6.6	43.1	0.1	110.0	0.7	0.2
Delay (s)		110.1	0.4	90.7	51.4	0.3	78.9	72.9	0.1	182.9	26.5	0.2
Level of Service		F	A	F	D	A	E	E	A	F	C	A
Approach Delay (s)		49.7			23.1			70.1			28.0	
Approach LOS		D			C			E			C	

Intersection Summary

HCM Average Control Delay	53.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	114.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: SR 21 & I-95 Southbound On-Ramp

SR 21 Corridor ALT 10B
2035 PM



Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	128	2719	0	0	431	980	0	0	0	104	0	208
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	4.0				4.5		4.0
Lane Util. Factor	1.00	0.91			0.95	0.76				1.00		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)	1687	4848			3343	3409				1327		1188
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1687	4848			3343	3409				1327		1188
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	2955	0	0	468	1065	0	0	0	113	0	226
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	139	2955	0	0	468	1065	0	0	0	113	0	226
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	36%	36%	36%
Turn Type	Prot					Free				Prot		Free
Protected Phases	3	8			4					1		
Permitted Phases						Free						Free
Actuated Green, G (s)	17.6	115.5			91.9	150.0				24.0		150.0
Effective Green, g (s)	17.6	115.5			91.9	150.0				24.0		150.0
Actuated g/C Ratio	0.12	0.77			0.61	1.00				0.16		1.00
Clearance Time (s)	6.0	6.0			6.0					4.5		
Vehicle Extension (s)	3.0	3.0			3.0					3.0		
Lane Grp Cap (vph)	198	3733			2048	3409				212		1188
v/s Ratio Prot	0.08	c0.61			0.14					c0.09		
v/s Ratio Perm						0.31						0.19
v/c Ratio	0.70	0.79			0.23	0.31				0.53		0.19
Uniform Delay, d1	63.7	10.2			13.1	0.0				57.9		0.0
Progression Factor	0.84	1.15			0.81	1.00				1.00		1.00
Incremental Delay, d2	5.3	0.6			0.1	0.2				2.6		0.4
Delay (s)	59.1	12.3			10.7	0.2				60.4		0.4
Level of Service	E	B			B	A				E		A
Approach Delay (s)		14.4			3.4			0.0			20.4	
Approach LOS		B			A			A			C	

Intersection Summary

HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: SR 21 & I-95 Northbound Off-Ramp

SR 21 Corridor ALT 10B
2035 PM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑	↑	↑↑	↑↑		↑↑↑		↑			
Volume (vph)	0	404	19	273	262	0	2443	0	27	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	6.4	5.5	6.4		4.5		4.0			
Lane Util. Factor		0.91	1.00	0.97	0.95		0.94		1.00			
Frt		1.00	0.85	1.00	1.00		1.00		0.85			
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		4217	1313	2918	3008		4757		1509			
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		4217	1313	2918	3008		4757		1509			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	439	21	297	285	0	2655	0	29	0	0	0
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	439	3	297	285	0	2655	0	29	0	0	0
Heavy Vehicles (%)	23%	23%	23%	20%	20%	20%	7%	7%	7%	7%	7%	7%
Turn Type			Perm	Prot			custom		Free			
Protected Phases		8		7	4		5					
Permitted Phases			8				5		Free			
Actuated Green, G (s)		18.9	18.9	19.0	43.4		95.7		150.0			
Effective Green, g (s)		18.9	18.9	19.0	43.4		95.7		150.0			
Actuated g/C Ratio		0.13	0.13	0.13	0.29		0.64		1.00			
Clearance Time (s)		6.4	6.4	5.5	6.4		4.5					
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0					
Lane Grp Cap (vph)		531	165	370	870		3035		1509			
v/s Ratio Prot		c0.10		c0.10	0.09		c0.56					
v/s Ratio Perm			0.00						0.02			
v/c Ratio		0.83	0.02	0.80	0.33		0.87		0.02			
Uniform Delay, d1		64.0	57.4	63.7	41.8		22.2		0.0			
Progression Factor		1.00	1.00	1.01	1.06		1.00		1.00			
Incremental Delay, d2		10.2	0.0	11.6	0.2		3.9		0.0			
Delay (s)		74.1	57.4	76.2	44.5		26.1		0.0			
Level of Service		E	E	E	D		C		A			
Approach Delay (s)		73.4			60.6			25.8			0.0	
Approach LOS		E			E			C			A	
Intersection Summary												
HCM Average Control Delay			37.1				HCM Level of Service		D			
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)		16.4			
Intersection Capacity Utilization			85.5%				ICU Level of Service		E			
Analysis Period (min)			15									

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

HCM Signalized Intersection Capacity Analysis
5: Hendley Road & SR 21

SR 21 Corridor ALT 10B
2035 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	6	164	9	3	53	510	109	66	4	154	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1689	1583	1770	1863	1583	1583	2987		1504	3008	1346
Flt Permitted	0.76	0.74	1.00	0.66	1.00	1.00	0.65	1.00		0.63	1.00	1.00
Satd. Flow (perm)	1338	1301	1583	1238	1863	1583	1077	2987		1001	3008	1346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	7	178	10	3	58	554	118	72	4	167	135
RTOR Reduction (vph)	0	0	0	0	0	0	0	41	0	0	0	0
Lane Group Flow (vph)	137	138	178	10	3	58	554	149	0	4	167	135
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	14%	14%	14%	20%	20%	20%
Turn Type	Perm		Free	Perm		Free	pm+pt			pm+pt		Free
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2			6		Free
Actuated Green, G (s)	7.3	7.3	38.3	7.3	7.3	38.3	22.0	16.6		8.5	7.6	38.3
Effective Green, g (s)	7.3	7.3	38.3	7.3	7.3	38.3	22.0	16.6		8.5	7.6	38.3
Actuated g/C Ratio	0.19	0.19	1.00	0.19	0.19	1.00	0.57	0.43		0.22	0.20	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	255	248	1583	236	355	1583	749	1295		234	597	1346
v/s Ratio Prot					0.00		c0.19	0.05		0.00	0.06	
v/s Ratio Perm	0.10	c0.11	0.11	0.01		0.04	c0.23			0.00		0.10
v/c Ratio	0.54	0.56	0.11	0.04	0.01	0.04	0.74	0.12		0.02	0.28	0.10
Uniform Delay, d1	14.0	14.0	0.0	12.6	12.6	0.0	6.4	6.5		11.6	13.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.2	2.7	0.1	0.1	0.0	0.0	3.8	0.0		0.0	0.3	0.1
Delay (s)	16.2	16.7	0.1	12.7	12.6	0.0	10.2	6.5		11.7	13.3	0.1
Level of Service	B	B	A	B	B	A	B	A		B	B	A
Approach Delay (s)		10.0			2.4			9.3			7.5	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: International Trade & SR 21

SR 21 Corridor ALT 10B
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕	↗	↖	↕	↕
Volume (vph)	1	0	1	60	0	188	1	496	279	54	273	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5	4.0	5.5	5.5	4.0	6.1	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1094	979	1530	3059	1369	1612	3223	
Flt Permitted		0.88			0.76	1.00	0.57	1.00	1.00	0.40	1.00	
Satd. Flow (perm)		1538			871	979	918	3059	1369	675	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	1	65	0	204	1	539	303	59	297	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	65	204	1	539	303	59	297	0
Heavy Vehicles (%)	1%	1%	1%	65%	65%	65%	18%	18%	18%	12%	12%	12%
Turn Type	Perm			Perm		Free	Perm		Free	pm+pt		
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		Free	6		Free		2	
Actuated Green, G (s)		9.7			9.7	78.9	48.0	48.0	78.9	58.2	58.2	
Effective Green, g (s)		9.7			9.7	78.9	48.0	48.0	78.9	58.2	58.2	
Actuated g/C Ratio		0.12			0.12	1.00	0.61	0.61	1.00	0.74	0.74	
Clearance Time (s)		5.5			5.5		5.5	5.5		6.1	5.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		189			107	979	558	1861	1369	547	2377	
v/s Ratio Prot								c0.18		0.01	0.09	
v/s Ratio Perm		0.00			c0.07	0.21	0.00		c0.22	0.07		
v/c Ratio		0.01			0.61	0.21	0.00	0.29	0.22	0.11	0.12	
Uniform Delay, d1		30.4			32.8	0.0	6.1	7.3	0.0	3.1	3.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			9.4	0.5	0.0	0.4	0.4	0.1	0.1	
Delay (s)		30.4			42.2	0.5	6.1	7.7	0.4	3.2	3.1	
Level of Service		C			D	A	A	A	A	A	A	
Approach Delay (s)		30.4			10.6			5.1			3.1	
Approach LOS		C			B			A			A	

Intersection Summary

HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Jimmy DeLoach Parkway & SR 21

SR 21 Corridor ALT 10B
2035 PM



Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Volume (vph)	159	653	0	1203	165	68	205	473
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	4.0		7.5	4.0		7.5	7.5
Lane Util. Factor	0.97	1.00		0.95	1.00		0.97	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)	2894	1335		3505	1568		3198	3223
Flt Permitted	0.95	1.00		1.00	1.00		0.95	1.00
Satd. Flow (perm)	2894	1335		3505	1568		3198	3223
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	710	0	1308	179	74	223	514
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	173	710	0	1308	179	0	297	514
Heavy Vehicles (%)	21%	21%	3%	3%	3%	2%	12%	12%
Turn Type		Free	Perm		Free	Prot	Prot	
Protected Phases	4			2		1	1	6
Permitted Phases		Free	2		Free			
Actuated Green, G (s)	10.5	90.0		38.5	90.0		18.0	64.0
Effective Green, g (s)	10.5	90.0		38.5	90.0		18.0	64.0
Actuated g/C Ratio	0.12	1.00		0.43	1.00		0.20	0.71
Clearance Time (s)	8.0			7.5			7.5	7.5
Vehicle Extension (s)	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	338	1335		1499	1568		640	2292
v/s Ratio Prot	0.06			c0.37			0.09	0.16
v/s Ratio Perm		c0.53			0.11			
v/c Ratio	0.51	0.53		0.87	0.11		0.46	0.22
Uniform Delay, d1	37.3	0.0		23.5	0.0		31.7	4.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.5		7.3	0.1		0.5	0.0
Delay (s)	38.7	1.5		30.8	0.1		32.3	4.5
Level of Service	D	A		C	A		C	A
Approach Delay (s)	8.8			27.1				14.7
Approach LOS	A			C				B

Intersection Summary

HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Bonnybridge Road (SR 30) & SR 21

SR 21 Corridor ALT 10B
2035 PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	32	195	1173	16	124	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.5	6.5	5.0	6.5
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)	1626	1455	3505	1568	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.17	1.00
Satd. Flow (perm)	1626	1455	3505	1568	302	3471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	212	1275	17	135	552
RTOR Reduction (vph)	0	0	0	4	0	0
Lane Group Flow (vph)	35	212	1275	13	135	552
Heavy Vehicles (%)	11%	11%	3%	3%	4%	4%
Turn Type		Free		Perm	pm+pt	
Protected Phases	8		6		5	2
Permitted Phases		Free		6	2	
Actuated Green, G (s)	9.0	100.0	61.5	61.5	80.0	78.5
Effective Green, g (s)	9.0	100.0	61.5	61.5	80.0	78.5
Actuated g/C Ratio	0.09	1.00	0.62	0.62	0.80	0.78
Clearance Time (s)	6.0		6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	146	1455	2156	964	414	2725
v/s Ratio Prot	0.02		c0.36		c0.04	0.16
v/s Ratio Perm		c0.15		0.01	0.22	
v/c Ratio	0.24	0.15	0.59	0.01	0.33	0.20
Uniform Delay, d1	42.3	0.0	11.6	7.5	10.0	2.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.2	1.2	0.0	0.5	0.2
Delay (s)	43.2	0.2	12.8	7.5	10.5	2.9
Level of Service	D	A	B	A	B	A
Approach Delay (s)	6.3		12.8			4.4
Approach LOS	A		B			A

