

APPENDIX D

Revised Level of Service (LOS) Worksheets

HCM Signalized Intersection Capacity Analysis

10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations	↖	↗		↖↗	↑	↖	↖	↑↑↑	↖	↑↑	↖	↖
Volume (vph)	17	61	20	1287	20	327	256	1100	74	982	730	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.91	1.00	0.95	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	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1863	1583	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1863	1583	1770	5085	1583	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	61	20	1287	20	327	256	1100	74	982	730	85
RTOR Reduction (vph)	0	9	0	0	0	66	0	0	0	0	0	21
Lane Group Flow (vph)	17	72	0	1287	20	261	256	1100	74	982	730	64
Turn Type	Prot	custom		Prot	custom		Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	12.4	27.2		40.6	29.0	95.6	14.0	66.6	120.0	48.6	48.6	48.6
Effective Green, g (s)	12.4	27.2		40.6	29.0	95.6	14.0	66.6	120.0	48.6	48.6	48.6
Actuated g/C Ratio	0.10	0.23		0.34	0.24	0.80	0.12	0.55	1.00	0.41	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	183	412		1161	450	1314	207	2822	1583	1433	755	641
v/s Ratio Prot	0.01	0.00		c0.37	0.01	c0.05	c0.14	0.22		0.28	c0.39	
v/s Ratio Perm		0.04				0.12			0.05			0.04
v/c Ratio	0.09	0.17		1.11	0.04	0.20	1.24	0.39	0.05	0.69	0.97	0.10
Uniform Delay, d1	48.7	37.4		39.7	34.9	2.9	53.0	15.2	0.0	29.4	34.9	22.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.84	0.65	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		61.4	0.0	0.1	138.5	0.4	0.1	2.7	25.6	0.3
Delay (s)	48.9	37.6		101.1	34.9	3.0	182.9	10.2	0.1	32.1	60.5	22.4
Level of Service	D	D		F	C	A	F	B	A	C	E	C
Approach Delay (s)					80.7			40.6		43.2		
Approach LOS					F			D		D		
































Intersection Summary

HCM Average Control Delay	54.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 			 		  			 	 	
Volume (vph)	706	358	421	63	165	35	522	490	125	193	1984	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.45	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	833	1583	1583	5085	1863	1583	3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	706	358	421	63	165	35	522	490	125	193	1984	116
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	60	0	0	0
Lane Group Flow (vph)	706	358	411	63	165	35	522	490	65	193	1984	116
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	35.1	35.1	35.1	35.1	35.1	120.0	62.4	62.4	62.4	10.5	76.9	120.0
Effective Green, g (s)	35.1	35.1	35.1	35.1	35.1	120.0	62.4	62.4	62.4	10.5	76.9	120.0
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	1.00	0.52	0.52	0.52	0.09	0.64	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	1004	1035	463	244	463	1583	2644	969	823	300	2268	1583
v/s Ratio Prot	0.21	0.10					0.10	0.26		0.06	c0.56	
v/s Ratio Perm			c0.26	0.08	0.10	0.02			0.04			0.07
v/c Ratio	0.70	0.35	0.89	0.26	0.36	0.02	0.20	0.51	0.08	0.64	0.87	0.07
Uniform Delay, d1	37.8	33.4	40.6	32.5	33.5	0.0	15.4	18.8	14.4	52.9	17.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.82	0.69	0.75	1.47	1.00
Incremental Delay, d2	2.3	0.2	18.3	0.6	0.5	0.0	0.2	1.8	0.2	1.8	2.1	0.0
Delay (s)	40.1	33.6	58.8	33.1	34.0	0.0	13.6	17.3	10.1	41.5	27.9	0.0
Level of Service	D	C	E	C	C	A	B	B	B	D	C	A
Approach Delay (s)		43.8					14.8				27.6	
Approach LOS		D					B				C	
Intersection Summary												
HCM Average Control Delay			29.5	HCM Level of Service				C				
HCM Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			120.0	Sum of lost time (s)				8.0				
Intersection Capacity Utilization			94.4%	ICU Level of Service				F				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

12: Dominguez Drive & Sierra College Blvd.

2/7/2011



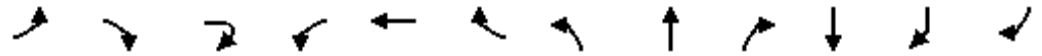
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↑	↖	↖↗	↑↑↑	↖	↖	↑↑↑	↖
Volume (vph)	116	9	72	29	100	14	401	892	4	37	2192	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	1770	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)	3433	1863	1583	3433	1863	1583	3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	116	9	72	29	100	14	401	892	4	37	2192	169
RTOR Reduction (vph)	0	0	67	0	0	12	0	0	1	0	0	60
Lane Group Flow (vph)	116	9	5	29	100	2	401	892	3	37	2192	109
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.8	9.1	9.1	12.1	13.4	13.4	17.8	77.3	77.3	5.5	65.0	65.0
Effective Green, g (s)	7.8	9.1	9.1	12.1	13.4	13.4	17.8	77.3	77.3	5.5	65.0	65.0
Actuated g/C Ratio	0.06	0.08	0.08	0.10	0.11	0.11	0.15	0.64	0.64	0.05	0.54	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	3.0
Lane Grp Cap (vph)	223	141	120	346	208	177	509	3276	1020	81	2754	857
v/s Ratio Prot	c0.03	0.00		0.01	c0.05		c0.12	0.18		0.02	c0.43	
v/s Ratio Perm			0.00			0.00			0.00			0.07
v/c Ratio	0.52	0.06	0.05	0.08	0.48	0.01	0.79	0.27	0.00	0.46	0.80	0.13
Uniform Delay, d1	54.3	51.5	51.4	48.9	50.0	47.4	49.3	9.2	7.6	55.8	22.2	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.14	0.73	0.24
Incremental Delay, d2	2.2	0.2	0.2	0.1	1.7	0.0	7.9	0.2	0.0	2.0	1.2	0.2
Delay (s)	56.5	51.7	51.6	49.0	51.8	47.4	57.2	9.4	7.6	65.4	17.5	3.5
Level of Service	E	D	D	D	D	D	E	A	A	E	B	A
Approach Delay (s)		54.5			50.8			24.2			17.3	
Approach LOS		D			D			C			B	

Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	86	252	84	702	13	184	212	1281	218	633	935	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.91	1.00	0.95	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	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1863	1583	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1863	1583	1770	5085	1583	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	86	252	84	702	13	184	212	1281	218	633	935	66
RTOR Reduction (vph)	0	9	0	0	0	45	0	0	0	0	0	10
Lane Group Flow (vph)	86	327	0	702	13	139	212	1281	218	633	935	56
Turn Type	Prot	custom		Prot		custom	Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	19.9	34.9		24.0	12.6	98.1	15.0	85.5	130.0	66.5	66.5	66.5
Effective Green, g (s)	19.9	34.9		24.0	12.6	98.1	15.0	85.5	130.0	66.5	66.5	66.5
Actuated g/C Ratio	0.15	0.27		0.18	0.10	0.75	0.12	0.66	1.00	0.51	0.51	0.51
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	271	425		634	181	1243	204	3344	1583	1810	953	810
v/s Ratio Prot	0.05	c0.05		c0.20	0.01	0.01	c0.12	0.25		0.18	c0.50	
v/s Ratio Perm		0.16				0.08			0.14			0.04
v/c Ratio	0.32	0.77		1.11	0.07	0.11	1.04	0.38	0.14	0.35	0.98	0.07
Uniform Delay, d1	49.0	43.8		53.0	53.4	4.3	57.5	10.2	0.0	18.9	31.1	16.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.61	0.31	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	8.2		68.8	0.2	0.0	67.1	0.3	0.1	0.5	24.9	0.2
Delay (s)	49.7	52.0		121.8	53.6	4.3	101.9	3.5	0.1	19.4	56.1	16.2
Level of Service	D	D		F	D	A	F	A	A	B	E	B
Approach Delay (s)					96.8			15.2		40.3		
Approach LOS					F			B		D		































