

# Appendix F

*Traffic Study Technical Appendices*



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Level of Service Calculations

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

6/2/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	15	1079	398	57	132	10
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	1199	442	63	147	11
RTOR Reduction (vph)	0	0	0	36	0	8
Lane Group Flow (vph)	17	1199	442	27	147	3
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.2	23.0	17.8	17.8	11.2	11.2
Effective Green, g (s)	1.2	23.0	17.8	17.8	11.2	11.2
Actuated g/C Ratio	0.03	0.55	0.42	0.42	0.27	0.27
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)	50	1874	763	668	470	420
v/s Ratio Prot	0.01	c0.35	0.24		c0.08	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.34	0.64	0.58	0.04	0.31	0.01
Uniform Delay, d1	20.1	6.7	9.3	7.2	12.4	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.7	1.1	0.0	1.7	0.0
Delay (s)	24.1	7.4	10.4	7.2	14.2	11.4
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.7	10.0		14.0	
Approach LOS		A	B		B	

Intersection Summary	
HCM Average Control Delay	8.8 HCM Level of Service A
HCM Volume to Capacity ratio	0.53
Actuated Cycle Length (s)	42.2 Sum of lost time (s) 8.0
Intersection Capacity Utilization	44.8% ICU Level of Service A
Analysis Period (min)	15

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	3	1132	27	104	433	28	16	6	161	95	6	3
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3428		1770	3413			1798	1583		1779	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81	1.00		0.72	1.00
Satd. Flow (perm)	1770	3428		1770	3413			1504	1583		1343	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	1258	30	116	481	31	18	7	179	106	7	3
RTOR Reduction (vph)	0	3	0	0	6	0	0	0	141	0	0	2
Lane Group Flow (vph)	3	1285	0	116	506	0	0	25	38	0	113	1
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4	8		8
Actuated Green, G (s)	1.3	20.9		5.8	25.4			10.6	10.6		10.6	10.6
Effective Green, g (s)	1.3	20.9		5.8	25.4			10.6	10.6		10.6	10.6
Actuated g/C Ratio	0.03	0.42		0.12	0.52			0.22	0.22		0.22	0.22
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)	47	1453		208	1758			323	340		289	340
v/s Ratio Prot	0.00	c0.37		c0.07	0.15						c0.08	0.00
v/s Ratio Perm							0.02	0.02				
v/c Ratio	0.06	0.88		0.56	0.29			0.08	0.11		0.39	0.00
Uniform Delay, d1	23.4	13.1		20.5	6.8			15.4	15.6		16.6	15.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	6.8		3.2	0.1			0.1	0.1		0.9	0.0
Delay (s)	24.0	19.9		23.8	6.9			15.5	15.7		17.5	15.2
Level of Service	C	B		C	A			B	B		B	B
Approach Delay (s)		19.9			10.0			15.7			17.4	
Approach LOS		B			B			B			B	

Intersection Summary	
HCM Average Control Delay	16.6 HCM Level of Service B
HCM Volume to Capacity ratio	0.69
Actuated Cycle Length (s)	49.3 Sum of lost time (s) 12.0
Intersection Capacity Utilization	60.5% ICU Level of Service B
Analysis Period (min)	15