Intersection Summary

HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Gulfstream Road & SR 21

SR 21 Corridor ALT 10B
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	427	224	494	39	179	58	716	719	117	57	364	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0	4.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	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)	3367	1827	1553	1719	1810	1538	3400	3505	1568	1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.61	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	1827	1553	1100	1810	1538	3400	3505	1568	1752	3505	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	464	243	537	42	195	63	778	782	127	62	396	136
RTOR Reduction (vph)	0	0	0	0	0	54	0	0	0	0	0	0
Lane Group Flow (vph)	464	243	537	42	195	9	778	782	127	62	396	136
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Free	Perm		Perm	Prot		Free	Prot		Free
Protected Phases	7	4			8		5	2		1		6
Permitted Phases			Free	8		8			Free			Free
Actuated Green, G (s)	14.5	34.0	105.0	15.0	15.0	15.0	25.0	25.0	105.0	25.0	25.0	105.0
Effective Green, g (s)	14.5	34.0	105.0	15.0	15.0	15.0	25.0	25.0	105.0	25.0	25.0	105.0
Actuated g/C Ratio	0.14	0.32	1.00	0.14	0.14	0.14	0.24	0.24	1.00	0.24	0.24	1.00
Clearance Time (s)	4.5	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	3.0	
Lane Grp Cap (vph)	465	592	1553	157	259	220	810	835	1568	417	835	1568
v/s Ratio Prot	c0.14	0.13			c0.11		c0.23	c0.22		0.04	0.11	
v/s Ratio Perm			0.35	0.04		0.01			0.08			0.09
v/c Ratio	1.00	0.41	0.35	0.27	0.75	0.04	0.96	0.94	0.08	0.15	0.47	0.09
Uniform Delay, d1	45.2	27.7	0.0	40.1	43.2	38.8	39.5	39.2	0.0	31.6	34.4	0.0
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	40.9	0.5	0.6	0.9	11.7	0.1	22.4	17.5	0.1	0.2	0.4	0.1
Delay (s)	86.1	28.1	0.6	41.0	54.9	38.9	61.9	56.7	0.1	31.8	34.8	0.1
Level of Service	F	C	A	D	D	D	E	E	A	C	C	A
Approach Delay (s)		37.9			49.6			54.9			26.5	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	44.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
10: Grange Road & SR 21

SR 21 Corridor ALT 10B
2035 PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	22	71	1477	51	41	854
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	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)	1703	1524	3438	1538	1719	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.12	1.00
Satd. Flow (perm)	1703	1524	3438	1538	223	3438
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	24	77	1605	55	45	928
RTOR Reduction (vph)	0	19	0	15	0	0
Lane Group Flow (vph)	24	58	1605	40	45	928
Heavy Vehicles (%)	6%	6%	5%	5%	5%	5%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	4.6	4.6	36.3	36.3	36.3	36.3
Effective Green, g (s)	4.6	4.6	36.3	36.3	36.3	36.3
Actuated g/C Ratio	0.09	0.09	0.73	0.73	0.73	0.73
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	157	140	2501	1119	162	2501
v/s Ratio Prot	0.01		c0.47			0.27
v/s Ratio Perm		c0.04		0.03	0.20	
v/c Ratio	0.15	0.41	0.64	0.04	0.28	0.37
Uniform Delay, d1	20.9	21.4	3.5	1.9	2.3	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	2.0	0.6	0.0	0.9	0.1
Delay (s)	21.3	23.4	4.0	1.9	3.3	2.6
Level of Service	C	C	A	A	A	A
Approach Delay (s)	22.9		4.0			2.7
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay		4.2	HCM Level of Service A
HCM Volume to Capacity ratio		0.62	
Actuated Cycle Length (s)		49.9	Sum of lost time (s) 9.0
Intersection Capacity Utilization		52.7%	ICU Level of Service A
Analysis Period (min)		15	
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 11: Bourne Avenue (SR 307) & SR 21

SR 21 Corridor ALT 10B
 2035 PM

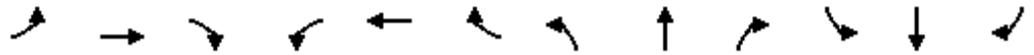
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			  			  	
Volume (vph)	463	417	316	228	386	117	0	1337	47	57	753	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	4.0	8.0	8.0	4.0		8.0	4.0	8.5	8.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2870	2959	1324	2449	2524	1129		5036	1568	1719	4940	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2870	2959	1324	2449	2524	1129		5036	1568	1719	4940	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	503	453	343	248	420	127	0	1453	51	62	818	72
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	503	453	343	248	420	127	0	1453	51	62	818	72
Heavy Vehicles (%)	22%	22%	22%	43%	43%	43%	3%	3%	3%	5%	5%	5%
Turn Type	Prot		Free	Prot		Free			Free	Prot		Free
Protected Phases	7	4		3	8			2		1		6
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	16.1	16.6	98.7	15.6	16.1	98.7		28.6	98.7	5.4	42.5	98.7
Effective Green, g (s)	16.1	16.6	98.7	15.6	16.1	98.7		28.6	98.7	5.4	42.5	98.7
Actuated g/C Ratio	0.16	0.17	1.00	0.16	0.16	1.00		0.29	1.00	0.05	0.43	1.00
Clearance Time (s)	8.0	8.0		8.0	8.0			8.0		8.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	468	498	1324	387	412	1129		1459	1568	94	2127	1538
v/s Ratio Prot	c0.18	0.15		0.10	c0.17			c0.29		0.04	c0.17	
v/s Ratio Perm			c0.26			0.11			0.03			0.05
v/c Ratio	1.07	0.91	0.26	0.64	1.02	0.11		1.00	0.03	0.66	0.38	0.05
Uniform Delay, d1	41.3	40.3	0.0	38.9	41.3	0.0		35.0	0.0	45.7	19.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.1	20.4	0.5	3.6	49.3	0.2		22.4	0.0	15.5	0.1	0.1
Delay (s)	104.4	60.7	0.5	42.5	90.6	0.2		57.4	0.0	61.2	19.3	0.1
Level of Service	F	E	A	D	F	A		E	A	E	B	A
Approach Delay (s)		61.7			61.2			55.5			20.6	
Approach LOS		E			E			E			C	

Intersection Summary		
HCM Average Control Delay	50.9	HCM Level of Service D
HCM Volume to Capacity ratio	0.89	
Actuated Cycle Length (s)	98.7	Sum of lost time (s) 24.0
Intersection Capacity Utilization	84.5%	ICU Level of Service E
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
12: Brampton & SR 21

SR 21 Corridor ALT 10B
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖		↗		↕↗		↖	↕↖	
Volume (vph)	1	1	1	78	0	12	0	914	46	56	558	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Lane Util. Factor		1.00	1.00	1.00		1.00		0.95		1.00	0.95	
Frt		1.00	0.85	1.00		0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1835	1599	1656		1482		3480		1770	3539	
Flt Permitted		0.98	1.00	0.76		1.00		1.00		0.19	1.00	
Satd. Flow (perm)		1835	1599	1319		1482		3480		348	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	85	0	13	0	993	50	61	607	0
RTOR Reduction (vph)	0	0	1	0	0	11	0	4	0	0	0	0
Lane Group Flow (vph)	0	2	0	85	0	2	0	1039	0	61	607	0
Heavy Vehicles (%)	1%	1%	1%	9%	9%	9%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	custom		custom				pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)		8.2	8.2	8.2		8.2		30.2		38.8	38.8	
Effective Green, g (s)		8.2	8.2	8.2		8.2		30.2		38.8	38.8	
Actuated g/C Ratio		0.14	0.14	0.14		0.14		0.50		0.65	0.65	
Clearance Time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Vehicle Extension (s)		3.0	3.0	3.0		3.0		5.0		3.0	5.0	
Lane Grp Cap (vph)		251	219	180		203		1752		322	2289	
v/s Ratio Prot								c0.30		0.01	c0.17	
v/s Ratio Perm		0.00	0.00	c0.06		0.00				0.11		
v/c Ratio		0.01	0.00	0.47		0.01		0.59		0.19	0.27	
Uniform Delay, d1		22.4	22.4	23.9		22.4		10.5		5.0	4.5	
Progression Factor		1.00	1.00	1.00		1.00		0.29		1.00	1.00	
Incremental Delay, d2		0.0	0.0	2.0		0.0		1.3		0.3	0.3	
Delay (s)		22.4	22.4	25.9		22.4		4.4		5.3	4.8	
Level of Service		C	C	C		C		A		A	A	
Approach Delay (s)		22.4			25.4			4.4			4.9	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Minus Avenue & SR 21

SR 21 Corridor ALT 10B
2035 PM

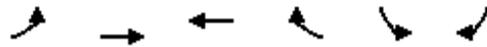


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↕↕		↗	↕↕	
Volume (vph)	96	10	157	168	11	75	68	789	46	71	462	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.95	
Frt		0.92			0.96		1.00	0.99		1.00	0.97	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1649			1962		1770	5043		1770	3442	
Flt Permitted		0.80			0.64		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1347			1288		1770	5043		1770	3442	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	11	171	183	12	82	74	858	50	77	502	112
RTOR Reduction (vph)	0	93	0	0	26	0	0	10	0	0	29	0
Lane Group Flow (vph)	0	193	0	0	251	0	74	899	0	77	585	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Actuated Green, G (s)		14.4			14.4		3.1	22.0		3.6	22.5	
Effective Green, g (s)		14.4			14.4		3.1	22.0		3.6	22.5	
Actuated g/C Ratio		0.24			0.24		0.05	0.37		0.06	0.38	
Clearance Time (s)		7.0			7.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		323			309		91	1849		106	1291	
v/s Ratio Prot							0.04	c0.18		0.04	c0.17	
v/s Ratio Perm		0.14			c0.19							
v/c Ratio		0.60			0.81		0.81	0.49		0.73	0.45	
Uniform Delay, d1		20.2			21.5		28.2	14.6		27.7	14.1	
Progression Factor		1.00			1.00		1.00	1.00		0.77	0.71	
Incremental Delay, d2		3.0			15.0		40.5	0.9		21.4	1.1	
Delay (s)		23.2			36.5		68.6	15.6		42.9	11.2	
Level of Service		C			D		E	B		D	B	
Approach Delay (s)		23.2			36.5			19.6			14.7	
Approach LOS		C			D			B			B	

Intersection Summary		
HCM Average Control Delay	20.6	HCM Level of Service C
HCM Volume to Capacity ratio	0.63	
Actuated Cycle Length (s)	60.0	Sum of lost time (s) 20.0
Intersection Capacity Utilization	62.4%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis
 14: Bourne Avenue (SR 307) & JDLC Off-Ramp

SR 21 Corridor ALT 10B
 2035 PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Volume (vph)	0	521	381	0	440	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		2439	2051		2319	1070
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		2439	2051		2319	1070
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	566	414	0	478	380
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	566	414	0	478	380
Heavy Vehicles (%)	48%	48%	76%	76%	51%	51%
Turn Type						Free
Protected Phases		4	8		6	
Permitted Phases						Free
Actuated Green, G (s)		16.1	16.1		24.9	50.0
Effective Green, g (s)		16.1	16.1		24.9	50.0
Actuated g/C Ratio		0.32	0.32		0.50	1.00
Clearance Time (s)		4.5	4.5		4.5	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		785	660		1155	1070
v/s Ratio Prot		c0.23	0.20		0.21	
v/s Ratio Perm						c0.36
v/c Ratio		0.72	0.63		0.41	0.36
Uniform Delay, d1		15.0	14.4		7.9	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		3.3	1.9		1.1	0.9
Delay (s)		18.2	16.3		9.0	0.9
Level of Service		B	B		A	A
Approach Delay (s)		18.2	16.3		5.4	
Approach LOS		B	B		A	

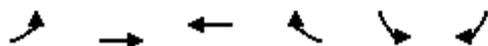
Intersection Summary

HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	4.5
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 15: Bourne Avenue (SR 307) & JDLC On-Ramp

SR 21 Corridor ALT 10B
 2035 PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖		
Volume (vph)	385	576	381	615	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5		
Lane Util. Factor	1.00	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1142	2285	2228	997		
Flt Permitted	0.51	1.00	1.00	1.00		
Satd. Flow (perm)	613	2285	2228	997		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	626	414	668	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	418	626	414	668	0	0
Heavy Vehicles (%)	58%	58%	62%	62%	2%	2%
Turn Type	Perm			Perm		
Protected Phases		4	8			
Permitted Phases	4			8		
Actuated Green, G (s)	41.0	41.0	41.0	41.0		
Effective Green, g (s)	41.0	41.0	41.0	41.0		
Actuated g/C Ratio	1.00	1.00	1.00	1.00		
Clearance Time (s)	4.5	4.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	613	2285	2228	997		
v/s Ratio Prot		0.27	0.19			
v/s Ratio Perm	c0.68			0.67		
v/c Ratio	0.68	0.27	0.19	0.67		
Uniform Delay, d1	0.0	0.0	0.0	0.0		
Progression Factor	1.00	1.00	1.00	1.00		
Incremental Delay, d2	6.0	0.3	0.0	1.8		
Delay (s)	6.0	0.3	0.0	1.8		
Level of Service	A	A	A	A		
Approach Delay (s)		2.6	1.1		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM Average Control Delay	1.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Grange Road & JDLCon Off Ramp