Intersection Summary

HCM Average Control Delay	43.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 					  			 	 	
Volume (vph)	558	166	43	154	506	111	622	1122	137	264	1100	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.63	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1181	1583	1583	5085	1863	1583	3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	558	166	43	154	506	111	622	1122	137	264	1100	198
RTOR Reduction (vph)	0	0	31	0	0	0	0	0	37	0	0	0
Lane Group Flow (vph)	558	166	12	154	506	111	622	1122	100	264	1100	198
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	37.0	37.0	37.0	37.0	37.0	130.0	72.0	72.0	72.0	9.0	85.0	130.0
Effective Green, g (s)	37.0	37.0	37.0	37.0	37.0	130.0	72.0	72.0	72.0	9.0	85.0	130.0
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28	1.00	0.55	0.55	0.55	0.07	0.65	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	977	1007	451	336	451	1583	2816	1032	877	238	2314	1583
v/s Ratio Prot	0.16	0.05					0.12	c0.60		c0.08	0.31	
v/s Ratio Perm			0.01	0.13	c0.32	0.07			0.06			0.13
v/c Ratio	0.57	0.16	0.03	0.46	1.12	0.07	0.22	1.09	0.11	1.11	0.48	0.13
Uniform Delay, d1	39.7	34.9	33.5	38.3	46.5	0.0	14.7	29.0	13.8	60.5	11.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.83	1.00
Incremental Delay, d2	0.8	0.1	0.0	1.0	80.1	0.1	0.2	54.8	0.3	80.7	0.5	0.1
Delay (s)	40.5	35.0	33.5	39.2	126.6	0.1	14.9	83.8	14.1	125.7	9.8	0.1
Level of Service	D	C	C	D	F	A	B	F	B	F	A	A
Approach Delay (s)		38.9					56.0				28.2	
Approach LOS		D					E				C	
Intersection Summary												
HCM Average Control Delay			50.0				HCM Level of Service			D		
HCM Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			107.5%				ICU Level of Service		G			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

12: Dominguez Drive & Sierra College Blvd.

2/7/2011



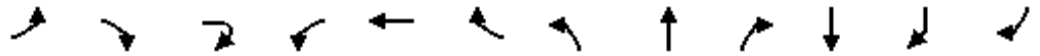
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↑	↖	↖↗	↑↑↑	↖	↖	↑↑↑	↖
Volume (vph)	164	48	361	118	62	11	195	1529	54	93	1121	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	1770	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)	3433	1863	1583	3433	1863	1583	3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	164	48	361	118	62	11	195	1529	54	93	1121	52
RTOR Reduction (vph)	0	0	277	0	0	10	0	0	21	0	0	31
Lane Group Flow (vph)	164	48	84	118	62	1	195	1529	33	93	1121	21
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.7	9.4	9.4	7.0	6.7	6.7	8.7	29.7	29.7	5.8	26.8	26.8
Effective Green, g (s)	9.7	9.4	9.4	7.0	6.7	6.7	8.7	29.7	29.7	5.8	26.8	26.8
Actuated g/C Ratio	0.14	0.14	0.14	0.10	0.10	0.10	0.13	0.44	0.44	0.09	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	3.0
Lane Grp Cap (vph)	490	258	219	354	184	156	440	2224	692	151	2007	625
v/s Ratio Prot	c0.05	0.03		0.03	0.03		0.06	c0.30		0.05	c0.22	
v/s Ratio Perm			c0.05			0.00			0.02			0.01
v/c Ratio	0.33	0.19	0.38	0.33	0.34	0.01	0.44	0.69	0.05	0.62	0.56	0.03
Uniform Delay, d1	26.2	25.9	26.6	28.3	28.5	27.6	27.4	15.4	11.0	30.0	16.0	12.6
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	0.4	0.4	1.1	0.6	1.1	0.0	0.7	0.9	0.0	7.3	0.3	0.0
Delay (s)	26.6	26.2	27.7	28.8	29.6	27.6	28.1	16.3	11.0	37.2	16.3	12.6
Level of Service	C	C	C	C	C	C	C	B	B	D	B	B
Approach Delay (s)		27.3			29.0			17.4			17.7	
Approach LOS		C			C			B			B	

Intersection Summary

HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	76	186	65	605	20	161	153	1099	632	328	1086	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.88	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1562	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1562	1504	1770	5085	1583	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	76	186	65	605	20	161	153	1099	632	328	1086	60
RTOR Reduction (vph)	0	15	0	0	62	17	0	0	0	0	0	10
Lane Group Flow (vph)	76	236	0	605	30	72	153	1099	632	328	1086	51
Turn Type	Prot	custom		Prot	custom		Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	8.8	28.3		16.0	15.7	89.2	7.0	73.5	110.0	62.5	62.5	62.5
Effective Green, g (s)	8.8	28.3		16.0	15.7	89.2	7.0	73.5	110.0	62.5	62.5	62.5
Actuated g/C Ratio	0.08	0.26		0.15	0.14	0.81	0.06	0.67	1.00	0.57	0.57	0.57
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	142	407		499	223	1274	113	3398	1583	2011	1059	899
v/s Ratio Prot	0.04	0.04		c0.18	0.02	0.01	c0.09	0.22		0.09	c0.58	
v/s Ratio Perm		0.10				0.04			c0.40			0.03
v/c Ratio	0.54	0.58		1.21	0.14	0.06	1.35	0.32	0.40	0.16	1.03	0.06
Uniform Delay, d1	48.6	35.7		47.0	41.2	2.1	51.5	7.7	0.0	11.3	23.8	10.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.88	0.30	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	2.1		113.0	0.3	0.0	203.2	0.2	0.7	0.2	34.3	0.1
Delay (s)	52.5	37.8		160.0	41.5	2.1	248.4	2.5	0.7	11.5	58.1	10.7
Level of Service	D	D		F	D	A	F	A	A	B	E	B
Approach Delay (s)					128.3			21.9		45.8		
Approach LOS					F			C		D		
































Intersection Summary

HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 			 		  			 	 	
Volume (vph)	434	451	123	82	407	142	1009	227	126	252	793	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.39	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	719	1583	1583	5085	1863	1583	3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	434	451	123	82	407	142	1009	227	126	252	793	40
RTOR Reduction (vph)	0	0	84	0	0	0	0	0	69	0	0	0
Lane Group Flow (vph)	434	451	39	82	407	142	1009	227	57	252	793	40
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	34.7	34.7	34.7	34.7	34.7	110.0	50.0	50.0	50.0	13.3	67.3	110.0
Effective Green, g (s)	34.7	34.7	34.7	34.7	34.7	110.0	50.0	50.0	50.0	13.3	67.3	110.0
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	1.00	0.45	0.45	0.45	0.12	0.61	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	1083	1116	499	227	499	1583	2311	847	720	415	2165	1583
v/s Ratio Prot	0.13	0.13					c0.20	0.12		c0.07	0.22	
v/s Ratio Perm			0.02	0.11	c0.26	0.09			0.04			0.03
v/c Ratio	0.40	0.40	0.08	0.36	0.82	0.09	0.44	0.27	0.08	0.61	0.37	0.03
Uniform Delay, d1	29.5	29.5	26.4	29.1	34.7	0.0	20.4	18.6	17.0	45.9	10.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.10	0.06	1.17	0.61	1.00
Incremental Delay, d2	0.2	0.2	0.1	1.0	9.9	0.1	0.3	0.4	0.1	1.5	0.3	0.0
Delay (s)	29.7	29.8	26.5	30.1	44.6	0.1	2.3	2.4	1.2	55.0	6.8	0.0
Level of Service	C	C	C	C	D	A	A	A	A	E	A	A
Approach Delay (s)		29.4					2.2				17.8	
Approach LOS		C					A				B	
Intersection Summary												
HCM Average Control Delay			17.7				HCM Level of Service			B		
HCM Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			67.1%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 12: Dominguez Drive & Sierra College Blvd.