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	128	1294	14	34	601	115	7	6	16	80	7	75
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3433		1770	3438	1583		1814	1583		1781	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.88	1.00		0.73	1.00
Satd. Flow (perm)	1770	3433		1770	3438	1583		1647	1583		1365	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	142	1438	16	38	668	128	8	7	18	89	8	83
RTOR Reduction (vph)	0	0	0	0	0	49	0	0	15	0	0	70
Lane Group Flow (vph)	142	1454	0	38	668	79	0	15	3	0	97	13
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.6	80.5		5.5	71.4	71.4	18.0	18.0		18.0	18.0	
Effective Green, g (s)	14.6	80.5		5.5	71.4	71.4	18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.13	0.69		0.05	0.62	0.62	0.16	0.16		0.16	0.16	
Clearance Time (s)	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	
Lane Grp Cap (vph)	223	2382		84	2116	974	256	246		212	246	
v/s Ratio Prot	c0.08	c0.42		0.02	0.19					c0.07	0.01	
v/s Ratio Perm					0.05		0.01	0.00				0.01
v/c Ratio	0.64	0.61		0.45	0.32	0.08	0.06	0.01		0.46	0.05	
Uniform Delay, d1	48.2	9.4		53.8	10.6	9.0	41.8	41.5		44.6	41.7	
Progression Factor	1.00	1.00		1.13	0.61	0.25	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	1.2		3.7	0.4	0.2	0.1	0.0		1.6	0.1	
Delay (s)	54.0	10.6		64.6	6.9	2.5	41.9	41.5		46.1	41.8	
Level of Service	D	B		E	A	A	D	D		D	D	
Approach Delay (s)		14.5			8.8			41.7			44.1	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	32	1369	2	45	777	109	4	1	15	67	2	3
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3438		1770	3438	1583		1791	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.86	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3438	1583		1602	1583		1357	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	1521	2	50	863	121	4	1	17	74	2	3
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	15	0	0	3
Lane Group Flow (vph)	36	1523	0	50	863	88	0	5	2	0	76	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	4		4	4		4	4
Actuated Green, G (s)	5.4	82.4		7.6	84.6	84.6	14.0	14.0		14.0	14.0	
Effective Green, g (s)	5.4	82.4		7.6	84.6	84.6	14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.05	0.71		0.07	0.73	0.73	0.12	0.12		0.12	0.12	
Clearance Time (s)	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	
Lane Grp Cap (vph)	82	2442		116	2507	1154	193	191		164	191	
v/s Ratio Prot	0.02	c0.44		c0.03	0.25							
v/s Ratio Perm					0.06		0.00	0.00			c0.06	0.00
v/c Ratio	0.44	0.62		0.43	0.34	0.08	0.03	0.01		0.46	0.00	
Uniform Delay, d1	53.8	8.7		52.1	5.7	4.5	45.0	44.9		47.5	44.9	
Progression Factor	1.37	0.69		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	1.0		2.6	0.4	0.1	0.1	0.0		2.1	0.0	
Delay (s)	76.8	7.1		54.7	6.1	4.6	45.0	44.9		49.6	44.9	
Level of Service	E	A		D	A	A	D	D		D	D	
Approach Delay (s)		8.7			8.2			45.0			49.4	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	566	1026	28	96	516	541	62	132	155	571	92	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	3420		1770	3438	1504	1681	1765	1504	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	3420		1770	3438	1504	1681	1765	1504	3433	1863	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	596	1080	29	101	543	569	65	139	163	601	97	247
RTOR Reduction (vph)	0	2	0	0	433	0	0	136	0	0	0	0
Lane Group Flow (vph)	596	1107	0	101	543	136	58	146	27	601	97	247
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	16.9	30.8		7.6	21.5	21.5	15.1	15.1	15.1	20.0	20.0	90.0
Effective Green, g (s)	16.9	30.8		7.6	21.5	21.5	15.1	15.1	15.1	20.0	20.0	90.0
Actuated g/C Ratio	0.19	0.34		0.08	0.24	0.24	0.17	0.17	0.17	0.22	0.22	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	645	1170		149	821	359	282	296	252	763	414	1550
v/s Ratio Prot	c0.17	c0.32		0.06	0.16		0.03	c0.08		c0.18	0.05	
v/s Ratio Perm						0.09			0.02			0.16
v/c Ratio	0.92	0.95		0.68	0.66	0.38	0.21	0.49	0.11	0.79	0.23	0.16
Uniform Delay, d1	35.9	28.8		40.0	31.0	28.7	32.3	34.0	31.7	33.0	28.7	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	19.0	16.2		11.6	4.2	3.0	0.4	1.3	0.2	5.4	0.3	0.2
Delay (s)	54.9	45.0		51.6	35.1	31.7	32.6	35.3	31.9	38.4	29.0	0.2
Level of Service	D	D		D	D	C	C	D	C	D	C	A
Approach Delay (s)		48.5			34.9			33.4			27.5	
Approach LOS		D			C			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay	38.6			HCM Level of Service			D					
HCM Volume to Capacity ratio	0.79											
Actuated Cycle Length (s)	90.0			Sum of lost time (s)			12.0					
Intersection Capacity Utilization	80.1%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 6: Mt. Hermon Road & Glen Canyon Road