SR 21 Corridor ALT 10B
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Volume (vph)	0	71	21	10	78	0	0	0	0	44	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00						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)		1792	1524	1671	1759						1703	1524
Flt Permitted		1.00	1.00	0.74	1.00						0.95	1.00
Satd. Flow (perm)		1792	1524	1303	1759						1703	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	77	23	11	85	0	0	0	0	48	0	16
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	77	2	11	85	0	0	0	0	0	48	11
Heavy Vehicles (%)	6%	6%	6%	8%	8%	8%	2%	2%	2%	6%	6%	6%
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		5.4	5.4	5.4	5.4						35.6	35.6
Effective Green, g (s)		5.4	5.4	5.4	5.4						35.6	35.6
Actuated g/C Ratio		0.11	0.11	0.11	0.11						0.71	0.71
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		194	165	141	190						1213	1085
v/s Ratio Prot		0.04			c0.05							
v/s Ratio Perm			0.00	0.01							0.03	0.01
v/c Ratio		0.40	0.02	0.08	0.45						0.04	0.01
Uniform Delay, d1		20.8	19.9	20.1	20.9						2.1	2.1
Progression Factor		1.00	1.00	0.32	0.35						1.00	1.00
Incremental Delay, d2		1.3	0.0	0.2	1.7						0.1	0.0
Delay (s)		22.1	20.0	6.6	9.0						2.2	2.1
Level of Service		C	B	A	A						A	A
Approach Delay (s)		21.6			8.7			0.0			2.2	
Approach LOS		C			A			A			A	

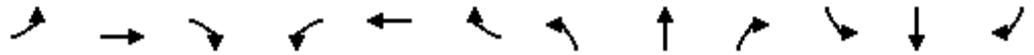
Intersection Summary

HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Grange Road & JDLCon On Ramp

SR 21 Corridor ALT 10B
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	101	0	0	72	115	16	0	33	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1719	1810			1450	1233		1752	1568			
Flt Permitted	0.71	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1278	1810			1450	1233		1752	1568			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	110	0	0	78	125	17	0	36	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	0	12	0	0	0
Lane Group Flow (vph)	15	110	0	0	78	18	0	17	24	0	0	0
Heavy Vehicles (%)	5%	5%	5%	31%	31%	31%	3%	3%	3%	2%	2%	2%
Turn Type	Perm			Perm			Perm	Perm		Perm		
Protected Phases	4				8				2			
Permitted Phases	4						8		2			
Actuated Green, G (s)	7.3	7.3			7.3	7.3			33.7	33.7		
Effective Green, g (s)	7.3	7.3			7.3	7.3			33.7	33.7		
Actuated g/C Ratio	0.15	0.15			0.15	0.15			0.67	0.67		
Clearance Time (s)	4.5	4.5			4.5	4.5			4.5	4.5		
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)	187	264			212	180			1181	1057		
v/s Ratio Prot	c0.06				0.05							
v/s Ratio Perm	0.01				0.01				0.01	c0.02		
v/c Ratio	0.08	0.42			0.37	0.10			0.01	0.02		
Uniform Delay, d1	18.4	19.4			19.3	18.5			2.7	2.7		
Progression Factor	0.71	0.75			1.00	1.00			1.00	1.00		
Incremental Delay, d2	0.2	1.1			1.1	0.2			0.0	0.0		
Delay (s)	13.4	15.5			20.4	18.8			2.7	2.7		
Level of Service	B	B			C	B			A	A		
Approach Delay (s)	15.3				19.4				2.7		0.0	
Approach LOS	B				B				A		A	

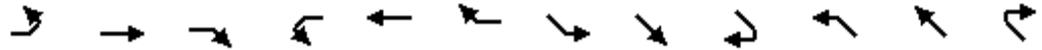
Intersection Summary

HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 18: Jimmy DeLoach Parkway & JDL Parkway Off Ramp

SR 21 Corridor ALT 10B
 2035 PM



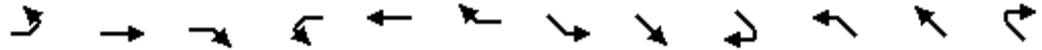
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↑		↑		↑		↑			
Volume (vph)	0	174	196	1	435	0	1	0	377	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5		4.5		4.5			
Lane Util. Factor		0.95	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		2959	1324		1387		1641		1468			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		2959	1324		1386		1641		1468			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	189	213	1	473	0	1	0	410	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	175	0	0	0
Lane Group Flow (vph)	0	189	213	0	474	0	1	0	235	0	0	0
Heavy Vehicles (%)	22%	22%	22%	37%	37%	37%	10%	10%	10%	2%	2%	2%
Turn Type			Free	Perm			custom		custom			
Protected Phases		4			8							
Permitted Phases			Free	8			6		6			
Actuated Green, G (s)		20.7	50.0		20.7		20.3		20.3			
Effective Green, g (s)		20.7	50.0		20.7		20.3		20.3			
Actuated g/C Ratio		0.41	1.00		0.41		0.41		0.41			
Clearance Time (s)		4.5			4.5		4.5		4.5			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1225	1324		574		666		596			
v/s Ratio Prot		0.06										
v/s Ratio Perm			0.16		c0.34		0.00		c0.16			
v/c Ratio		0.15	0.16		0.83		0.00		0.39			
Uniform Delay, d1		9.2	0.0		13.0		8.8		10.5			
Progression Factor		1.00	1.00		0.91		1.00		1.00			
Incremental Delay, d2		0.1	0.3		8.0		0.0		1.9			
Delay (s)		9.2	0.3		19.9		8.8		12.4			
Level of Service		A	A		B		A		B			
Approach Delay (s)		4.5			19.9			12.4			0.0	
Approach LOS		A			B			B			A	

Intersection Summary		
HCM Average Control Delay	12.7	HCM Level of Service
HCM Volume to Capacity ratio	0.61	B
Actuated Cycle Length (s)	50.0	Sum of lost time (s)
Intersection Capacity Utilization	53.8%	9.0
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 19: Jimmy DeLoach Parkway & JDL Parkway On Ramp

SR 21 Corridor ALT 10B
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	173	2	0	0	3	1	0	0	0	433	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5							4.5
Lane Util. Factor	1.00	1.00			1.00							1.00
Frt	1.00	1.00			0.97							1.00
Flt Protected	0.95	1.00			1.00							0.95
Satd. Flow (prot)	1543	1624			1800							1321
Flt Permitted	0.76	1.00			1.00							0.95
Satd. Flow (perm)	1226	1624			1800							1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	2	0	0	3	1	0	0	0	471	0	1
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	188	2	0	0	3	0	0	0	0	0	472	0
Heavy Vehicles (%)	17%	17%	17%	2%	2%	2%	2%	2%	2%	37%	37%	37%
Turn Type	Perm						Perm					
Protected Phases	4				8						2	
Permitted Phases	4										2	
Actuated Green, G (s)	11.4	11.4			11.4							29.6
Effective Green, g (s)	11.4	11.4			11.4							29.6
Actuated g/C Ratio	0.23	0.23			0.23							0.59
Clearance Time (s)	4.5	4.5			4.5							4.5
Vehicle Extension (s)	3.0	3.0			3.0							3.0
Lane Grp Cap (vph)	280	370			410							782
v/s Ratio Prot	0.00				0.00							
v/s Ratio Perm	c0.15										0.36	
v/c Ratio	0.67	0.01			0.01							0.60
Uniform Delay, d1	17.6	14.9			14.9							6.5
Progression Factor	0.47	0.31			1.00							1.00
Incremental Delay, d2	6.2	0.0			0.0							3.4
Delay (s)	14.5	4.6			14.9							9.9
Level of Service	B	A			B							A
Approach Delay (s)	14.4				14.9			0.0			9.9	
Approach LOS	B				B			A			A	

Intersection Summary

HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

ALT 11

2035

AM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: SR 30 & SR 21

SR 21 Corridor ALT 11
2035 AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 	 		 	 	 		  	  	
Volume (vph)	57	56	794	268	59	67	187	471	90	100	2727	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0	4.0	4.5	7.0	4.0	7.0	6.4	4.0	7.0	6.4	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	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)	3367	1827	1553	3367	1827	1553	3242	3343	1495	1626	4673	1455
Flt Permitted	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 (perm)	3367	1827	1553	3367	1827	1553	3242	3343	1495	1626	4673	1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	61	863	291	64	73	203	512	98	109	2964	192
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	62	61	863	291	64	73	203	512	98	109	2964	192
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	8%	8%	8%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.3	8.3	129.6	11.5	10.5	129.6	7.0	71.4	129.6	13.5	77.9	129.6
Effective Green, g (s)	9.3	8.3	129.6	11.5	10.5	129.6	7.0	71.4	129.6	13.5	77.9	129.6
Actuated g/C Ratio	0.07	0.06	1.00	0.09	0.08	1.00	0.05	0.55	1.00	0.10	0.60	1.00
Clearance Time (s)	4.5	7.0		4.5	7.0		7.0	6.4		7.0	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	242	117	1553	299	148	1553	175	1842	1495	169	2809	1455
v/s Ratio Prot	0.02	0.03		c0.09	0.04		c0.06	0.15		0.07	c0.63	
v/s Ratio Perm			c0.56			0.05			0.07			0.13
v/c Ratio	0.26	0.52	0.56	0.97	0.43	0.05	1.16	0.28	0.07	0.64	1.06	0.13
Uniform Delay, d1	56.9	58.7	0.0	58.9	56.7	0.0	61.3	15.4	0.0	55.7	25.8	0.0
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	0.6	4.1	1.4	44.4	2.0	0.1	117.6	0.1	0.1	8.2	33.8	0.2
Delay (s)	57.4	62.9	1.4	103.3	58.7	0.1	178.9	15.5	0.1	63.9	59.7	0.2
Level of Service	E	E	A	F	E	A	F	B	A	E	E	A
Approach Delay (s)		8.8			79.1			54.5			56.3	
Approach LOS		A			E			D			E	

Intersection Summary

HCM Average Control Delay	49.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	129.6	Sum of lost time (s)	13.4
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: SR 21 & I-95 Southbound On-Ramp

SR 21 Corridor ALT 11
2035 AM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		  			 	  					 	
Volume (vph)	58	666	0	0	1069	2720	0	0	0	153	0	57
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	4.0				4.5	4.5	4.0
Lane Util. Factor	1.00	0.91			0.95	0.76				0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	1687	4848			3343	3409				1261	1261	1509
Flt Permitted	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	1687	4848			3343	3409				1261	1261	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	724	0	0	1162	2957	0	0	0	166	0	62
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	63	724	0	0	1162	2957	0	0	0	83	83	62
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	36%	36%	7%
Turn Type	Prot					Free				Prot		Free
Protected Phases	3	8			4					1	6	
Permitted Phases						Free						Free
Actuated Green, G (s)	4.8	39.5			28.7	70.0				20.0	20.0	70.0
Effective Green, g (s)	4.8	39.5			28.7	70.0				20.0	20.0	70.0
Actuated g/C Ratio	0.07	0.56			0.41	1.00				0.29	0.29	1.00
Clearance Time (s)	6.0	6.0			6.0					4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)	116	2736			1371	3409				360	360	1509
v/s Ratio Prot	0.04	0.15			0.35					0.07	0.07	
v/s Ratio Perm						c0.87						0.04
v/c Ratio	0.54	0.26			0.85	0.87				0.23	0.23	0.04
Uniform Delay, d1	31.5	7.8			18.7	0.0				19.1	19.1	0.0
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	5.1	0.1			5.1	3.3				0.3	0.3	0.1
Delay (s)	36.7	7.9			23.7	3.3				19.4	19.4	0.1
Level of Service	D	A			C	A				B	B	A
Approach Delay (s)		10.2			9.0			0.0			14.2	
Approach LOS		B			A			A			B	

Intersection Summary		
HCM Average Control Delay	9.4	HCM Level of Service A
HCM Volume to Capacity ratio	0.87	
Actuated Cycle Length (s)	70.0	Sum of lost time (s) 0.0
Intersection Capacity Utilization	56.6%	ICU Level of Service B
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 3: SR 21 & I-95 Northbound Off-Ramp

SR 21 Corridor ALT 11
 2035 AM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑	↑	↑↑	↑↑		↑↑↑		↑			
Volume (vph)	0	193	14	713	509	0	531	0	78	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	6.4	5.5	6.4		4.5		4.0			
Lane Util. Factor		0.91	1.00	0.97	0.95		0.94		1.00			
Fr _t		1.00	0.85	1.00	1.00		1.00		0.85			
Fl _t Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		4183	1302	2918	3008		4757		1509			
Fl _t Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		4183	1302	2918	3008		4757		1509			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	210	15	775	553	0	577	0	85	0	0	0
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	210	4	775	553	0	577	0	85	0	0	0
Heavy Vehicles (%)	24%	24%	24%	20%	20%	20%	7%	7%	7%	7%	7%	7%
Turn Type			Perm	Prot			custom		Free			
Protected Phases		8		7	4		5					
Permitted Phases			8				2		Free			
Actuated Green, G (s)		15.0	15.0	17.4	37.9		11.2		60.0			
Effective Green, g (s)		15.0	15.0	17.4	37.9		11.2		60.0			
Actuated g/C Ratio		0.25	0.25	0.29	0.63		0.19		1.00			
Clearance Time (s)		6.4	6.4	5.5	6.4		4.5					
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0					
Lane Grp Cap (vph)		1046	326	846	1900		888		1509			
v/s Ratio Prot		0.05		c0.27	c0.18		c0.12					
v/s Ratio Perm			0.00						0.06			
v/c Ratio		0.20	0.01	0.92	0.29		0.65		0.06			
Uniform Delay, d ₁		17.8	16.9	20.6	5.0		22.6		0.0			
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Incremental Delay, d ₂		0.1	0.0	14.4	0.1		1.7		0.1			
Delay (s)		17.9	16.9	35.0	5.1		24.2		0.1			
Level of Service		B	B	C	A		C		A			
Approach Delay (s)		17.8			22.5			21.1			0.0	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM Average Control Delay			21.6				HCM Level of Service		C			
HCM Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			60.0				Sum of lost time (s)		16.4			
Intersection Capacity Utilization			56.6%				ICU Level of Service		B			
Analysis Period (min)			15									