2/7/2011



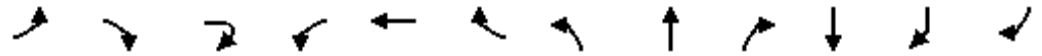
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗↘	↑	↗	↗↘	↑	↗	↗↘	↑↑↑	↗	↘	↑↑↑	↗
Volume (vph)	288	403	571	234	236	88	339	1441	353	422	854	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	1770	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)	3433	1863	1583	3433	1863	1583	3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	288	403	571	234	236	88	339	1441	353	422	854	89
RTOR Reduction (vph)	0	0	262	0	0	73	0	0	126	0	0	54
Lane Group Flow (vph)	288	403	309	234	236	15	339	1441	227	422	854	35
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.0	23.0	23.0	12.8	18.8	18.8	15.4	33.2	33.2	25.0	42.8	42.8
Effective Green, g (s)	17.0	23.0	23.0	12.8	18.8	18.8	15.4	33.2	33.2	25.0	42.8	42.8
Actuated g/C Ratio	0.15	0.21	0.21	0.12	0.17	0.17	0.14	0.30	0.30	0.23	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	3.0
Lane Grp Cap (vph)	531	390	331	399	318	271	481	1535	478	402	1979	616
v/s Ratio Prot	c0.08	c0.22		0.07	0.13		0.10	c0.28		c0.24	0.17	
v/s Ratio Perm			0.20			0.01			0.14			0.02
v/c Ratio	0.54	1.03	0.93	0.59	0.74	0.06	0.70	0.94	0.47	1.05	0.43	0.06
Uniform Delay, d1	42.9	43.5	42.8	46.1	43.3	38.2	45.1	37.4	31.3	42.5	24.7	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.68	0.47
Incremental Delay, d2	1.1	54.4	32.6	2.2	9.0	0.1	4.7	12.4	3.3	58.1	0.7	0.2
Delay (s)	44.0	97.9	75.4	48.3	52.3	38.3	49.8	49.8	34.6	89.8	17.5	10.0
Level of Service	D	F	E	D	D	D	D	D	C	F	B	A
Approach Delay (s)		75.4			48.4			47.3			39.3	
Approach LOS		E			D			D			D	

Intersection Summary

HCM Average Control Delay	52.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	17	61	19	1284	16	318	276	1424	74	1020	747	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.86	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1529	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1529	1504	1770	5085	1583	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	61	19	1284	16	318	276	1424	74	1020	747	70
RTOR Reduction (vph)	0	8	0	0	49	28	0	0	0	0	0	15
Lane Group Flow (vph)	17	72	0	1284	120	137	276	1424	74	1020	747	55
Turn Type	Prot	custom		Prot		custom	Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	12.1	33.1		51.4	41.3	115.9	19.0	74.6	140.0	51.6	51.6	51.6
Effective Green, g (s)	12.1	33.1		51.4	41.3	115.9	19.0	74.6	140.0	51.6	51.6	51.6
Actuated g/C Ratio	0.09	0.24		0.37	0.29	0.83	0.14	0.53	1.00	0.37	0.37	0.37
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	153	419		1260	451	1288	240	2710	1583	1304	687	583
v/s Ratio Prot	0.01	0.00		c0.37	c0.08	0.03	c0.16	0.28		0.29	c0.40	
v/s Ratio Perm		0.04				0.06			0.05			0.03
v/c Ratio	0.11	0.17		1.02	0.27	0.11	1.15	0.53	0.05	0.78	1.09	0.09
Uniform Delay, d1	59.0	42.6		44.3	37.8	2.3	60.5	21.2	0.0	39.2	44.2	28.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.85	0.40	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2		30.2	0.3	0.0	98.9	0.6	0.0	4.7	60.5	0.3
Delay (s)	59.3	42.7		74.5	38.1	2.3	150.2	9.0	0.0	43.9	104.7	29.2
Level of Service	E	D		E	D	A	F	A	A	D	F	C
Approach Delay (s)					63.4			30.6		68.1		
Approach LOS					E			C		E		































Intersection Summary

HCM Average Control Delay	53.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 					  			 	 	
Volume (vph)	856	305	238	47	195	35	686	457	99	283	1940	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.47	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	885	1583	1583	5085	1863	1583	3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	856	305	238	47	195	35	686	457	99	283	1940	116
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	51	0	0	0
Lane Group Flow (vph)	856	305	223	47	195	35	686	457	48	283	1940	116
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	37.5	37.5	37.5	37.5	37.5	140.0	67.5	67.5	67.5	23.0	94.5	140.0
Effective Green, g (s)	37.5	37.5	37.5	37.5	37.5	140.0	67.5	67.5	67.5	23.0	94.5	140.0
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	1.00	0.48	0.48	0.48	0.16	0.68	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	920	948	424	237	424	1583	2452	898	763	564	2389	1583
v/s Ratio Prot	c0.25	0.09					0.13	0.25		0.08	c0.55	
v/s Ratio Perm			0.14	0.05	0.12	0.02			0.03			0.07
v/c Ratio	0.93	0.32	0.53	0.20	0.46	0.02	0.28	0.51	0.06	0.50	0.81	0.07
Uniform Delay, d1	50.0	41.1	43.7	39.6	42.8	0.0	21.7	24.9	19.4	53.3	16.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.87	0.59	0.82	0.40	1.00
Incremental Delay, d2	15.5	0.2	1.2	0.4	0.8	0.0	0.3	2.0	0.2	0.3	1.3	0.0
Delay (s)	65.5	41.3	44.8	40.0	43.6	0.0	18.8	23.6	11.6	44.0	7.8	0.0
Level of Service	E	D	D	D	D	A	B	C	B	D	A	A
Approach Delay (s)		56.7					20.0				11.8	
Approach LOS		E					B				B	
Intersection Summary												
HCM Average Control Delay			27.0	HCM Level of Service				C				
HCM Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				8.0				
Intersection Capacity Utilization			84.7%	ICU Level of Service				E				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

12: Dominguez Drive & Sierra College Blvd.

2/7/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	52	12	1049	8	29	2181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
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)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	52	12	1049	8	29	2181
RTOR Reduction (vph)	0	11	0	2	0	0
Lane Group Flow (vph)	52	1	1049	6	29	2181
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.4	6.4	113.2	113.2	8.4	125.6
Effective Green, g (s)	6.4	6.4	113.2	113.2	8.4	125.6
Actuated g/C Ratio	0.05	0.05	0.81	0.81	0.06	0.90
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	157	127	4112	1280	106	4562
v/s Ratio Prot	c0.02		0.21		0.02	c0.43
v/s Ratio Perm		0.00		0.00		
v/c Ratio	0.33	0.00	0.26	0.01	0.27	0.48
Uniform Delay, d1	64.7	63.8	3.2	2.6	62.9	1.3
Progression Factor	1.00	1.00	1.00	1.00	0.73	0.27
Incremental Delay, d2	1.2	0.0	0.1	0.0	0.9	0.2
Delay (s)	66.0	63.8	3.4	2.6	47.0	0.6
Level of Service	E	E	A	A	D	A
Approach Delay (s)	65.6		3.4			1.2
Approach LOS	E		A			A