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1469	32	31	1241	127	13	3	36	108	2	88
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Flt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.96	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3429		1770	3438	1583	1789	1583	1681	1688	1583	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.82	1.00	0.75	0.73	1.00	1.00
Satd. Flow (perm)	1770	3429		1770	3438	1583	1527	1583	1321	1299	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	1546	34	33	1306	134	14	3	38	114	2	93
RTOR Reduction (vph)	0	1	0	0	46	0	0	33	0	0	0	80
Lane Group Flow (vph)	93	1579	0	33	1306	88	0	17	5	58	58	13
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	11.4	82.1		5.3	76.0	76.0	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	11.4	82.1		5.3	76.0	76.0	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.10	0.71		0.05	0.66	0.66	0.14	0.14	0.14	0.14	0.14	0.14
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)	174	2427		81	2252	1037	219	227	189	186	227	227
v/s Ratio Prot	c0.05	c0.46		0.02	0.38							
v/s Ratio Perm						0.06	0.01	0.00	0.04	c0.04	0.01	
v/c Ratio	0.53	0.65		0.41	0.58	0.08	0.08	0.02	0.31	0.31	0.06	0.06
Uniform Delay, d1	49.8	9.2		53.8	11.1	7.3	43.1	42.7	44.5	44.6	42.9	
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	3.1	1.4		3.3	1.1	0.2	0.2	0.0	0.9	1.0	0.1	
Delay (s)	52.9	10.6		57.1	12.2	7.5	43.2	42.8	45.5	45.5	43.1	
Level of Service	D	B		E	B	A	D	D	D	D	D	D
Approach Delay (s)		12.9			12.8		42.9			44.4		
Approach LOS		B			B		D			D		
<b>Intersection Summary</b>												
HCM Average Control Delay	15.3			HCM Level of Service			B					
HCM Volume to Capacity ratio	0.58											
Actuated Cycle Length (s)	116.0			Sum of lost time (s)			8.0					
Intersection Capacity Utilization	68.3%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	6	18	↑
Volume (vph)	0	1551	53	90	1046	0	231	0	157	6	18	179
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1841	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.74		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2678		1583		1841	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1633	56	95	1101	0	243	0	165	6	19	188
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	146	0	0	98
Lane Group Flow (vph)	0	1633	30	95	1101	0	243	0	19	0	25	90
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		8					4
Actuated Green, G (s)		50.2	50.2	6.0	60.2		10.9		10.9		10.7	10.7
Effective Green, g (s)		50.2	50.2	6.0	60.2		10.9		10.9		10.7	10.7
Actuated g/C Ratio		0.54	0.54	0.06	0.64		0.12		0.12		0.11	0.11
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)		1840	847	113	2271		311		184		210	175
v/s Ratio Prot		c0.47		c0.05	0.31						0.01	
v/s Ratio Perm			0.02				c0.09		0.01			c0.06
v/c Ratio		0.89	0.04	0.84	0.48		0.78		0.10		0.12	0.51
Uniform Delay, d1		19.3	10.3	43.4	8.7		40.3		37.1		37.3	39.1
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		5.6	0.0	40.1	0.2		12.0		0.3		0.3	2.5
Delay (s)		24.9	10.3	83.5	8.9		52.3		37.3		37.6	41.6
Level of Service		C	B	F	A		D		D		D	D
Approach Delay (s)		24.4			14.8		46.3				41.1	
Approach LOS		C			B		D				D	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