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

HCM Signalized Intersection Capacity Analysis
5: Hendley Road & SR 21

SR 21 Corridor ALT 11
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	6	644	68	3	6	192	32	14	37	254	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	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	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1665	1675	1568	1770	1863	1583	1583	3167	1417	1770	3438	1538
Flt Permitted	0.76	0.74	1.00	0.69	1.00	1.00	0.58	1.00	1.00	0.73	1.00	1.00
Satd. Flow (perm)	1325	1297	1568	1290	1863	1583	970	3167	1417	1366	3438	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	7	700	74	3	7	209	35	15	40	276	211
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	8	0	0	0
Lane Group Flow (vph)	96	95	700	74	3	7	209	35	7	40	276	211
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	14%	14%	14%	2%	5%	5%
Turn Type	Perm		Free	Perm		Free	pm+pt		Perm	pm+pt		Free
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2		2	6		Free
Actuated Green, G (s)	6.5	6.5	39.0	6.5	6.5	39.0	23.5	17.4	17.4	13.7	12.1	39.0
Effective Green, g (s)	6.5	6.5	39.0	6.5	6.5	39.0	23.5	17.4	17.4	13.7	12.1	39.0
Actuated g/C Ratio	0.17	0.17	1.00	0.17	0.17	1.00	0.60	0.45	0.45	0.35	0.31	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	221	216	1568	215	311	1583	693	1413	632	496	1067	1538
v/s Ratio Prot					0.00		0.05	0.01		0.00	0.08	
v/s Ratio Perm	0.07	0.07	0.45	0.06		0.00	0.13		0.00	0.03		0.14
v/c Ratio	0.43	0.44	0.45	0.34	0.01	0.00	0.30	0.02	0.01	0.08	0.26	0.14
Uniform Delay, d1	14.6	14.6	0.0	14.4	13.6	0.0	3.9	6.0	6.0	8.5	10.1	0.0
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	1.4	1.4	0.9	1.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.2
Delay (s)	16.0	16.0	0.9	15.3	13.6	0.0	4.2	6.1	6.0	8.5	10.2	0.2
Level of Service	B	B	A	B	B	A	A	A	A	A	B	A
Approach Delay (s)		4.2			14.0			4.5			6.1	
Approach LOS		A			B			A			A	

Intersection Summary

HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	39.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: International Trade Parkway & SR 21

SR 21 Corridor ALT 11
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕	↗	↖	↕	↗
Volume (vph)	1	0	1	119	0	20	0	217	78	154	811	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5	4.0		5.5	4.0	6.1	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1094	979		3085	1380	1612	3223	
Flt Permitted		0.90			0.76	1.00		1.00	1.00	0.52	1.00	
Satd. Flow (perm)		1575			871	979		3085	1380	886	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	1	129	0	22	0	236	85	167	882	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	129	22	0	236	85	167	883	0
Heavy Vehicles (%)	1%	1%	1%	65%	65%	65%	17%	17%	17%	12%	12%	12%
Turn Type	Perm			Perm		Free	Perm		Free	pm+pt		
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		Free	6		Free		2	
Actuated Green, G (s)		14.4			14.4	79.1		38.7	79.1	53.7	53.7	
Effective Green, g (s)		14.4			14.4	79.1		38.7	79.1	53.7	53.7	
Actuated g/C Ratio		0.18			0.18	1.00		0.49	1.00	0.68	0.68	
Clearance Time (s)		5.5			5.5			5.5		6.1	5.5	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		287			159	979		1509	1380	683	2188	
v/s Ratio Prot								0.08		0.03	c0.27	
v/s Ratio Perm		0.00			c0.15	0.02			0.06	0.14		
v/c Ratio		0.00			0.81	0.02		0.16	0.06	0.24	0.40	
Uniform Delay, d1		26.5			31.0	0.0		11.2	0.0	4.8	5.6	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			25.9	0.0		0.2	0.1	0.2	0.6	
Delay (s)		26.5			57.0	0.0		11.4	0.1	5.0	6.2	
Level of Service		C			E	A		B	A	A	A	
Approach Delay (s)		26.5			48.7			8.4			6.0	
Approach LOS		C			D			A			A	

Intersection Summary

HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Jimmy DeLoach Parkway & SR 21

SR 21 Corridor ALT 11
2035 AM



Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Volume (vph)	218	220	0	371	71	15	598	1158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	4.0		7.5	4.0		6.5	7.5
Lane Util. Factor	0.97	1.00		0.95	1.00		0.97	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)	2918	1346		3505	1568		3133	3223
Flt Permitted	0.95	1.00		1.00	1.00		0.95	1.00
Satd. Flow (perm)	2918	1346		3505	1568		3133	3223
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	237	239	0	403	77	16	650	1259
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	237	239	0	403	77	0	666	1259
Heavy Vehicles (%)	20%	20%	3%	3%	3%	2%	12%	12%
Turn Type		Free	Perm		Free	Prot	Prot	
Protected Phases	4			2		1	1	6
Permitted Phases		Free	2		Free			
Actuated Green, G (s)	11.5	90.0		18.0	90.0		38.5	63.0
Effective Green, g (s)	11.5	90.0		18.0	90.0		38.5	63.0
Actuated g/C Ratio	0.13	1.00		0.20	1.00		0.43	0.70
Clearance Time (s)	8.0			7.5			6.5	7.5
Vehicle Extension (s)	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	373	1346		701	1568		1340	2256
v/s Ratio Prot	c0.08			0.11			0.21	c0.39
v/s Ratio Perm		0.18			0.05			
v/c Ratio	0.64	0.18		0.57	0.05		0.50	0.56
Uniform Delay, d1	37.3	0.0		32.5	0.0		18.7	6.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	0.3		3.4	0.1		1.3	0.3
Delay (s)	40.8	0.3		36.0	0.1		20.0	6.9
Level of Service	D	A		D	A		C	A
Approach Delay (s)	20.5			30.2				11.5
Approach LOS	C			C				B

Intersection Summary

HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 8: Bonnybridge Road (SR 30) & SR 21

SR 21 Corridor ALT 11
 2035 AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	9	62	380	5	353	1023
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.5	6.5	5.0	6.5
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)	1641	1468	3539	1583	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.51	1.00
Satd. Flow (perm)	1641	1468	3539	1583	932	3471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	67	413	5	384	1112
RTOR Reduction (vph)	0	0	0	2	0	0
Lane Group Flow (vph)	10	67	413	3	384	1112
Heavy Vehicles (%)	10%	10%	2%	2%	4%	4%
Turn Type		Free		Perm	pm+pt	
Protected Phases	8		6		5	2
Permitted Phases		Free		6	2	
Actuated Green, G (s)	3.0	100.0	61.1	61.1	86.0	84.5
Effective Green, g (s)	3.0	100.0	61.1	61.1	86.0	84.5
Actuated g/C Ratio	0.03	1.00	0.61	0.61	0.86	0.84
Clearance Time (s)	6.0		6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49	1468	2162	967	949	2933
v/s Ratio Prot	c0.01		0.12		c0.07	0.32
v/s Ratio Perm		0.05		0.00	c0.27	
v/c Ratio	0.20	0.05	0.19	0.00	0.40	0.38
Uniform Delay, d1	47.3	0.0	8.6	7.6	1.7	1.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.1	0.2	0.0	0.3	0.4
Delay (s)	49.4	0.1	8.8	7.6	2.0	2.1
Level of Service	D	A	A	A	A	A
Approach Delay (s)	6.5		8.7			2.1
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Gulfstream Road & SR 21

SR 21 Corridor ALT 11
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗↘	↗	↘	↗	↗↘	↘	↗↘	↗↘	↘	↗	↗↘	↘
Volume (vph)	39	206	478	70	223	53	368	297	57	60	833	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	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)	3367	1827	1553	1703	3406	1524	3400	3505	1568	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.62	1.00	1.00	0.95	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	3367	1827	1553	1109	3406	1524	3400	3505	1568	1036	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	224	520	76	242	58	400	323	62	65	905	162
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	42	224	520	76	242	58	400	323	62	65	905	162
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		Free	Perm		Free	Prot		Free	pm+pt		Free
Protected Phases	7	4			8		5	2			1	6
Permitted Phases			Free	8		Free			Free	6		Free
Actuated Green, G (s)	2.3	18.5	79.3	11.7	11.7	79.3	11.6	35.3	79.3	32.7	28.2	79.3
Effective Green, g (s)	2.3	18.5	79.3	11.7	11.7	79.3	11.6	35.3	79.3	32.7	28.2	79.3
Actuated g/C Ratio	0.03	0.23	1.00	0.15	0.15	1.00	0.15	0.45	1.00	0.41	0.36	1.00
Clearance Time (s)	4.5	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)	98	426	1553	164	503	1524	497	1560	1568	469	1259	1583
v/s Ratio Prot	0.01	c0.12			0.07		c0.12	0.09		0.01	c0.26	
v/s Ratio Perm			c0.33	0.07		0.04			0.04	0.05		0.10
v/c Ratio	0.43	0.53	0.33	0.46	0.48	0.04	0.80	0.21	0.04	0.14	0.72	0.10
Uniform Delay, d1	37.9	26.6	0.0	30.9	31.0	0.0	32.8	13.4	0.0	14.2	22.1	0.0
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	3.0	1.2	0.6	2.1	0.7	0.0	9.2	0.1	0.0	0.1	2.0	0.1
Delay (s)	40.8	27.7	0.6	33.0	31.7	0.0	41.9	13.5	0.0	14.3	24.1	0.1
Level of Service	D	C	A	C	C	A	D	B	A	B	C	A
Approach Delay (s)		10.5			27.1			26.9			20.1	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
10: Grange Road & SR 21

SR 21 Corridor ALT 11
2035 AM



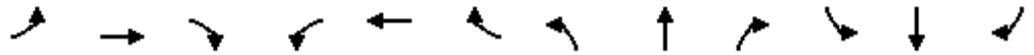
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	139	40	682	12	108	1271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1568	3438	1538	1719	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.36	1.00
Satd. Flow (perm)	1752	1568	3438	1538	654	3438
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	151	43	741	13	117	1382
RTOR Reduction (vph)	0	37	0	3	0	0
Lane Group Flow (vph)	151	6	741	10	117	1382
Heavy Vehicles (%)	3%	3%	5%	5%	5%	5%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	13.9	13.9	77.1	77.1	77.1	77.1
Effective Green, g (s)	13.9	13.9	77.1	77.1	77.1	77.1
Actuated g/C Ratio	0.14	0.14	0.77	0.77	0.77	0.77
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	218	2651	1186	504	2651
v/s Ratio Prot	c0.09		0.22			c0.40
v/s Ratio Perm		0.00		0.01	0.18	
v/c Ratio	0.62	0.03	0.28	0.01	0.23	0.52
Uniform Delay, d1	40.6	37.2	3.3	2.6	3.2	4.4
Progression Factor	1.02	1.12	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.1	0.3	0.0	1.1	0.7
Delay (s)	45.9	41.8	3.6	2.7	4.3	5.1
Level of Service	D	D	A	A	A	A
Approach Delay (s)	45.0		3.6			5.1
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 11: Bourne Avenue (SR 307) & SR 21

SR 21 Corridor ALT 11
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	372	57	35	355	60	295	427	38	90	1002	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	4.0	8.0	8.0	4.0	8.5	8.0	4.0	8.5	8.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	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)	2918	3008	1346	1280	2560	1145	3400	3505	1568	3367	3471	1553
Flt Permitted	0.95	1.00	1.00	0.47	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2918	3008	1346	628	2560	1145	3400	3505	1568	3367	3471	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	225	404	62	38	386	65	321	464	41	98	1089	346
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	225	404	62	38	386	65	321	464	41	98	1089	346
Heavy Vehicles (%)	20%	20%	20%	41%	41%	41%	3%	3%	3%	4%	4%	4%
Turn Type	Prot		Free	Perm		Free	Prot		Free	Prot		Free
Protected Phases	7	4			8		5	2		1		6
Permitted Phases			Free	8		Free			Free			Free
Actuated Green, G (s)	15.0	39.0	110.0	16.0	16.0	110.0	11.3	39.4	110.0	7.1	35.2	110.0
Effective Green, g (s)	15.0	39.0	110.0	16.0	16.0	110.0	11.3	39.4	110.0	7.1	35.2	110.0
Actuated g/C Ratio	0.14	0.35	1.00	0.15	0.15	1.00	0.10	0.36	1.00	0.06	0.32	1.00
Clearance Time (s)	8.0	8.0		8.0	8.0		8.5	8.0		8.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	398	1066	1346	91	372	1145	349	1255	1568	217	1111	1553
v/s Ratio Prot	c0.08	0.13			c0.15		c0.09	0.13		0.03	c0.31	
v/s Ratio Perm			0.05	0.06		0.06			0.03			c0.22
v/c Ratio	0.57	0.38	0.05	0.42	1.04	0.06	0.92	0.37	0.03	0.45	0.98	0.22
Uniform Delay, d1	44.4	26.5	0.0	42.8	47.0	0.0	48.9	26.1	0.0	49.6	37.1	0.0
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	1.8	0.2	0.1	3.1	56.7	0.1	28.4	0.8	0.0	1.5	22.6	0.3
Delay (s)	46.3	26.7	0.1	45.8	103.7	0.1	77.3	27.0	0.0	51.1	59.7	0.3
Level of Service	D	C	A	D	F	A	E	C	A	D	E	A
Approach Delay (s)		30.7			85.5			45.2			45.7	
Approach LOS		C			F			D			D	