Intersection Summary

HCM Average Control Delay	3.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	120	270	97	661	13	223	193	1372	267	780	1052	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.87	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1533	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1533	1504	1770	5085	1583	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	270	97	661	13	223	193	1372	267	780	1052	85
RTOR Reduction (vph)	0	12	0	0	87	24	0	0	0	0	0	13
Lane Group Flow (vph)	120	355	0	661	33	92	193	1372	267	780	1052	72
Turn Type	Prot	custom		Prot		custom	Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	12.6	35.8		19.0	15.6	95.4	10.0	79.8	120.0	65.8	65.8	65.8
Effective Green, g (s)	12.6	35.8		19.0	15.6	95.4	10.0	79.8	120.0	65.8	65.8	65.8
Actuated g/C Ratio	0.10	0.30		0.16	0.13	0.80	0.08	0.66	1.00	0.55	0.55	0.55
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	186	472		544	199	1246	148	3382	1583	1941	1022	868
v/s Ratio Prot	0.07	c0.06		c0.19	0.02	0.01	c0.11	0.27		0.22	c0.56	
v/s Ratio Perm		0.17				0.05			0.17			0.05
v/c Ratio	0.65	0.75		1.22	0.17	0.07	1.30	0.41	0.17	0.40	1.03	0.08
Uniform Delay, d1	51.6	38.1		50.5	46.4	2.7	55.0	9.2	0.0	15.7	27.1	12.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.68	0.49	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	6.7		112.8	0.4	0.0	169.9	0.3	0.2	0.6	35.9	0.2
Delay (s)	59.0	44.8		163.3	46.8	2.7	207.1	4.8	0.2	16.3	63.0	13.0
Level of Service	E	D		F	D	A	F	A	A	B	E	B
Approach Delay (s)					127.0			25.5		41.8		
Approach LOS					F			C		D		































Intersection Summary

HCM Average Control Delay	51.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 					  			 	 	
Volume (vph)	621	135	28	133	542	111	644	1062	110	365	1220	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.67	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1241	1583	1583	5085	1863	1583	3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	621	135	28	133	542	111	644	1062	110	365	1220	198
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	34	0	0	0
Lane Group Flow (vph)	621	135	9	133	542	111	644	1062	76	365	1220	198
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	37.0	37.0	37.0	37.0	37.0	120.0	60.0	60.0	60.0	11.0	75.0	120.0
Effective Green, g (s)	37.0	37.0	37.0	37.0	37.0	120.0	60.0	60.0	60.0	11.0	75.0	120.0
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31	1.00	0.50	0.50	0.50	0.09	0.62	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1059	1091	488	383	488	1583	2543	932	792	315	2212	1583
v/s Ratio Prot	0.18	0.04					0.13	c0.57		c0.11	0.34	
v/s Ratio Perm			0.01	0.11	c0.34	0.07			0.05			0.13
v/c Ratio	0.59	0.12	0.02	0.35	1.11	0.07	0.25	1.14	0.10	1.16	0.55	0.13
Uniform Delay, d1	35.0	29.8	28.9	32.1	41.5	0.0	17.2	30.0	15.8	54.5	12.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.79	0.57	0.77	0.83	1.00
Incremental Delay, d2	0.8	0.1	0.0	0.5	74.5	0.1	0.2	75.2	0.2	93.0	0.7	0.1
Delay (s)	35.9	29.9	28.9	32.7	116.0	0.1	12.6	98.9	9.2	134.9	11.3	0.1
Level of Service	D	C	C	C	F	A	B	F	A	F	B	A
Approach Delay (s)		34.6					62.8				35.4	
Approach LOS		C					E				D	
Intersection Summary												
HCM Average Control Delay			52.5				HCM Level of Service			D		
HCM Volume to Capacity ratio			1.13									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			106.0%				ICU Level of Service		G			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis
 12: Dominguez Drive & Sierra College Blvd.

2/7/2011



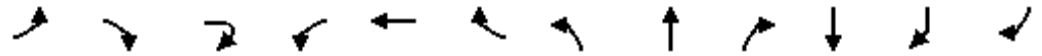
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	130	28	1595	62	90	1272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	130	28	1595	62	90	1272
RTOR Reduction (vph)	0	26	0	13	0	0
Lane Group Flow (vph)	130	2	1595	49	90	1272
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.9	9.9	86.7	86.7	11.4	102.1
Effective Green, g (s)	9.9	9.9	86.7	86.7	11.4	102.1
Actuated g/C Ratio	0.08	0.08	0.72	0.72	0.10	0.85
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	283	230	3674	1144	168	4326
v/s Ratio Prot	c0.04		c0.31		c0.05	0.25
v/s Ratio Perm		0.00		0.03		
v/c Ratio	0.46	0.01	0.43	0.04	0.54	0.29
Uniform Delay, d1	52.5	50.6	6.7	4.8	51.8	1.8
Progression Factor	1.00	1.00	1.00	1.00	0.83	0.77
Incremental Delay, d2	1.2	0.0	0.4	0.1	2.8	0.1
Delay (s)	53.7	50.6	7.1	4.8	45.8	1.5
Level of Service	D	D	A	A	D	A
Approach Delay (s)	53.1		7.0			4.5
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	81	181	65	603	24	149	129	1146	632	348	1114	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.89	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1577	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1577	1504	1770	5085	1583	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	81	181	65	603	24	149	129	1146	632	348	1114	57
RTOR Reduction (vph)	0	9	0	0	53	13	0	0	0	0	0	7
Lane Group Flow (vph)	81	237	0	603	35	72	129	1146	632	348	1114	50
Turn Type	Prot	custom		Prot	custom		Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	11.0	33.5		23.0	24.5	123.5	10.0	99.0	146.5	85.0	85.0	85.0
Effective Green, g (s)	11.0	33.5		23.0	24.5	123.5	10.0	99.0	146.5	85.0	85.0	85.0
Actuated g/C Ratio	0.08	0.23		0.16	0.17	0.84	0.07	0.68	1.00	0.58	0.58	0.58
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	133	405		539	264	1309	121	3436	1583	2053	1081	918
v/s Ratio Prot	0.05	c0.05		c0.18	0.02	0.01	c0.07	0.23		0.10	c0.60	
v/s Ratio Perm		0.10				0.04			0.40			0.03
v/c Ratio	0.61	0.58		1.12	0.13	0.05	1.07	0.33	0.40	0.17	1.03	0.05
Uniform Delay, d1	65.7	50.3		61.8	51.9	1.9	68.2	9.9	0.0	14.3	30.8	13.3
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	7.7	2.2		75.7	0.2	0.0	100.7	0.3	0.8	0.2	35.5	0.1
Delay (s)	73.3	52.5		137.4	52.2	1.9	168.9	10.2	0.8	14.5	66.2	13.4
Level of Service	E	D		F	D	A	F	B	A	B	E	B
Approach Delay (s)					112.9			17.8		52.4		
Approach LOS					F			B		D		



































Intersection Summary

HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	146.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 			 	 	  		 	  	 	
Volume (vph)	455	451	163	82	447	142	971	263	126	293	830	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.41	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	769	1583	1583	5085	1863	1583	3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	455	451	163	82	447	142	971	263	126	293	830	40
RTOR Reduction (vph)	0	0	71	0	0	0	0	0	77	0	0	0
Lane Group Flow (vph)	455	451	92	82	447	142	971	263	49	293	830	40
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	31.0	31.0	31.0	31.0	31.0	90.0	34.8	34.8	34.8	12.2	51.0	90.0
Effective Green, g (s)	31.0	31.0	31.0	31.0	31.0	90.0	34.8	34.8	34.8	12.2	51.0	90.0
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	1.00	0.39	0.39	0.39	0.14	0.57	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	1182	1219	545	265	545	1583	1966	720	612	465	2005	1583
v/s Ratio Prot	0.13	0.13					c0.19	0.14		c0.09	0.23	
v/s Ratio Perm			0.06	0.11	c0.28	0.09			0.03			0.03
v/c Ratio	0.38	0.37	0.17	0.31	0.82	0.09	0.49	0.37	0.08	0.63	0.41	0.03
Uniform Delay, d1	22.3	22.2	20.5	21.6	27.0	0.0	20.9	19.7	17.5	36.8	11.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.68	0.36	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.1	0.7	9.6	0.1	0.9	1.4	0.2	2.8	0.6	0.0
Delay (s)	22.5	22.4	20.7	22.3	36.5	0.1	15.6	14.8	6.6	39.5	11.7	0.0
Level of Service	C	C	C	C	D	A	B	B	A	D	B	A
Approach Delay (s)		22.2					14.6				18.3	
Approach LOS		C					B				B	

Intersection Summary

HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

12: Dominguez Drive & Sierra College Blvd.