6/2/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑	↑
Volume (vph)	184	174	145	1010	508	124
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.95
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1512
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1512
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	204	193	161	1122	564	138
RTOR Reduction (vph)	0	159	0	0	0	58
Lane Group Flow (vph)	204	34	161	1122	564	80
Confl. Peds. (#/hr)	30	30				30
Turn Type	Perm	Prot		Perm		Perm
Protected Phases	4		5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	20.6	20.6	15.9	87.4	67.5	67.5
Effective Green, g (s)	20.6	20.6	15.9	87.4	67.5	67.5
Actuated g/C Ratio	0.18	0.18	0.14	0.75	0.58	0.58
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)	314	266	243	2666	2959	880
v/s Ratio Prot	c0.12		c0.09	c0.32	0.11	
v/s Ratio Perm		0.02				0.05
v/c Ratio	0.65	0.13	0.66	0.42	0.19	0.09
Uniform Delay, d1	44.3	40.1	47.5	5.2	11.4	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.2	6.6	0.5	0.1	0.2
Delay (s)	48.9	40.4	54.1	5.7	11.5	10.9
Level of Service	D	D	D	A	B	B
Approach Delay (s)	44.8			11.7	11.4	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	15	0	37	4	0	2	97	1210	12	5	682	14
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.96	1.00		1.00	1.00		1.00	1.00	
Fit Protected	0.95	1.00		0.97	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1722	1770		3534	3528		1770	3528	
Fit Permitted	0.75	1.00		0.81	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1406	1583		1446	1770		3534	3528		1770	3528	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	0	41	4	0	2	108	1344	13	6	758	16
RTOR Reduction (vph)	0	0	37	0	2	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	17	4	0	4	0	108	1356	0	6	772	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.3	5.3		5.3		4.3	34.4		1.2	31.3	
Effective Green, g (s)		5.3	5.3		5.3		4.3	34.4		1.2	31.3	
Actuated g/C Ratio		0.10	0.10		0.10		0.08	0.65		0.02	0.59	
Clearance Time (s)		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	
Lane Grp Cap (vph)	141	159		145			144	2298		40	2087	
v/s Ratio Prot							c0.06	c0.38		0.00	0.22	
v/s Ratio Perm	c0.01	0.00		0.00								
v/c Ratio	0.12	0.03		0.03			0.75	0.59		0.15	0.37	
Uniform Delay, d1	21.7	21.5		21.5			23.8	5.2		25.3	5.6	
Progression Factor	1.00	1.00		1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.1		0.1			19.5	0.4		1.7	0.5	
Delay (s)	22.1	21.5		21.6			43.3	5.7		27.1	6.2	
Level of Service	C	C		C			D	A		C	A	
Approach Delay (s)	21.7			21.6			8.4			6.3		
Approach LOS	C			C			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay		8.1					HCM Level of Service			A		
HCM Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		52.9					Sum of lost time (s)			12.0		
Intersection Capacity Utilization		58.0%					ICU Level of Service			B		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	16	2	45	17	1	11	61	1001	133	97	756	30
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	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85	1.00	0.86	1.00		1.00	0.98		1.00	0.99	
Fit Protected	0.96	1.00	0.95	1.00	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1783	1583	1770	1605	1770		3477	3477		1770	3519	
Fit Permitted	0.75	1.00	0.78	1.00	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1388	1583	1461	1605	1770		3477	3477		1770	3519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	2	50	19	1	12	68	1112	148	108	840	33
RTOR Reduction (vph)	0	0	44	0	11	0	0	15	0	0	4	0
Lane Group Flow (vph)	0	20	6	19	2	0	68	1245	0	108	869	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.1	5.1	5.1	5.1		4.1	24.3		4.1	24.3	
Effective Green, g (s)		5.1	5.1	5.1	5.1		4.1	24.3		4.1	24.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.09	0.53		0.09	0.53	
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)	156	177	164	180			159	1857		159	1879	
v/s Ratio Prot							0.00	0.04	c0.36	c0.06	0.25	
v/s Ratio Perm	c0.01	0.00	0.01									
v/c Ratio	0.13	0.03	0.12	0.01			0.43	0.67		0.68	0.46	
Uniform Delay, d1	18.2	18.0	18.2	18.0			19.6	7.7		20.1	6.6	
Progression Factor	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.1	0.3	0.0			1.8	1.0		11.0	0.8	
Delay (s)	18.6	18.1	18.5	18.0			21.4	8.7		31.0	7.4	
Level of Service	B	B	B	B			C	A		C	A	
Approach Delay (s)	18.2			18.3			9.3			10.0		
Approach LOS	B			B			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay		10.0					HCM Level of Service			A		
HCM Volume to Capacity ratio		0.59										