Intersection Summary		
HCM Average Control Delay	48.2	HCM Level of Service D
HCM Volume to Capacity ratio	0.91	
Actuated Cycle Length (s)	110.0	Sum of lost time (s) 32.5
Intersection Capacity Utilization	88.2%	ICU Level of Service E
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
12: Brampton Road & SR 21

SR 21 Corridor ALT 11
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖		↗		↑↑↑		↖	↑↑↑	
Volume (vph)	1	1	1	95	0	14	0	1096	42	67	1190	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Lane Util. Factor		1.00	1.00	1.00		1.00		0.91		1.00	0.91	
Frt		1.00	0.85	1.00		0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1835	1599	1656		1482		5057		1770	5085	
Flt Permitted		0.98	1.00	0.76		1.00		1.00		0.20	1.00	
Satd. Flow (perm)		1835	1599	1319		1482		5057		370	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	103	0	15	0	1191	46	73	1293	0
RTOR Reduction (vph)	0	0	1	0	0	13	0	3	0	0	0	0
Lane Group Flow (vph)	0	2	0	103	0	2	0	1234	0	73	1293	0
Heavy Vehicles (%)	1%	1%	1%	9%	9%	9%	2%	2%	2%	2%	2%	2%
Turn Type	Perm		Perm	custom		custom				pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)		10.9	10.9	10.9		10.9		57.2		68.1	66.1	
Effective Green, g (s)		10.9	10.9	10.9		10.9		57.2		68.1	66.1	
Actuated g/C Ratio		0.12	0.12	0.12		0.12		0.64		0.76	0.73	
Clearance Time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Vehicle Extension (s)		3.0	3.0	3.0		3.0		5.0		3.0	5.0	
Lane Grp Cap (vph)		222	194	160		179		3214		348	3735	
v/s Ratio Prot								c0.24		0.01	c0.25	
v/s Ratio Perm		0.00	0.00	c0.08		0.00				0.15		
v/c Ratio		0.01	0.00	0.64		0.01		0.38		0.21	0.35	
Uniform Delay, d1		34.8	34.8	37.7		34.8		7.9		4.8	4.3	
Progression Factor		1.00	1.00	1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0	8.6		0.0		0.3		0.3	0.3	
Delay (s)		34.8	34.8	46.3		34.8		8.3		5.1	4.5	
Level of Service		C	C	D		C		A		A	A	
Approach Delay (s)		34.8			44.8			8.3			4.5	
Approach LOS		C			D			A			A	

Intersection Summary

HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Minus Avenue & SR 21

SR 21 Corridor ALT 11
2035 AM

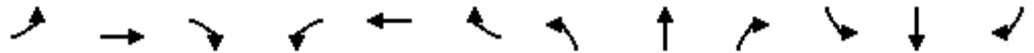


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↑↑↑		↖	↑↑↑	
Volume (vph)	57	10	189	158	9	29	55	1052	49	129	966	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		7.0		4.5	7.0		6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt		0.90		1.00	0.89		1.00	0.99		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1627		1787	1888		1770	5051		1770	4960	
Flt Permitted		0.91		0.35	1.00		0.17	1.00		0.15	1.00	
Satd. Flow (perm)		1499		649	1888		309	5051		287	4960	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	11	205	172	10	32	60	1143	53	140	1050	207
RTOR Reduction (vph)	0	157	0	0	23	0	0	7	0	0	37	0
Lane Group Flow (vph)	0	121	0	172	19	0	60	1189	0	140	1220	0
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			pm+pt			pm+pt			pm+pt		
Protected Phases		8		7	4		5	2		1	6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		11.1		20.2	20.2		27.9	24.1		31.7	26.0	
Effective Green, g (s)		11.1		20.2	20.2		27.9	24.1		31.7	26.0	
Actuated g/C Ratio		0.16		0.29	0.29		0.40	0.34		0.45	0.37	
Clearance Time (s)		7.0		4.5	7.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		238		262	545		202	1739		251	1842	
v/s Ratio Prot				c0.04	0.01		0.02	0.24		c0.05	c0.25	
v/s Ratio Perm		0.08		c0.15			0.10			0.21		
v/c Ratio		0.51		0.66	0.04		0.30	0.68		0.56	0.66	
Uniform Delay, d1		26.9		21.8	17.9		13.5	19.7		12.4	18.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.7		5.8	0.0		0.8	2.2		2.7	1.9	
Delay (s)		28.6		27.6	17.9		14.3	21.9		15.1	20.2	
Level of Service		C		C	B		B	C		B	C	
Approach Delay (s)		28.6			25.7			21.5			19.7	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 14: Bourne Avenue (SR 307) & JDLC Off-Ramp

SR 21 Corridor ALT 11
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘	↑↑					↖↗		↗
Volume (vph)	0	371	129	153	234	0	0	0	0	499	0	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5					4.5		4.5
Lane Util. Factor		0.95	1.00	1.00	0.95					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)		2579	1154	1128	2256					2259		1042
Flt Permitted		1.00	1.00	0.49	1.00					0.95		1.00
Satd. Flow (perm)		2579	1154	579	2256					2259		1042
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	403	140	166	254	0	0	0	0	542	0	235
RTOR Reduction (vph)	0	0	92	0	0	0	0	0	0	0	0	114
Lane Group Flow (vph)	0	403	48	166	254	0	0	0	0	542	0	121
Heavy Vehicles (%)	40%	40%	40%	60%	60%	60%	2%	2%	2%	55%	55%	55%
Turn Type			Perm	Perm						Prot		custom
Protected Phases		4			8					6		
Permitted Phases			4	8								6
Actuated Green, G (s)		22.5	22.5	22.5	22.5					33.5		33.5
Effective Green, g (s)		22.5	22.5	22.5	22.5					33.5		33.5
Actuated g/C Ratio		0.35	0.35	0.35	0.35					0.52		0.52
Clearance Time (s)		4.5	4.5	4.5	4.5					4.5		4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		893	399	200	781					1164		537
v/s Ratio Prot		0.16			0.11					c0.24		
v/s Ratio Perm			0.04	c0.29								0.12
v/c Ratio		0.45	0.12	0.83	0.33					0.47		0.23
Uniform Delay, d1		16.5	14.5	19.5	15.7					10.0		8.6
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		0.4	0.1	23.9	0.2					1.3		1.0
Delay (s)		16.8	14.6	43.3	15.9					11.4		9.6
Level of Service		B	B	D	B					B		A
Approach Delay (s)		16.3			26.7			0.0			10.8	
Approach LOS		B			C			A			B	

Intersection Summary		
HCM Average Control Delay	16.4	HCM Level of Service B
HCM Volume to Capacity ratio	0.61	
Actuated Cycle Length (s)	65.0	Sum of lost time (s) 9.0
Intersection Capacity Utilization	44.2%	ICU Level of Service A
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 15: Bourne Avenue (SR 307) & JDLC On-Ramp

SR 21 Corridor ALT 11
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	789	0	0	372	183	15	0	46	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5				
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00				
Frt	1.00	1.00			1.00	0.85		0.90				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1128	2256			2256	1009		1080				
Flt Permitted	0.51	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	611	2256			2256	1009		1080				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	858	0	0	404	199	16	0	50	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	110	0	32	0	0	0	0
Lane Group Flow (vph)	88	858	0	0	404	89	0	34	0	0	0	0
Heavy Vehicles (%)	60%	60%	60%	60%	60%	60%	56%	56%	56%	2%	2%	2%
Turn Type	Perm					Perm	Perm					
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Actuated Green, G (s)	21.5	21.5			21.5	21.5		17.6				
Effective Green, g (s)	21.5	21.5			21.5	21.5		17.6				
Actuated g/C Ratio	0.45	0.45			0.45	0.45		0.37				
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5				
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0				
Lane Grp Cap (vph)	273	1008			1008	451		395				
v/s Ratio Prot		c0.38			0.18							
v/s Ratio Perm	0.14					0.09		0.03				
v/c Ratio	0.32	0.85			0.40	0.20		0.09				
Uniform Delay, d1	8.6	11.9			9.0	8.1		10.0				
Progression Factor	1.00	1.00			1.00	1.00		1.00				
Incremental Delay, d2	0.7	7.0			0.3	0.2		0.4				
Delay (s)	9.3	18.9			9.2	8.3		10.4				
Level of Service	A	B			A	A		B				
Approach Delay (s)		18.0			8.9			10.4			0.0	
Approach LOS		B			A			B			A	

Intersection Summary

HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Grange Road & JDLC on Off Ramp

SR 21 Corridor ALT 11
2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↑						↖	↗
Volume (vph)	0	77	43	145	39	0	0	0	0	338	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00						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)		1792	1524	1671	1759						1421	1272
Flt Permitted		1.00	1.00	0.70	1.00						0.95	1.00
Satd. Flow (perm)		1792	1524	1236	1759						1421	1272
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	84	47	158	42	0	0	0	0	367	0	152
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	0	0	0	59
Lane Group Flow (vph)	0	84	10	158	42	0	0	0	0	0	367	93
Heavy Vehicles (%)	6%	6%	6%	8%	8%	8%	2%	2%	2%	27%	27%	27%
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		10.3	10.3	10.3	10.3						30.7	30.7
Effective Green, g (s)		10.3	10.3	10.3	10.3						30.7	30.7
Actuated g/C Ratio		0.21	0.21	0.21	0.21						0.61	0.61
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		369	314	255	362						872	781
v/s Ratio Prot		0.05			0.02							
v/s Ratio Perm			0.01	0.13							0.26	0.07
v/c Ratio		0.23	0.03	0.62	0.12						0.42	0.12
Uniform Delay, d1		16.5	15.9	18.1	16.1						5.0	4.0
Progression Factor		0.83	0.95	0.44	0.38						1.00	1.00
Incremental Delay, d2		0.3	0.0	4.3	0.1						1.5	0.3
Delay (s)		14.0	15.1	12.3	6.2						6.5	4.3
Level of Service		B	B	B	A						A	A
Approach Delay (s)		14.4			11.0			0.0			5.9	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Grange Road & JDLC On Ramp

SR 21 Corridor ALT 11
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑			↑	↗		↗	↗			
Volume (vph)	40	375	0	0	177	213	7	0	10	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	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)	1357	1429			1429	1214		1719	1538			
Flt Permitted	0.64	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	910	1429			1429	1214		1719	1538			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	408	0	0	192	232	8	0	11	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	143	0	0	6	0	0	0
Lane Group Flow (vph)	43	408	0	0	192	89	0	8	5	0	0	0
Heavy Vehicles (%)	33%	33%	33%	33%	33%	33%	5%	5%	5%	2%	2%	2%
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	19.2	19.2			19.2	19.2		21.8	21.8			
Effective Green, g (s)	19.2	19.2			19.2	19.2		21.8	21.8			
Actuated g/C Ratio	0.38	0.38			0.38	0.38		0.44	0.44			
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	349	549			549	466		749	671			
v/s Ratio Prot		c0.29			0.13							
v/s Ratio Perm	0.05					0.07		0.00	0.00			
v/c Ratio	0.12	0.74			0.35	0.19		0.01	0.01			
Uniform Delay, d1	10.0	13.3			11.0	10.2		8.0	8.0			
Progression Factor	0.82	0.76			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.2	5.2			0.4	0.2		0.0	0.0			
Delay (s)	8.4	15.3			11.3	10.4		8.0	8.0			
Level of Service	A	B			B	B		A	A			
Approach Delay (s)		14.6			10.8			8.0			0.0	
Approach LOS		B			B			A			A	

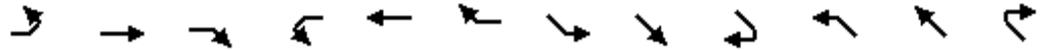
Intersection Summary

HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 18: Jimmy DeLoach Parkway & JDL Parkway Off Ramp