2/7/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	126	26	1242	53	103	925
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
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)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	126	26	1242	53	103	925
RTOR Reduction (vph)	0	23	0	18	0	0
Lane Group Flow (vph)	126	3	1242	35	103	925
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	8.7	8.7	60.1	60.1	9.2	73.3
Effective Green, g (s)	8.7	8.7	60.1	60.1	9.2	73.3
Actuated g/C Ratio	0.10	0.10	0.67	0.67	0.10	0.81
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	332	269	3396	1057	181	4141
v/s Ratio Prot	c0.04		c0.24		c0.06	0.18
v/s Ratio Perm		0.00		0.02		
v/c Ratio	0.38	0.01	0.37	0.03	0.57	0.22
Uniform Delay, d1	38.1	36.8	6.6	5.1	38.5	1.9
Progression Factor	1.00	1.00	1.00	1.00	0.99	0.28
Incremental Delay, d2	0.7	0.0	0.3	0.1	3.8	0.1
Delay (s)	38.8	36.8	6.9	5.1	41.8	0.6
Level of Service	D	D	A	A	D	A
Approach Delay (s)	38.5		6.8			4.8
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	44	53	24	659	18	230	103	615	222	793	166	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.87	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1543	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1543	1504	1770	5085	1583	3539	1863	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)	48	58	26	716	20	250	112	668	241	862	180	115
RTOR Reduction (vph)	0	18	0	0	97	38	0	0	0	0	0	70
Lane Group Flow (vph)	48	66	0	716	41	94	112	668	241	862	180	45
Turn Type	Prot	custom		Prot		custom	Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	14.0	27.5		25.2	15.7	64.0	9.0	48.3	90.0	35.3	35.3	35.3
Effective Green, g (s)	14.0	27.5		25.2	15.7	64.0	9.0	48.3	90.0	35.3	35.3	35.3
Actuated g/C Ratio	0.16	0.31		0.28	0.17	0.71	0.10	0.54	1.00	0.39	0.39	0.39
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	275	554		961	269	1136	177	2729	1583	1388	731	621
v/s Ratio Prot	0.03	0.01		c0.21	0.03	0.01	c0.06	0.13		c0.24	0.10	
v/s Ratio Perm		0.04				0.05			c0.15			0.03
v/c Ratio	0.17	0.12		0.75	0.15	0.08	0.63	0.24	0.15	0.62	0.25	0.07
Uniform Delay, d1	33.0	22.5		29.5	31.5	4.0	38.9	11.1	0.0	22.0	18.4	17.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.87	0.59	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1		3.2	0.3	0.0	7.0	0.2	0.2	2.1	0.8	0.2
Delay (s)	33.3	22.6		32.7	31.8	4.0	40.8	6.7	0.2	24.1	19.2	17.3
Level of Service	C	C		C	C	A	D	A	A	C	B	B
Approach Delay (s)					28.7			8.9		22.6		
Approach LOS					C			A		C		
































Intersection Summary

HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 			 		  			 	 	
Volume (vph)	299	161	125	22	182	35	422	267	46	142	1163	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.64	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1195	1583	1583	5085	1863	1583	3433	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)	325	175	136	24	198	38	459	290	50	154	1264	177
RTOR Reduction (vph)	0	0	60	0	0	0	0	0	21	0	0	0
Lane Group Flow (vph)	325	175	76	24	198	38	459	290	29	154	1264	177
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	16.5	16.5	16.5	16.5	16.5	90.0	52.1	52.1	52.1	9.4	65.5	90.0
Effective Green, g (s)	16.5	16.5	16.5	16.5	16.5	90.0	52.1	52.1	52.1	9.4	65.5	90.0
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	1.00	0.58	0.58	0.58	0.10	0.73	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	629	649	290	219	290	1583	2944	1078	916	359	2576	1583
v/s Ratio Prot	0.09	0.05					0.09	0.16		0.04	c0.36	
v/s Ratio Perm			0.05	0.02	c0.13	0.02			0.02			0.11
v/c Ratio	0.52	0.27	0.26	0.11	0.68	0.02	0.16	0.27	0.03	0.43	0.49	0.11
Uniform Delay, d1	33.2	31.6	31.5	30.6	34.3	0.0	8.8	9.5	8.1	37.8	5.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.59	0.63	0.71	1.09	0.22	1.00
Incremental Delay, d2	0.7	0.2	0.5	0.2	6.5	0.0	0.1	0.6	0.1	0.6	0.5	0.1
Delay (s)	33.9	31.8	32.0	30.9	40.8	0.0	5.3	6.6	5.9	41.8	1.6	0.1
Level of Service	C	C	C	C	D	A	A	A	A	D	A	A
Approach Delay (s)		32.9					5.8				5.3	
Approach LOS		C					A				A	
Intersection Summary												
HCM Average Control Delay			13.0				HCM Level of Service			B		
HCM Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			53.2%				ICU Level of Service			A		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

12: Dominguez Drive & Sierra College Blvd.

2/7/2011



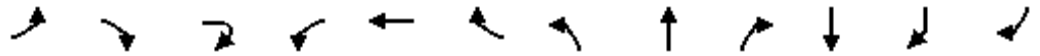
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	49	35	659	17	55	1255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	38	716	18	60	1364
RTOR Reduction (vph)	0	36	0	5	0	0
Lane Group Flow (vph)	53	2	716	13	60	1364
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	5.7	5.7	65.0	65.0	7.3	76.3
Effective Green, g (s)	5.7	5.7	65.0	65.0	7.3	76.3
Actuated g/C Ratio	0.06	0.06	0.72	0.72	0.08	0.85
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	177	3673	1143	144	4311
v/s Ratio Prot	c0.02		0.14		0.03	c0.27
v/s Ratio Perm		0.00		0.01		
v/c Ratio	0.24	0.01	0.19	0.01	0.42	0.32
Uniform Delay, d1	40.1	39.5	4.0	3.5	39.3	1.4
Progression Factor	1.00	1.00	1.00	1.00	0.75	0.32
Incremental Delay, d2	0.6	0.0	0.1	0.0	1.8	0.2
Delay (s)	40.7	39.5	4.2	3.5	31.1	0.6
Level of Service	D	D	A	A	C	A
Approach Delay (s)	40.2		4.1			1.9
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	4.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	237	299	133	431	48	189	358	1104	452	929	219	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.91	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1609	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1609	1504	1770	5085	1583	3539	1863	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)	258	325	145	468	52	205	389	1200	491	1010	238	280
RTOR Reduction (vph)	0	19	0	0	60	31	0	0	0	0	0	190
Lane Group Flow (vph)	258	451	0	468	72	94	389	1200	491	1010	238	90
Turn Type	Prot	custom		Prot		custom	Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	15.0	51.1		15.7	10.5	73.0	26.3	62.5	100.0	32.2	32.2	32.2
Effective Green, g (s)	15.0	51.1		15.7	10.5	73.0	26.3	62.5	100.0	32.2	32.2	32.2
Actuated g/C Ratio	0.15	0.51		0.16	0.10	0.73	0.26	0.62	1.00	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	266	872		539	169	1158	466	3178	1583	1140	600	510
v/s Ratio Prot	c0.15	c0.05		0.14	0.04	0.01	c0.22	0.24		c0.29	0.13	
v/s Ratio Perm		0.23				0.05			c0.31			0.06
v/c Ratio	0.97	0.52		0.87	0.43	0.08	0.83	0.38	0.31	0.89	0.40	0.18
Uniform Delay, d1	42.3	16.3		41.1	41.9	3.9	34.8	9.2	0.0	32.2	26.3	24.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.20	0.66	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.2	0.5		13.8	1.7	0.0	9.9	0.3	0.4	10.2	2.0	0.8
Delay (s)	88.5	16.8		55.0	43.7	3.9	51.7	6.3	0.4	42.4	28.3	25.1
Level of Service	F	B		D	D	A	D	A	A	D	C	C
Approach Delay (s)					44.1			13.4		37.0		
Approach LOS					D			B		D		































Intersection Summary

HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 					  			 	 	
Volume (vph)	584	407	89	79	647	111	658	506	115	326	987	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.45	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	838	1583	1583	5085	1863	1583	3433	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)	635	442	97	86	703	121	715	550	125	354	1073	493
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	85	0	0	0
Lane Group Flow (vph)	635	442	69	86	703	121	715	550	40	354	1073	493
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	45.0	45.0	45.0	45.0	45.0	100.0	32.0	32.0	32.0	11.0	47.0	100.0
Effective Green, g (s)	45.0	45.0	45.0	45.0	45.0	100.0	32.0	32.0	32.0	11.0	47.0	100.0
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	1.00	0.32	0.32	0.32	0.11	0.47	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	1545	1593	712	377	712	1583	1627	596	507	378	1663	1583
v/s Ratio Prot	0.18	0.12					0.14	c0.30		c0.10	0.30	
v/s Ratio Perm			0.04	0.10	c0.44	0.08			0.03			0.31
v/c Ratio	0.41	0.28	0.10	0.23	0.99	0.08	0.44	0.92	0.08	0.94	0.65	0.31
Uniform Delay, d1	18.6	17.3	15.8	16.9	27.2	0.0	26.9	32.8	23.7	44.2	20.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.79	1.29	1.10	0.30	1.00
Incremental Delay, d2	0.2	0.1	0.1	0.3	30.3	0.1	0.8	21.3	0.3	22.0	1.2	0.3
Delay (s)	18.7	17.4	15.9	17.2	57.5	0.1	20.7	47.3	30.9	70.4	7.3	0.3
Level of Service	B	B	B	B	E	A	C	D	C	E	A	A
Approach Delay (s)		18.0					32.1				17.1	
Approach LOS		B					C				B	
Intersection Summary												
HCM Average Control Delay			26.1				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)				12.0	
Intersection Capacity Utilization			79.4%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

12: Dominguez Drive & Sierra College Blvd.

2/7/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	97	53	1170	47	174	982
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
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)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	58	1272	51	189	1067
RTOR Reduction (vph)	0	54	0	15	0	0
Lane Group Flow (vph)	105	4	1272	36	189	1067
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	7.2	7.2	64.9	64.9	15.9	84.8
Effective Green, g (s)	7.2	7.2	64.9	64.9	15.9	84.8
Actuated g/C Ratio	0.07	0.07	0.65	0.65	0.16	0.85
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	247	201	3300	1027	281	4312
v/s Ratio Prot	c0.03		c0.25		c0.11	0.21
v/s Ratio Perm		0.00		0.02		
v/c Ratio	0.43	0.02	0.39	0.03	0.67	0.25
Uniform Delay, d1	44.4	43.1	8.2	6.3	39.6	1.5
Progression Factor	1.00	1.00	1.00	1.00	0.67	0.47
Incremental Delay, d2	1.2	0.0	0.3	0.1	5.1	0.1
Delay (s)	45.6	43.2	8.6	6.4	31.8	0.8
Level of Service	D	D	A	A	C	A
Approach Delay (s)	44.7		8.5			5.5
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↑↑↑	↗	↑↑	↗	↖
Volume (vph)	276	369	161	359	62	170	524	1053	546	805	250	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.93	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1639	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1639	1504	1770	5085	1583	3539	1863	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)	300	401	175	390	67	185	570	1145	593	875	272	395
RTOR Reduction (vph)	0	17	0	0	31	30	0	0	0	0	0	272
Lane Group Flow (vph)	300	559	0	390	101	90	570	1145	593	875	272	123
Turn Type	Prot	custom		Prot		custom	Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	22.9	65.8		26.8	11.8	80.1	35.0	68.3	115.0	29.3	29.3	29.3
Effective Green, g (s)	22.9	65.8		26.8	11.8	80.1	35.0	68.3	115.0	29.3	29.3	29.3
Actuated g/C Ratio	0.20	0.57		0.23	0.10	0.70	0.30	0.59	1.00	0.25	0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	352	961		800	168	1100	539	3020	1583	902	475	403
v/s Ratio Prot	c0.17	c0.04		0.11	0.06	0.01	c0.32	0.23		c0.25	0.15	
v/s Ratio Perm		0.31				0.05			c0.37			0.08
v/c Ratio	0.85	0.58		0.49	0.60	0.08	1.06	0.38	0.37	0.97	0.57	0.31
Uniform Delay, d1	44.4	15.8		38.2	49.3	5.6	40.0	12.2	0.0	42.4	37.4	34.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.72	0.44	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.7	0.9		0.5	5.6	0.0	48.4	0.2	0.5	23.5	5.0	1.9
Delay (s)	62.1	16.7		38.6	55.0	5.6	77.3	5.7	0.5	66.0	42.3	36.6
Level of Service	E	B		D	D	A	E	A	A	E	D	D
Approach Delay (s)					35.8			22.0		54.3		
Approach LOS					D			C		D		
































Intersection Summary

HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 			 		  			 	 	
Volume (vph)	584	567	204	106	817	142	688	378	158	445	863	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.37	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	683	1583	1583	5085	1863	1583	3433	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)	635	616	222	115	888	154	748	411	172	484	938	383
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	135	0	0	0
Lane Group Flow (vph)	635	616	202	115	888	154	748	411	37	484	938	383
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	62.0	62.0	62.0	62.0	62.0	115.0	25.0	25.0	25.0	16.0	45.0	115.0
Effective Green, g (s)	62.0	62.0	62.0	62.0	62.0	115.0	25.0	25.0	25.0	16.0	45.0	115.0
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.54	1.00	0.22	0.22	0.22	0.14	0.39	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	1851	1908	853	368	853	1583	1105	405	344	478	1385	1583
v/s Ratio Prot	0.18	0.17					0.15	c0.22		c0.14	0.27	
v/s Ratio Perm			0.13	0.17	c0.56	0.10			0.02			0.24
v/c Ratio	0.34	0.32	0.24	0.31	1.04	0.10	0.68	1.01	0.11	1.01	0.68	0.24
Uniform Delay, d1	15.0	14.8	14.0	14.7	26.5	0.0	41.3	45.0	36.1	49.5	29.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.80	0.65	0.82	0.68	1.00
Incremental Delay, d2	0.1	0.1	0.1	0.5	42.0	0.1	3.2	47.7	0.6	37.8	1.9	0.3
Delay (s)	15.1	14.9	14.1	15.2	68.5	0.1	35.4	83.6	24.0	78.3	21.7	0.3
Level of Service	B	B	B	B	E	A	D	F	C	E	C	A
Approach Delay (s)		14.9					48.8				32.3	
Approach LOS		B					D				C	
Intersection Summary												
HCM Average Control Delay			36.0				HCM Level of Service			D		
HCM Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			90.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 12: Dominguez Drive & Sierra College Blvd.