SR 21 Corridor ALT 11
 2035 AM



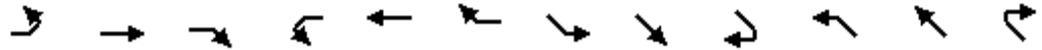
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↑		↑		↑		↑			
Volume (vph)	0	176	493	1	191	0	2	0	247	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5		4.5			
Lane Util. Factor		0.95	1.00		1.00		1.00		1.00			
Fr _t		1.00	0.85		1.00		1.00		0.85			
Fl _t Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		2935	1313		1428		1770		1583			
Fl _t Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		2935	1313		1427		1770		1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	191	536	1	208	0	2	0	268	0	0	0
RTOR Reduction (vph)	0	0	393	0	0	0	0	0	120	0	0	0
Lane Group Flow (vph)	0	191	143	0	209	0	2	0	148	0	0	0
Heavy Vehicles (%)	23%	23%	23%	33%	33%	33%	2%	2%	2%	10%	10%	10%
Turn Type			Perm	Perm			custom		custom			
Protected Phases		4			8							
Permitted Phases			4	8			6		6			
Actuated Green, G (s)		13.3	13.3		13.3		27.7		27.7			
Effective Green, g (s)		13.3	13.3		13.3		27.7		27.7			
Actuated g/C Ratio		0.27	0.27		0.27		0.55		0.55			
Clearance Time (s)		4.5	4.5		4.5		4.5		4.5			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		781	349		380		981		877			
v/s Ratio Prot		0.07										
v/s Ratio Perm			0.11		c0.15		0.00		c0.09			
v/c Ratio		0.24	0.41		0.55		0.00		0.17			
Uniform Delay, d ₁		14.4	15.1		15.8		5.0		5.5			
Progression Factor		1.00	1.00		0.78		1.00		1.00			
Incremental Delay, d ₂		0.2	0.8		1.7		0.0		0.4			
Delay (s)		14.6	15.9		14.0		5.0		5.9			
Level of Service		B	B		B		A		A			
Approach Delay (s)		15.5			14.0			5.9			0.0	
Approach LOS		B			B			A			A	

Intersection Summary		
HCM Average Control Delay	13.1	HCM Level of Service B
HCM Volume to Capacity ratio	0.29	
Actuated Cycle Length (s)	50.0	Sum of lost time (s) 9.0
Intersection Capacity Utilization	48.1%	ICU Level of Service A
Analysis Period (min)	15	

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 19: Jimmy DeLoach Parkway & JDL Parkway On Ramp

SR 21 Corridor ALT 11
 2035 AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	175	3	0	0	3	1	0	0	0	189	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5							4.5
Lane Util. Factor	1.00	1.00			1.00							1.00
Frt	1.00	1.00			0.97							1.00
Flt Protected	0.95	1.00			1.00							0.95
Satd. Flow (prot)	1556	1638			1800							1360
Flt Permitted	0.76	1.00			1.00							0.95
Satd. Flow (perm)	1237	1638			1800							1360
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	3	0	0	3	1	0	0	0	205	0	1
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	190	3	0	0	3	0	0	0	0	0	206	0
Heavy Vehicles (%)	16%	16%	16%	2%	2%	2%	2%	2%	2%	33%	33%	33%
Turn Type	Perm						Perm					
Protected Phases		4			8							2
Permitted Phases	4									2		
Actuated Green, G (s)	11.4	11.4			11.4							29.6
Effective Green, g (s)	11.4	11.4			11.4							29.6
Actuated g/C Ratio	0.23	0.23			0.23							0.59
Clearance Time (s)	4.5	4.5			4.5							4.5
Vehicle Extension (s)	3.0	3.0			3.0							3.0
Lane Grp Cap (vph)	282	373			410							805
v/s Ratio Prot		0.00			0.00							
v/s Ratio Perm	c0.15											0.15
v/c Ratio	0.67	0.01			0.01							0.26
Uniform Delay, d1	17.6	14.9			14.9							4.9
Progression Factor	0.35	0.15			1.00							1.00
Incremental Delay, d2	6.2	0.0			0.0							0.8
Delay (s)	12.3	2.3			14.9							5.7
Level of Service	B	A			B							A
Approach Delay (s)		12.2			14.9			0.0				5.7
Approach LOS		B			B			A				A

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

ALT 11

2035

PM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: SR 30 & SR 21

SR 21 Corridor ALT 11
2035 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 			 			 	 		 	  	
Volume (vph)	277	56	239	100	59	266	710	1789	342	37	996	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0	4.0	4.5	7.0	4.0	7.0	6.4	4.0	7.0	6.4	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	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)	3367	1827	1553	3367	1827	1553	3242	3343	1495	1626	4673	1455
Flt Permitted	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 (perm)	3367	1827	1553	3367	1827	1553	3242	3343	1495	1626	4673	1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	301	61	260	109	64	289	772	1945	372	40	1083	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	301	61	260	109	64	289	772	1945	372	40	1083	71
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	8%	8%	8%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.4	9.1	150.0	14.7	9.4	150.0	46.3	97.3	150.0	4.0	55.0	150.0
Effective Green, g (s)	14.4	9.1	150.0	14.7	9.4	150.0	46.3	97.3	150.0	4.0	55.0	150.0
Actuated g/C Ratio	0.10	0.06	1.00	0.10	0.06	1.00	0.31	0.65	1.00	0.03	0.37	1.00
Clearance Time (s)	4.5	7.0		4.5	7.0		7.0	6.4		7.0	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	323	111	1553	330	114	1553	1001	2168	1495	43	1713	1455
v/s Ratio Prot	c0.09	0.03		0.03	c0.04		c0.24	c0.58		0.02	0.23	
v/s Ratio Perm			0.17			0.19			c0.25			0.05
v/c Ratio	0.93	0.55	0.17	0.33	0.56	0.19	0.77	0.90	0.25	0.93	0.63	0.05
Uniform Delay, d1	67.3	68.5	0.0	63.1	68.3	0.0	47.0	22.1	0.0	72.9	39.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.72	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.7	5.5	0.2	0.6	6.2	0.3	2.6	4.5	0.3	110.0	1.8	0.1
Delay (s)	100.1	73.9	0.2	63.7	74.5	0.3	43.2	20.4	0.3	182.9	40.9	0.1
Level of Service	F	E	A	E	E	A	D	C	A	F	D	A
Approach Delay (s)		55.8			25.5			23.7			43.3	
Approach LOS		E			C			C			D	

Intersection Summary

HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 2: SR 21 & I-95 Southbound On-Ramp

SR 21 Corridor ALT 11
 2035 PM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		  			 	  						
Volume (vph)	141	2782	0	0	384	977	0	0	0	90	0	240
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	4.0				4.5	4.5	4.0
Lane Util. Factor	1.00	0.91			0.95	0.76				0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	1687	4848			3343	3409				1261	1261	1509
Flt Permitted	0.95	1.00			1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	1687	4848			3343	3409				1261	1261	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	3024	0	0	417	1062	0	0	0	98	0	261
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	153	3024	0	0	417	1062	0	0	0	49	49	261
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	36%	36%	7%
Turn Type	Prot					Free				Prot		Free
Protected Phases	3	8			4					1	6	
Permitted Phases						Free						Free
Actuated Green, G (s)	18.5	122.0			97.5	150.0				17.5	17.5	150.0
Effective Green, g (s)	18.5	122.0			97.5	150.0				17.5	17.5	150.0
Actuated g/C Ratio	0.12	0.81			0.65	1.00				0.12	0.12	1.00
Clearance Time (s)	6.0	6.0			6.0					4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)	208	3943			2173	3409				147	147	1509
v/s Ratio Prot	0.09	c0.62			0.12					0.04	0.04	
v/s Ratio Perm						c0.31						0.17
v/c Ratio	0.74	0.77			0.19	0.31				0.33	0.33	0.17
Uniform Delay, d1	63.4	6.9			10.5	0.0				60.9	60.9	0.0
Progression Factor	1.00	1.00			0.33	1.00				1.00	1.00	1.00
Incremental Delay, d2	12.7	0.9			0.0	0.2				1.3	1.3	0.2
Delay (s)	76.1	7.9			3.5	0.2				62.2	62.2	0.2
Level of Service	E	A			A	A				E	E	A
Approach Delay (s)		11.2			1.1			0.0			17.2	
Approach LOS		B			A			A			B	

Intersection Summary

HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 3: SR 21 & I-95 Northbound Off-Ramp

SR 21 Corridor ALT 11
 2035 PM

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑	↑	↑↑	↑↑		↑↑↑		↑			
Volume (vph)	0	472	35	256	218	0	2451	0	33	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	4.0	5.5	6.4		4.5		4.0			
Lane Util. Factor		0.91	1.00	0.97	0.95		0.94		1.00			
Fr _t		1.00	0.85	1.00	1.00		1.00		0.85			
Fl _t Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		4183	1302	2918	3008		4757		1509			
Fl _t Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		4183	1302	2918	3008		4757		1509			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	513	38	278	237	0	2664	0	36	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	513	38	278	237	0	2664	0	36	0	0	0
Heavy Vehicles (%)	24%	24%	24%	20%	20%	20%	7%	7%	7%	7%	7%	7%
Turn Type			Free	Prot			Prot		Free			
Protected Phases		8		7	4		5					
Permitted Phases			Free						Free			
Actuated Green, G (s)		15.3	110.0	11.5	32.3		66.8		110.0			
Effective Green, g (s)		15.3	110.0	11.5	32.3		66.8		110.0			
Actuated g/C Ratio		0.14	1.00	0.10	0.29		0.61		1.00			
Clearance Time (s)		6.4		5.5	6.4		4.5					
Vehicle Extension (s)		3.0		3.0	3.0		3.0					
Lane Grp Cap (vph)		582	1302	305	883		2889		1509			
v/s Ratio Prot		c0.12		c0.10	0.08		c0.56					
v/s Ratio Perm			0.03						0.02			
v/c Ratio		0.88	0.03	0.91	0.27		0.92		0.02			
Uniform Delay, d ₁		46.5	0.0	48.7	29.8		19.3		0.0			
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Incremental Delay, d ₂		14.6	0.0	29.8	0.2		6.3		0.0			
Delay (s)		61.0	0.0	78.5	30.0		25.5		0.0			
Level of Service		E	A	E	C		C		A			
Approach Delay (s)		56.8			56.2			25.2			0.0	
Approach LOS		E			E			C			A	
Intersection Summary												
HCM Average Control Delay			34.1			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.4			
Intersection Capacity Utilization			85.7%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

HCM Signalized Intersection Capacity Analysis
5: Hendley Road & SR 21

SR 21 Corridor ALT 11
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	342	6	206	27	3	27	581	138	54	17	114	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	1672	1568	1770	1863	1583	1583	3033		1504	3008	1346
Flt Permitted	0.76	0.73	1.00	0.61	1.00	1.00	0.48	1.00		0.62	1.00	1.00
Satd. Flow (perm)	1325	1283	1568	1129	1863	1583	799	3033		983	3008	1346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	372	7	224	29	3	29	632	150	59	18	124	84
RTOR Reduction (vph)	0	0	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	190	189	224	29	3	29	632	180	0	18	124	84
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	14%	14%	14%	20%	20%	20%
Turn Type	Perm		Free	Perm		Free	pm+pt			pm+pt		Free
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2			6		Free
Actuated Green, G (s)	11.7	11.7	51.9	11.7	11.7	51.9	31.2	26.0		11.8	11.1	51.9
Effective Green, g (s)	11.7	11.7	51.9	11.7	11.7	51.9	31.2	26.0		11.8	11.1	51.9
Actuated g/C Ratio	0.23	0.23	1.00	0.23	0.23	1.00	0.60	0.50		0.23	0.21	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	299	289	1568	255	420	1583	716	1519		231	643	1346
v/s Ratio Prot					0.00		c0.27	0.06		0.00	0.04	
v/s Ratio Perm	0.14	c0.15	0.14	0.03		0.02	c0.27			0.02		0.06
v/c Ratio	0.64	0.65	0.14	0.11	0.01	0.02	0.88	0.12		0.08	0.19	0.06
Uniform Delay, d1	18.2	18.3	0.0	16.0	15.6	0.0	7.3	6.9		15.7	16.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.4	5.2	0.2	0.2	0.0	0.0	12.4	0.0		0.1	0.1	0.1
Delay (s)	22.5	23.5	0.2	16.2	15.6	0.0	19.7	6.9		15.8	16.9	0.1
Level of Service	C	C	A	B	B	A	B	A		B	B	A
Approach Delay (s)		14.5			8.5			16.5			10.6	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: International Trade Parkway & SR 21