2/7/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	122	70	1075	55	196	977
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
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)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	76	1168	60	213	1062
RTOR Reduction (vph)	0	70	0	17	0	0
Lane Group Flow (vph)	133	6	1168	43	213	1062
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.8	9.8	74.0	74.0	19.2	97.2
Effective Green, g (s)	9.8	9.8	74.0	74.0	19.2	97.2
Actuated g/C Ratio	0.09	0.09	0.64	0.64	0.17	0.85
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	293	238	3272	1019	296	4298
v/s Ratio Prot	c0.04		c0.23		c0.12	0.21
v/s Ratio Perm		0.00		0.03		
v/c Ratio	0.45	0.03	0.36	0.04	0.72	0.25
Uniform Delay, d1	50.1	48.2	9.5	7.5	45.4	1.7
Progression Factor	1.00	1.00	1.00	1.00	0.76	0.45
Incremental Delay, d2	1.1	0.0	0.3	0.1	6.8	0.1
Delay (s)	51.2	48.3	9.8	7.6	41.2	0.9
Level of Service	D	D	A	A	D	A
Approach Delay (s)	50.1		9.7			7.6
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↖↗↘	↗	↖↗	↗	↖
Volume (vph)	0	4	1	656	6	230	0	467	181	646	97	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00		0.97	0.95	0.95		0.91	1.00	0.95	1.00	1.00
Frt		0.85		1.00	0.86	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)		1583		3433	1518	1504		5085	1583	3539	1863	1583
Flt Permitted		1.00		0.95	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)		1583		3433	1518	1504		5085	1583	3539	1863	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	4	1	713	7	250	0	508	197	702	105	9
RTOR Reduction (vph)	0	1	0	0	83	11	0	0	0	0	0	4
Lane Group Flow (vph)	0	4	0	713	47	116	0	508	197	702	105	5
Turn Type	Prot	custom		Prot	custom		Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)		1.3		24.1	29.4	82.0		52.6	90.0	52.6	52.6	52.6
Effective Green, g (s)		1.3		24.1	29.4	82.0		52.6	90.0	52.6	52.6	52.6
Actuated g/C Ratio		0.01		0.27	0.33	0.91		0.58	1.00	0.58	0.58	0.58
Clearance Time (s)		4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		23		919	496	1504		2972	1583	2068	1089	925
v/s Ratio Prot		0.00		c0.21	0.03	0.03		0.10		c0.20	0.06	
v/s Ratio Perm						0.05			c0.12			0.00
v/c Ratio		0.17		0.78	0.10	0.08		0.17	0.12	0.34	0.10	0.01
Uniform Delay, d1		43.8		30.5	21.1	0.4		8.6	0.0	9.7	8.2	7.8
Progression Factor		1.00		1.00	1.00	1.00		0.67	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.6		4.2	0.1	0.0		0.1	0.2	0.4	0.2	0.0
Delay (s)		47.4		34.6	21.1	0.4		5.9	0.2	10.1	8.4	7.8
Level of Service		D		C	C	A		A	A	B	A	A
Approach Delay (s)					28.3			4.3		9.9		
Approach LOS					C			A		A		































Intersection Summary

HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 					  			 	 	
Volume (vph)	184	161	123	22	161	35	266	261	46	104	1050	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.64	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1192	1583	1583	5085	1863	1583	3433	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)	200	175	134	24	175	38	289	284	50	113	1141	126
RTOR Reduction (vph)	0	0	80	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	200	175	54	24	175	38	289	284	31	113	1141	126
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	15.2	15.2	15.2	15.2	15.2	90.0	55.7	55.7	55.7	7.1	66.8	90.0
Effective Green, g (s)	15.2	15.2	15.2	15.2	15.2	90.0	55.7	55.7	55.7	7.1	66.8	90.0
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	1.00	0.62	0.62	0.62	0.08	0.74	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	580	598	267	201	267	1583	3147	1153	980	271	2627	1583
v/s Ratio Prot	0.06	0.05					0.06	0.15		0.03	c0.32	
v/s Ratio Perm			0.03	0.02	c0.11	0.02			0.02			0.08
v/c Ratio	0.34	0.29	0.20	0.12	0.66	0.02	0.09	0.25	0.03	0.42	0.43	0.08
Uniform Delay, d1	33.0	32.7	32.2	31.7	35.0	0.0	6.9	7.7	6.7	39.5	4.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.60	0.65	0.67	1.11	0.50	1.00
Incremental Delay, d2	0.4	0.3	0.4	0.3	5.7	0.0	0.1	0.5	0.1	0.9	0.5	0.1
Delay (s)	33.4	33.0	32.6	32.0	40.6	0.0	4.2	5.6	4.5	44.7	2.7	0.1
Level of Service	C	C	C	C	D	A	A	A	A	D	A	A
Approach Delay (s)		33.0					4.9				5.9	
Approach LOS		C					A				A	
Intersection Summary												
HCM Average Control Delay			13.0				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)				8.0	
Intersection Capacity Utilization			50.0%				ICU Level of Service				A	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis
 12: Dominguez Drive & Sierra College Blvd.

2/7/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	22	6	557	11	30	1165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
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)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	7	605	12	33	1266
RTOR Reduction (vph)	0	7	0	3	0	0
Lane Group Flow (vph)	24	0	605	9	33	1266
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	3.9	3.9	69.2	69.2	4.9	78.1
Effective Green, g (s)	3.9	3.9	69.2	69.2	4.9	78.1
Actuated g/C Ratio	0.04	0.04	0.77	0.77	0.05	0.87
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	149	121	3910	1217	96	4413
v/s Ratio Prot	c0.01		0.12		0.02	c0.25
v/s Ratio Perm		0.00		0.01		
v/c Ratio	0.16	0.00	0.15	0.01	0.34	0.29
Uniform Delay, d1	41.5	41.2	2.7	2.4	41.0	1.0
Progression Factor	1.00	1.00	1.00	1.00	0.86	0.40
Incremental Delay, d2	0.5	0.0	0.1	0.0	2.0	0.2
Delay (s)	42.0	41.2	2.8	2.4	37.3	0.6
Level of Service	D	D	A	A	D	A
Approach Delay (s)	41.8		2.8			1.5
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	2.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↖↗↘	↗	↖↗	↗	↖
Volume (vph)	7	10	4	419	6	176	7	750	426	710	109	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.86	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1523	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1523	1504	1770	5085	1583	3539	1863	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)	8	11	4	455	7	191	8	815	463	772	118	9
RTOR Reduction (vph)	0	4	0	0	72	23	0	0	0	0	0	5
Lane Group Flow (vph)	8	11	0	455	27	76	8	815	463	772	118	4
Turn Type	Prot	custom		Prot		custom	Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	0.6	1.5		11.4	11.7	41.4	0.6	29.7	54.0	25.1	25.1	25.1
Effective Green, g (s)	0.6	1.5		11.4	11.7	41.4	0.6	29.7	54.0	25.1	25.1	25.1
Actuated g/C Ratio	0.01	0.03		0.21	0.22	0.77	0.01	0.55	1.00	0.46	0.46	0.46
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	20	161		725	330	1264	20	2797	1583	1645	866	736
v/s Ratio Prot	0.00	0.00		c0.13	0.02	0.01	0.00	0.16		c0.22	0.06	
v/s Ratio Perm		0.01				0.04			c0.29			0.00
v/c Ratio	0.40	0.07		0.63	0.08	0.06	0.40	0.29	0.29	0.47	0.14	0.01
Uniform Delay, d1	26.5	25.6		19.4	16.9	1.5	26.5	6.5	0.0	9.9	8.3	7.8
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	12.6	0.2		1.7	0.1	0.0	12.6	0.3	0.5	1.0	0.3	0.0
Delay (s)	39.1	25.8		21.1	17.0	1.6	39.1	6.8	0.5	10.9	8.6	7.8
Level of Service	D	C		C	B	A	D	A	A	B	A	A
Approach Delay (s)					17.5			4.7		10.5		
Approach LOS					B			A		B		
































Intersection Summary

HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 			 		  			 	 	
Volume (vph)	262	407	40	79	576	111	320	507	115	267	653	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.45	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	832	1583	1583	5085	1863	1583	3433	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)	285	442	43	86	626	121	348	551	125	290	710	215
RTOR Reduction (vph)	0	0	25	0	0	0	0	0	81	0	0	0
Lane Group Flow (vph)	285	442	18	86	626	121	348	551	44	290	710	215
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	37.8	37.8	37.8	37.8	37.8	90.0	31.5	31.5	31.5	8.7	44.2	90.0
Effective Green, g (s)	37.8	37.8	37.8	37.8	37.8	90.0	31.5	31.5	31.5	8.7	44.2	90.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	1.00	0.35	0.35	0.35	0.10	0.49	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	1442	1486	665	349	665	1583	1780	652	554	332	1738	1583
v/s Ratio Prot	0.08	0.12					0.07	c0.30		c0.08	0.20	
v/s Ratio Perm			0.01	0.10	c0.40	0.08			0.03			0.14
v/c Ratio	0.20	0.30	0.03	0.25	0.94	0.08	0.20	0.85	0.08	0.87	0.41	0.14
Uniform Delay, d1	16.5	17.3	15.3	16.9	25.0	0.0	20.4	27.0	19.6	40.1	14.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.81	0.55	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.4	21.6	0.1	0.2	12.6	0.3	21.5	0.7	0.2
Delay (s)	16.6	17.4	15.3	17.3	46.6	0.1	15.4	34.4	11.1	61.6	15.3	0.2
Level of Service	B	B	B	B	D	A	B	C	B	E	B	A
Approach Delay (s)		17.0					25.1				23.7	
Approach LOS		B					C				C	
Intersection Summary												
HCM Average Control Delay			25.6				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			73.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 12: Dominguez Drive & Sierra College Blvd.

2/7/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶↶	↶↶	↑↑↑	↷	↶	↑↑↑
Volume (vph)	79	20	883	28	76	696
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
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)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	22	960	30	83	757
RTOR Reduction (vph)	0	20	0	9	0	0
Lane Group Flow (vph)	86	2	960	21	83	757
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.5	6.5	63.1	63.1	8.4	75.5
Effective Green, g (s)	6.5	6.5	63.1	63.1	8.4	75.5
Actuated g/C Ratio	0.07	0.07	0.70	0.70	0.09	0.84
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	248	201	3565	1110	165	4266
v/s Ratio Prot	c0.03		c0.19		c0.05	0.15
v/s Ratio Perm		0.00		0.01		
v/c Ratio	0.35	0.01	0.27	0.02	0.50	0.18
Uniform Delay, d1	39.7	38.8	5.0	4.1	38.8	1.4
Progression Factor	1.00	1.00	1.00	1.00	0.89	0.19
Incremental Delay, d2	0.8	0.0	0.2	0.0	2.3	0.1
Delay (s)	40.6	38.8	5.1	4.1	37.0	0.3
Level of Service	D	D	A	A	D	A
Approach Delay (s)	40.2		5.1			4.0
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

10: I-80 WB & Sierra College Blvd.

2/7/2011



Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↑↑↑	↗	↑↑	↗	↖
Volume (vph)	3	3	1	350	1	152	5	688	514	568	133	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.95	1.00	1.00
Frt	1.00	0.85		1.00	0.85	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1507	1504	1770	5085	1583	3539	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1507	1504	1770	5085	1583	3539	1863	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)	3	3	1	380	1	165	5	748	559	617	145	1
RTOR Reduction (vph)	0	1	0	0	69	11	0	0	0	0	0	0
Lane Group Flow (vph)	3	3	0	380	15	71	5	748	559	617	145	1
Turn Type	Prot	custom		Prot		custom	Prot		Free		Prot	Perm
Protected Phases	7	4		3	8	8	5	2		6	6	
Permitted Phases		5 7				2			Free			6
Actuated Green, G (s)	1.2	2.4		15.7	15.6	81.8	1.2	66.2	95.0	61.0	61.0	61.0
Effective Green, g (s)	1.2	2.4		15.7	15.6	81.8	1.2	66.2	95.0	61.0	61.0	61.0
Actuated g/C Ratio	0.01	0.03		0.17	0.16	0.86	0.01	0.70	1.00	0.64	0.64	0.64
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	22	107		567	247	1358	22	3543	1583	2272	1196	1016
v/s Ratio Prot	0.00	0.00		c0.11	0.01	0.01	0.00	0.15		0.17	0.08	
v/s Ratio Perm		0.00				0.04			c0.35			0.00
v/c Ratio	0.14	0.03		0.67	0.06	0.05	0.23	0.21	0.35	0.27	0.12	0.00
Uniform Delay, d1	46.4	45.2		37.2	33.5	1.0	46.4	5.1	0.0	7.4	6.6	6.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.95	0.50	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1		3.1	0.1	0.0	3.9	0.1	0.5	0.3	0.2	0.0
Delay (s)	49.2	45.3		40.3	33.6	1.0	48.2	2.7	0.5	7.7	6.8	6.1
Level of Service	D	D		D	C	A	D	A	A	A	A	A
Approach Delay (s)					33.4			1.9		7.5		
Approach LOS					C			A		A		





























Intersection Summary

HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

11: I-80 EB & Rocklin Crossings

2/7/2011

												
Movement	EBL2	EBT	EBR	WBL	WBR	WBR2	NBT	NBR	NBR2	SBL	SBT	SBR
Lane Configurations	 	 			 		  			 		
Volume (vph)	192	567	163	106	736	142	245	377	158	372	476	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	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	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1583	1583	5085	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.37	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	682	1583	1583	5085	1863	1583	3433	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)	209	616	177	115	800	154	266	410	172	404	517	43
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	132	0	0	0
Lane Group Flow (vph)	209	616	91	115	800	154	266	410	40	404	517	43
Turn Type	Split		Perm	custom	custom	Free		Prot	Perm	Prot		Free
Protected Phases	4	4					2	2		1	6	
Permitted Phases			4	7	7	Free			2			Free
Actuated Green, G (s)	49.0	49.0	49.0	49.0	49.0	95.0	22.0	22.0	22.0	12.0	38.0	95.0
Effective Green, g (s)	49.0	49.0	49.0	49.0	49.0	95.0	22.0	22.0	22.0	12.0	38.0	95.0
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52	1.00	0.23	0.23	0.23	0.13	0.40	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
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)	1771	1825	816	352	816	1583	1178	431	367	434	1416	1583
v/s Ratio Prot	0.06	0.17					0.05	c0.22		c0.12	0.15	
v/s Ratio Perm			0.06	0.17	c0.51	0.10			0.03			0.03
v/c Ratio	0.12	0.34	0.11	0.33	0.98	0.10	0.23	0.95	0.11	0.93	0.37	0.03
Uniform Delay, d1	11.9	13.5	11.8	13.4	22.5	0.0	29.6	36.0	28.8	41.1	20.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.84	0.92	0.86	0.85	1.00
Incremental Delay, d2	0.0	0.1	0.1	0.5	26.6	0.1	0.4	32.5	0.6	25.9	0.7	0.0
Delay (s)	11.9	13.6	11.9	13.9	49.1	0.1	24.2	62.9	27.0	61.4	17.6	0.0
Level of Service	B	B	B	B	D	A	C	E	C	E	B	A
Approach Delay (s)		12.9					43.5				35.2	
Approach LOS		B					D				D	
Intersection Summary												
HCM Average Control Delay			32.1				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			95.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			75.6%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

12: Dominguez Drive & Sierra College Blvd.

2/7/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶↶	↶↶	↶↶↶	↶	↶	↶↶↶
Volume (vph)	101	25	705	39	105	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
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)	3433	2787	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	5085	1583	1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	27	766	42	114	696
RTOR Reduction (vph)	0	25	0	14	0	0
Lane Group Flow (vph)	110	2	766	28	114	696
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	7.2	7.2	64.4	64.4	11.4	79.8
Effective Green, g (s)	7.2	7.2	64.4	64.4	11.4	79.8
Actuated g/C Ratio	0.08	0.08	0.68	0.68	0.12	0.84
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	260	211	3447	1073	212	4271
v/s Ratio Prot	c0.03		c0.15		c0.06	0.14
v/s Ratio Perm		0.00		0.02		
v/c Ratio	0.42	0.01	0.22	0.03	0.54	0.16
Uniform Delay, d1	41.9	40.6	5.8	5.0	39.3	1.4
Progression Factor	1.00	1.00	1.00	1.00	0.90	0.32
Incremental Delay, d2	1.1	0.0	0.1	0.0	2.5	0.1
Delay (s)	43.0	40.6	6.0	5.1	38.0	0.5
Level of Service	D	D	A	A	D	A
Approach Delay (s)	42.6		5.9			5.8
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