SR 21 Corridor ALT 11
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕	↗	↖	↕	↗
Volume (vph)	1	0	1	60	0	133	1	639	228	55	292	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5	4.0	5.5	5.5	4.0	6.1	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1094	979	1543	3085	1380	1612	3223	
Flt Permitted		0.81			1.00	1.00	0.56	1.00	1.00	0.32	1.00	
Satd. Flow (perm)		1418			1152	979	909	3085	1380	536	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	1	65	0	145	1	695	248	60	317	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	65	145	1	695	248	60	317	0
Heavy Vehicles (%)	1%	1%	1%	65%	65%	65%	17%	17%	17%	12%	12%	12%
Turn Type	Perm			Perm		Free	Perm		Free	pm+pt		
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		Free	6		Free		2	
Actuated Green, G (s)		4.0			4.0	51.8	28.9	28.9	51.8	36.8	36.8	
Effective Green, g (s)		4.0			4.0	51.8	28.9	28.9	51.8	36.8	36.8	
Actuated g/C Ratio		0.08			0.08	1.00	0.56	0.56	1.00	0.71	0.71	
Clearance Time (s)		5.5			5.5		5.5	5.5		6.1	5.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		109			89	979	507	1721	1380	418	2290	
v/s Ratio Prot								c0.23		0.00	0.10	
v/s Ratio Perm		0.00			c0.06	0.15	0.00		c0.18	0.10		
v/c Ratio		0.01			0.73	0.15	0.00	0.40	0.18	0.14	0.14	
Uniform Delay, d1		22.1			23.4	0.0	5.1	6.5	0.0	2.7	2.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			26.2	0.3	0.0	0.7	0.3	0.2	0.1	
Delay (s)		22.1			49.6	0.3	5.1	7.2	0.3	2.9	2.5	
Level of Service		C			D	A	A	A	A	A	A	
Approach Delay (s)		22.1			15.6			5.4			2.6	
Approach LOS		C			B			A			A	

Intersection Summary

HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Jimmy DeLoach Parkway & SR 21

SR 21 Corridor ALT 11
2035 PM



Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations	↶↷	↶	↶	↶↶	↶		↶↷	↶↶
Volume (vph)	166	715	0	1024	194	44	171	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	4.0		7.5	4.0		6.5	7.5
Lane Util. Factor	0.97	1.00		0.95	1.00		0.97	0.95
Fr _t	1.00	0.85		1.00	0.85		1.00	1.00
Fl _t Protected	0.95	1.00		1.00	1.00		0.95	1.00
Satd. Flow (prot)	2918	1346		3505	1568		3185	3223
Fl _t Permitted	0.95	1.00		1.00	1.00		0.38	1.00
Satd. Flow (perm)	2918	1346		3505	1568		1277	3223
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	777	0	1113	211	48	186	497
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	180	777	0	1113	211	0	234	497
Heavy Vehicles (%)	20%	20%	3%	3%	3%	2%	12%	12%
Turn Type		Free	Perm		Free	custom	Prot	
Protected Phases	4			2			1	6
Permitted Phases		Free	2		Free	1		
Actuated Green, G (s)	9.4	61.9		20.0	61.9		10.5	37.0
Effective Green, g (s)	9.4	61.9		20.0	61.9		10.5	37.0
Actuated g/C Ratio	0.15	1.00		0.32	1.00		0.17	0.60
Clearance Time (s)	8.0			7.5			6.5	7.5
Vehicle Extension (s)	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	443	1346		1132	1568		217	1927
v/s Ratio Prot	0.06			c0.32				0.15
v/s Ratio Perm		c0.58			0.13		c0.18	
v/c Ratio	0.41	0.58		0.98	0.13		1.08	0.26
Uniform Delay, d ₁	23.7	0.0		20.8	0.0		25.7	5.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d ₂	0.6	1.8		22.6	0.2		83.5	0.1
Delay (s)	24.3	1.8		43.4	0.2		109.2	6.0
Level of Service	C	A		D	A		F	A
Approach Delay (s)	6.0			36.5				39.0
Approach LOS	A			D				D

Intersection Summary

HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 8: Bonnybridge Road (SR 30) & SR 21

SR 21 Corridor ALT 11
 2035 PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	185	1033	11	106	517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.5	6.5	5.0	6.5
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)	1641	1468	3539	1583	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.20	1.00
Satd. Flow (perm)	1641	1468	3539	1583	366	3471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	201	1123	12	115	562
RTOR Reduction (vph)	0	0	0	6	0	0
Lane Group Flow (vph)	5	201	1123	6	115	562
Heavy Vehicles (%)	10%	10%	2%	2%	4%	4%
Turn Type		Free		Perm	pm+pt	
Protected Phases	8		6		5	2
Permitted Phases		Free		6	2	
Actuated Green, G (s)	2.3	54.9	27.2	27.2	41.6	40.1
Effective Green, g (s)	2.3	54.9	27.2	27.2	41.6	40.1
Actuated g/C Ratio	0.04	1.00	0.50	0.50	0.76	0.73
Clearance Time (s)	6.0		6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	69	1468	1753	784	474	2535
v/s Ratio Prot	0.00		c0.32		c0.03	0.16
v/s Ratio Perm		c0.14		0.00	0.15	
v/c Ratio	0.07	0.14	0.64	0.01	0.24	0.22
Uniform Delay, d1	25.3	0.0	10.2	7.0	5.0	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2	0.8	0.0	0.3	0.0
Delay (s)	25.7	0.2	11.0	7.0	5.3	2.4
Level of Service	C	A	B	A	A	A
Approach Delay (s)	0.8		11.0			2.9
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	6.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Gulfstream Road & SR 21

SR 21 Corridor ALT 11
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	337	132	474	74	203	115	748	604	117	56	347	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	4.5	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	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)	3367	1827	1553	1703	3406	1524	3400	3505	1568	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.67	1.00	1.00	0.95	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	3367	1827	1553	1193	3406	1524	3400	3505	1568	749	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	366	143	515	80	221	125	813	657	127	61	377	135
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	366	143	515	80	221	125	813	657	127	61	377	135
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		Free	Perm		Free	Prot		Free	pm+pt		Free
Protected Phases	7	4			8		5	2			1	6
Permitted Phases			Free	8		Free			Free	6		Free
Actuated Green, G (s)	18.2	36.6	118.4	13.9	13.9	118.4	34.2	58.7	118.4	31.2	26.6	118.4
Effective Green, g (s)	18.2	36.6	118.4	13.9	13.9	118.4	34.2	58.7	118.4	31.2	26.6	118.4
Actuated g/C Ratio	0.15	0.31	1.00	0.12	0.12	1.00	0.29	0.50	1.00	0.26	0.22	1.00
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		4.5	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)	518	565	1553	140	400	1524	982	1738	1568	237	795	1583
v/s Ratio Prot	c0.11	0.08			0.06		c0.24	0.19		0.01	c0.11	
v/s Ratio Perm			0.33	c0.07		0.08			0.08	0.06		0.09
v/c Ratio	0.71	0.25	0.33	0.57	0.55	0.08	0.83	0.38	0.08	0.26	0.47	0.09
Uniform Delay, d1	47.6	30.7	0.0	49.4	49.3	0.0	39.3	18.5	0.0	33.3	39.8	0.0
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	4.4	0.2	0.6	5.5	1.7	0.1	5.8	0.1	0.1	0.6	0.4	0.1
Delay (s)	51.9	30.9	0.6	55.0	51.0	0.1	45.2	18.7	0.1	33.8	40.3	0.1
Level of Service	D	C	A	D	D	A	D	B	A	C	D	A
Approach Delay (s)		23.2			36.8			30.7			30.1	
Approach LOS		C			D			C			C	

Intersection Summary

HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	25.5
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 10: Grange Road & SR 21

SR 21 Corridor ALT 11
 2035 PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	116	93	1376	23	70	824
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	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)	1752	1568	3438	1538	1719	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.13	1.00
Satd. Flow (perm)	1752	1568	3438	1538	237	3438
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	126	101	1496	25	76	896
RTOR Reduction (vph)	0	31	0	8	0	0
Lane Group Flow (vph)	126	70	1496	17	76	896
Heavy Vehicles (%)	3%	3%	5%	5%	5%	5%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	7.4	7.4	33.3	33.3	33.3	33.3
Effective Green, g (s)	7.4	7.4	33.3	33.3	33.3	33.3
Actuated g/C Ratio	0.15	0.15	0.67	0.67	0.67	0.67
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	261	233	2304	1030	159	2304
v/s Ratio Prot	c0.07		c0.44			0.26
v/s Ratio Perm		0.04		0.01	0.32	
v/c Ratio	0.48	0.30	0.65	0.02	0.48	0.39
Uniform Delay, d1	19.4	18.8	4.8	2.7	4.0	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.7	0.6	0.0	2.3	0.1
Delay (s)	20.8	19.6	5.4	2.7	6.2	3.8
Level of Service	C	B	A	A	A	A
Approach Delay (s)	20.3		5.4			4.0
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	49.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 11: Bourne Avenue (SR 307) & SR 21

SR 21 Corridor ALT 11
 2035 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	606	372	310	32	305	171	430	622	54	60	668	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	4.0	8.0	8.0	4.0	8.5	8.0	4.0	8.5	8.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	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)	2918	3008	1346	1280	2560	1145	3400	3505	1568	3367	3471	1553
Flt Permitted	0.95	1.00	1.00	0.51	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2918	3008	1346	693	2560	1145	3400	3505	1568	3367	3471	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	659	404	337	35	332	186	467	676	59	65	726	230
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	659	404	337	35	332	186	467	676	59	65	726	230
Heavy Vehicles (%)	20%	20%	20%	41%	41%	41%	3%	3%	3%	4%	4%	4%
Turn Type	Prot		Free	Perm		Free	Prot		Free	Prot		Free
Protected Phases	7	4			8		5	2		1		6
Permitted Phases			Free	8		Free			Free			Free
Actuated Green, G (s)	30.3	56.0	130.0	17.7	17.7	130.0	21.2	43.9	130.0	5.6	28.3	130.0
Effective Green, g (s)	30.3	56.0	130.0	17.7	17.7	130.0	21.2	43.9	130.0	5.6	28.3	130.0
Actuated g/C Ratio	0.23	0.43	1.00	0.14	0.14	1.00	0.16	0.34	1.00	0.04	0.22	1.00
Clearance Time (s)	8.0	8.0		8.0	8.0		8.5	8.0		8.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	680	1296	1346	94	349	1145	554	1184	1568	145	756	1553
v/s Ratio Prot	c0.23	0.13			c0.13		c0.14	0.19		0.02	c0.21	
v/s Ratio Perm			0.25	0.05		0.16			0.04			0.15
v/c Ratio	0.97	0.31	0.25	0.37	0.95	0.16	0.84	0.57	0.04	0.45	0.96	0.15
Uniform Delay, d1	49.4	24.3	0.0	51.1	55.7	0.0	52.8	35.3	0.0	60.7	50.3	0.0
Progression Factor	1.00	1.00	1.00	0.82	0.80	1.00	0.75	0.67	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	0.1	0.4	2.4	34.5	0.3	10.1	1.8	0.0	2.2	24.4	0.2
Delay (s)	76.0	24.5	0.4	44.2	78.9	0.3	49.6	25.6	0.0	62.9	74.7	0.2
Level of Service	E	C	A	D	E	A	D	C	A	E	E	A
Approach Delay (s)		43.0			50.3			33.7			57.1	
Approach LOS		D			D			C			E	

Intersection Summary

HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
12: Brampton Road & SR 21

SR 21 Corridor ALT 11
2035 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	1	79	0	18	0	1339	52	56	984	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Lane Util. Factor		1.00	1.00	1.00		1.00		0.91		1.00	0.91	
Frt		1.00	0.85	1.00		0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1835	1599	1656		1482		5057		1770	5085	
Flt Permitted		0.98	1.00	0.76		1.00		1.00		0.14	1.00	
Satd. Flow (perm)		1835	1599	1319		1482		5057		252	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	86	0	20	0	1455	57	61	1070	0
RTOR Reduction (vph)	0	0	1	0	0	17	0	5	0	0	0	0
Lane Group Flow (vph)	0	2	0	86	0	3	0	1507	0	61	1070	0
Heavy Vehicles (%)	1%	1%	1%	9%	9%	9%	2%	2%	2%	2%	2%	2%
Turn Type	Perm		Perm	custom		custom				pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4		4	8		8				6		
Actuated Green, G (s)		8.5	8.5	8.5		8.5		35.7		45.5	43.5	
Effective Green, g (s)		8.5	8.5	8.5		8.5		35.7		45.5	43.5	
Actuated g/C Ratio		0.13	0.13	0.13		0.13		0.55		0.70	0.67	
Clearance Time (s)		6.5	6.5	6.5		6.5		6.5		4.5	6.5	
Vehicle Extension (s)		3.0	3.0	3.0		3.0		5.0		3.0	5.0	
Lane Grp Cap (vph)		240	209	172		194		2777		253	3403	
v/s Ratio Prot								c0.30		0.01	c0.21	
v/s Ratio Perm		0.00	0.00	c0.07		0.00				0.16		
v/c Ratio		0.01	0.00	0.50		0.01		0.54		0.24	0.31	
Uniform Delay, d1		24.6	24.6	26.3		24.6		9.4		6.5	4.5	
Progression Factor		1.00	1.00	1.00		1.00		0.13		0.46	0.47	
Incremental Delay, d2		0.0	0.0	2.3		0.0		0.6		0.4	0.2	
Delay (s)		24.6	24.6	28.6		24.6		1.8		3.4	2.3	
Level of Service		C	C	C		C		A		A	A	
Approach Delay (s)		24.6			27.8			1.8			2.4	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM Average Control Delay			3.1									A
HCM Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			65.0							13.0		
Intersection Capacity Utilization			56.6%									B
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
13: Minus Avenue & SR 21

SR 21 Corridor ALT 11
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↑↑↑		↖	↑↑↑	
Volume (vph)	70	10	203	178	9	65	65	1256	59	57	899	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		7.0		7.0	7.0		6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt		0.90		1.00	0.87		1.00	0.99		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1630		1787	1852		1770	5051		1770	5004	
Flt Permitted		0.89		0.50	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1469		940	1852		1770	5051		1770	5004	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	11	221	193	10	71	71	1365	64	62	977	116
RTOR Reduction (vph)	0	145	0	0	54	0	0	7	0	0	21	0
Lane Group Flow (vph)	0	163	0	193	27	0	71	1422	0	62	1072	0
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Turn Type	Perm		Perm		Prot		Prot					
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Actuated Green, G (s)		15.5		15.5	15.5		3.3	26.4		3.1	26.2	
Effective Green, g (s)		15.5		15.5	15.5		3.3	26.4		3.1	26.2	
Actuated g/C Ratio		0.24		0.24	0.24		0.05	0.41		0.05	0.40	
Clearance Time (s)		7.0		7.0	7.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		350		224	442		90	2051		84	2017	
v/s Ratio Prot					0.01		0.04	c0.28		0.04	c0.21	
v/s Ratio Perm		0.11		c0.21								
v/c Ratio		0.46		0.86	0.06		0.79	0.69		0.74	0.53	
Uniform Delay, d1		21.2		23.7	19.1		30.5	16.0		30.5	14.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00		0.95	0.89	
Incremental Delay, d2		1.0		27.1	0.1		35.5	2.0		27.6	1.0	
Delay (s)		22.2		50.8	19.2		66.0	17.9		56.7	14.1	
Level of Service		C		D	B		E	B		E	B	
Approach Delay (s)		22.2			41.4			20.2			16.4	
Approach LOS		C			D			C			B	

Intersection Summary

HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 14: Bourne Avenue (SR 307) & JDLC Off-Ramp

SR 21 Corridor ALT 11
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘	↑↑					↖↗		↗
Volume (vph)	0	405	81	96	313	0	0	0	0	312	0	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5					4.5		4.5
Lane Util. Factor		0.95	1.00	1.00	0.95					0.97		1.00
Fr _t		1.00	0.85	1.00	1.00					1.00		0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		2579	1154	1128	2256					2259		1042
Fl _t Permitted		1.00	1.00	0.44	1.00					0.95		1.00
Satd. Flow (perm)		2579	1154	517	2256					2259		1042
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	440	88	104	340	0	0	0	0	339	0	212
RTOR Reduction (vph)	0	0	63	0	0	0	0	0	0	0	0	91
Lane Group Flow (vph)	0	440	25	104	340	0	0	0	0	339	0	121
Heavy Vehicles (%)	40%	40%	40%	60%	60%	60%	2%	2%	2%	55%	55%	55%
Turn Type			Perm	Perm						Prot		custom
Protected Phases		4			8					6		
Permitted Phases			4	8								6
Actuated Green, G (s)		18.8	18.8	18.8	18.8					37.2		37.2
Effective Green, g (s)		18.8	18.8	18.8	18.8					37.2		37.2
Actuated g/C Ratio		0.29	0.29	0.29	0.29					0.57		0.57
Clearance Time (s)		4.5	4.5	4.5	4.5					4.5		4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		746	334	150	653					1293		596
v/s Ratio Prot		0.17			0.15					c0.15		
v/s Ratio Perm			0.02	c0.20								0.12
v/c Ratio		0.59	0.08	0.69	0.52					0.26		0.20
Uniform Delay, d ₁		19.8	16.8	20.5	19.3					7.0		6.7
Progression Factor		0.74	0.88	1.00	1.00					1.00		1.00
Incremental Delay, d ₂		1.2	0.1	13.0	0.8					0.5		0.8
Delay (s)		15.7	15.0	33.5	20.1					7.5		7.5
Level of Service		B	B	C	C					A		A
Approach Delay (s)		15.6			23.2			0.0			7.5	
Approach LOS		B			C			A			A	

Intersection Summary

HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 15: Bourne Avenue (SR 307) & JDLC On-Ramp

SR 21 Corridor ALT 11
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑	↗		↕				
Volume (vph)	200	517	0	0	344	608	65	0	121	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5				
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00				
Frt	1.00	1.00			1.00	0.85		0.91				
Flt Protected	0.95	1.00			1.00	1.00		0.98				
Satd. Flow (prot)	1128	2256			2256	1009		1092				
Flt Permitted	0.53	1.00			1.00	1.00		0.98				
Satd. Flow (perm)	629	2256			2256	1009		1092				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	562	0	0	374	661	71	0	132	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	361	0	85	0	0	0	0
Lane Group Flow (vph)	217	562	0	0	374	300	0	118	0	0	0	0
Heavy Vehicles (%)	60%	60%	60%	60%	60%	60%	56%	56%	56%	2%	2%	2%
Turn Type	Perm					Perm	Perm					
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Actuated Green, G (s)	21.7	21.7			21.7	21.7		17.1				
Effective Green, g (s)	21.7	21.7			21.7	21.7		17.1				
Actuated g/C Ratio	0.45	0.45			0.45	0.45		0.36				
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5				
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0				
Lane Grp Cap (vph)	286	1024			1024	458		391				
v/s Ratio Prot		0.25			0.17							
v/s Ratio Perm	c0.35					0.30		0.11				
v/c Ratio	0.76	0.55			0.37	0.66		0.30				
Uniform Delay, d1	10.9	9.5			8.5	10.1		11.1				
Progression Factor	1.00	1.00			1.00	1.00		1.00				
Incremental Delay, d2	11.0	0.6			0.2	3.4		2.0				
Delay (s)	21.8	10.1			8.8	13.5		13.0				
Level of Service	C	B			A	B		B				
Approach Delay (s)		13.4			11.8			13.0			0.0	
Approach LOS		B			B			B			A	

Intersection Summary

HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Grange Road & JDLCOn Off Ramp

SR 21 Corridor ALT 11
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↑						↖	↗
Volume (vph)	0	66	27	104	54	0	0	0	0	141	0	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00						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)		1792	1524	1671	1759						1421	1272
Flt Permitted		1.00	1.00	0.71	1.00						0.95	1.00
Satd. Flow (perm)		1792	1524	1249	1759						1421	1272
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	72	29	113	59	0	0	0	0	153	0	168
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	0	0	0	60
Lane Group Flow (vph)	0	72	5	113	59	0	0	0	0	0	153	108
Heavy Vehicles (%)	6%	6%	6%	8%	8%	8%	2%	2%	2%	27%	27%	27%
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		8.8	8.8	8.8	8.8						32.2	32.2
Effective Green, g (s)		8.8	8.8	8.8	8.8						32.2	32.2
Actuated g/C Ratio		0.18	0.18	0.18	0.18						0.64	0.64
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		315	268	220	310						915	819
v/s Ratio Prot		0.04			0.03							
v/s Ratio Perm			0.00	c0.09							0.11	0.09
v/c Ratio		0.23	0.02	0.51	0.19						0.17	0.13
Uniform Delay, d1		17.7	17.0	18.7	17.6						3.6	3.5
Progression Factor		1.00	1.00	0.31	0.29						1.00	1.00
Incremental Delay, d2		0.4	0.0	2.0	0.3						0.4	0.3
Delay (s)		18.1	17.1	7.9	5.4						3.9	3.8
Level of Service		B	B	A	A						A	A
Approach Delay (s)		17.8			7.0			0.0			3.9	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
17: Grange Road & JDLC On Ramp

SR 21 Corridor ALT 11
2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	167	0	0	136	160	22	0	29	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	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)	1357	1429			1429	1214		1719	1538			
Flt Permitted	0.66	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	947	1429			1429	1214		1719	1538			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	182	0	0	148	174	24	0	32	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	138	0	0	12	0	0	0
Lane Group Flow (vph)	43	182	0	0	148	36	0	24	20	0	0	0
Heavy Vehicles (%)	33%	33%	33%	33%	33%	33%	5%	5%	5%	2%	2%	2%
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	10.4	10.4			10.4	10.4		30.6	30.6			
Effective Green, g (s)	10.4	10.4			10.4	10.4		30.6	30.6			
Actuated g/C Ratio	0.21	0.21			0.21	0.21		0.61	0.61			
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	197	297			297	253		1052	941			
v/s Ratio Prot		c0.13			0.10							
v/s Ratio Perm	0.05					0.03		0.01	0.01			
v/c Ratio	0.22	0.61			0.50	0.14		0.02	0.02			
Uniform Delay, d1	16.4	18.0			17.5	16.2		3.8	3.8			
Progression Factor	0.77	0.77			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.6	3.7			1.3	0.3		0.0	0.0			
Delay (s)	13.2	17.6			18.8	16.4		3.9	3.9			
Level of Service	B	B			B	B		A	A			
Approach Delay (s)		16.8			17.5			3.9			0.0	
Approach LOS		B			B			A			A	

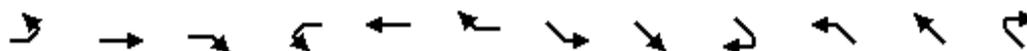
Intersection Summary

HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 18: Jimmy DeLoach Parkway & JDL Parkway Off Ramp

SR 21 Corridor ALT 11
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↑		↑		↑		↑			
Volume (vph)	0	221	144	1	583	0	2	0	298	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5		4.5			
Lane Util. Factor		0.95	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		2935	1313		1428		1641		1468			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		2935	1313		1428		1641		1468			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	240	157	1	634	0	2	0	324	0	0	0
RTOR Reduction (vph)	0	0	80	0	0	0	0	0	144	0	0	0
Lane Group Flow (vph)	0	240	77	0	635	0	2	0	180	0	0	0
Heavy Vehicles (%)	23%	23%	23%	33%	33%	33%	10%	10%	10%	2%	2%	2%
Turn Type			Perm	Perm			custom		custom			
Protected Phases		4			8							
Permitted Phases			4	8			6		6			
Actuated Green, G (s)		24.4	24.4		24.4		16.6		16.6			
Effective Green, g (s)		24.4	24.4		24.4		16.6		16.6			
Actuated g/C Ratio		0.49	0.49		0.49		0.33		0.33			
Clearance Time (s)		4.5	4.5		4.5		4.5		4.5			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		1432	641		697		545		487			
v/s Ratio Prot		0.08										
v/s Ratio Perm			0.06		0.44		0.00		0.12			
v/c Ratio		0.17	0.12		0.91		0.00		0.37			
Uniform Delay, d1		7.1	7.0		11.8		11.2		12.7			
Progression Factor		1.00	1.00		0.25		1.00		1.00			
Incremental Delay, d2		0.1	0.1		9.5		0.0		2.2			
Delay (s)		7.2	7.0		12.5		11.2		14.9			
Level of Service		A	A		B		B		B			
Approach Delay (s)		7.1			12.5			14.9			0.0	
Approach LOS		A			B			B			A	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 19: Jimmy DeLoach Parkway & JDL Parkway On Ramp

SR 21 Corridor ALT 11
 2035 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	220	3	0	0	3	1	0	0	0	581	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5							4.5
Lane Util. Factor	1.00	1.00			1.00							1.00
Frt	1.00	1.00			0.97							1.00
Flt Protected	0.95	1.00			1.00							0.95
Satd. Flow (prot)	1556	1638			1800							1360
Flt Permitted	0.76	1.00			1.00							0.95
Satd. Flow (perm)	1237	1638			1800							1360
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	3	0	0	3	1	0	0	0	632	0	2
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	239	3	0	0	3	0	0	0	0	0	634	0
Heavy Vehicles (%)	16%	16%	16%	2%	2%	2%	2%	2%	2%	33%	33%	33%
Turn Type	Perm						Perm					
Protected Phases		4			8							2
Permitted Phases	4									2		
Actuated Green, G (s)	13.3	13.3			13.3							27.7
Effective Green, g (s)	13.3	13.3			13.3							27.7
Actuated g/C Ratio	0.27	0.27			0.27							0.55
Clearance Time (s)	4.5	4.5			4.5							4.5
Vehicle Extension (s)	3.0	3.0			3.0							3.0
Lane Grp Cap (vph)	329	436			479							753
v/s Ratio Prot		0.00			0.00							
v/s Ratio Perm	c0.19											0.47
v/c Ratio	0.73	0.01			0.01							0.84
Uniform Delay, d1	16.7	13.5			13.5							9.3
Progression Factor	0.88	0.78			1.00							1.00
Incremental Delay, d2	7.7	0.0			0.0							11.0
Delay (s)	22.4	10.5			13.5							20.3
Level of Service	C	B			B							C
Approach Delay (s)		22.3			13.5			0.0				20.3
Approach LOS		C			B			A				C

Intersection Summary

HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group