Actuated Cycle Length (s)		45.5					Sum of lost time (s)			12.0		
Intersection Capacity Utilization		56.1%					ICU Level of Service			B		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖		↗	↖	↗		↖	↗	
Volume (vph)	0	0	0	28	0	5	0	867	86	40	781	0
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
Lane Util. Factor				1.00		1.00		0.95		1.00		0.95
Frt				1.00		0.85		0.99		1.00		1.00
Flt Protected				0.95		1.00		1.00		0.95		1.00
Satd. Flow (prot)				1770		1583		3491		1770		3539
Flt Permitted				0.95		1.00		1.00		0.95		1.00
Satd. Flow (perm)				1770		1583		3491		1770		3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	31	0	6	0	963	96	44	868	0
RTOR Reduction (vph)	0	0	0	0	0	6	0	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	31	0	0	0	1049	0	44	868	0
Turn Type				custom		custom		Prot		Prot		
Protected Phases							5	2		1	6	
Permitted Phases				8		8						
Actuated Green, G (s)				3.4		3.4		23.9		2.6	30.5	
Effective Green, g (s)				3.4		3.4		23.9		2.6	30.5	
Actuated g/C Ratio				0.08		0.08		0.57		0.06	0.73	
Clearance Time (s)				4.0		4.0		4.0		4.0	4.0	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				144		128		1991		110	2576	
v/s Ratio Prot								c0.30		0.02	c0.25	
v/s Ratio Perm				c0.02		0.00						
v/c Ratio				0.22		0.00		0.53		0.40	0.34	
Uniform Delay, d1				18.0		17.7		5.5		18.9	2.1	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.8		0.0		0.3		2.4	0.1	
Delay (s)				18.8		17.7		5.8		21.3	2.1	
Level of Service				B		B		A		C	A	
Approach Delay (s)	0.0				18.6			5.8			3.1	
Approach LOS	A				B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay				4.8				HCM Level of Service		A		
HCM Volume to Capacity ratio				0.49								
Actuated Cycle Length (s)				41.9				Sum of lost time (s)		12.0		
Intersection Capacity Utilization				43.2%				ICU Level of Service		A		
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖		↗	↖	↗		↖	↗	
Volume (vph)	0	0	0	39	0	36	0	880	99	67	757	0
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
Lane Util. Factor				1.00		1.00		0.95		1.00		0.95
Frt				1.00		0.85		0.98		1.00		1.00
Flt Protected				0.95		1.00		1.00		0.95		1.00
Satd. Flow (prot)				1770		1583		3486		1770		3539
Flt Permitted				0.76		1.00		1.00		0.95		1.00
Satd. Flow (perm)				1410		1583		3486		1770		3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	43	0	40	0	978	110	74	841	0
RTOR Reduction (vph)	0	0	0	0	0	35	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	43	0	5	0	1074	0	74	841	0
Turn Type		Perm		custom		custom		Prot		Prot		
Protected Phases			4				5	2		1	6	
Permitted Phases		4		8		8						
Actuated Green, G (s)				5.4		5.4		21.4		4.2	29.6	
Effective Green, g (s)				5.4		5.4		21.4		4.2	29.6	
Actuated g/C Ratio				0.13		0.13		0.50		0.10	0.69	
Clearance Time (s)				4.0		4.0		4.0		4.0	4.0	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				177		199		1735		173	2436	
v/s Ratio Prot								c0.31		0.04	c0.24	
v/s Ratio Perm				c0.03		0.00						
v/c Ratio				0.24		0.03		0.62		0.43	0.35	
Uniform Delay, d1				17.0		16.5		7.8		18.3	2.7	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.7		0.1		0.7		1.7	0.1	
Delay (s)				17.7		16.5		8.5		20.0	2.8	
Level of Service				B		B		A		B	A	
Approach Delay (s)	0.0				17.1			8.5			4.2	
Approach LOS	A				B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay				7.0				HCM Level of Service		A		
HCM Volume to Capacity ratio				0.53								
Actuated Cycle Length (s)				43.0				Sum of lost time (s)		12.0		
Intersection Capacity Utilization				46.6%				ICU Level of Service		A		
Analysis Period (min)				15								
c Critical Lane Group												



HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	24	46	754	51	253	859
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3494		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3494		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	51	838	57	281	954
RTOR Reduction (vph)	0	28	9	0	0	0
Lane Group Flow (vph)	27	23	886	0	281	954
Confl. Peds. (#/hr)				25		
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	1.4	10.8	14.3	9.4	27.7	
Effective Green, g (s)	1.4	10.8	14.3	9.4	27.7	
Actuated g/C Ratio	0.04	0.29	0.39	0.25	0.75	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	67	631	1347	448	2642	
v/s Ratio Prot	c0.02	0.01	c0.25	c0.16	0.27	
v/s Ratio Perm		0.01				
v/c Ratio	0.40	0.04	0.66	0.63	0.36	
Uniform Delay, d1	17.4	9.4	9.4	12.3	1.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	0.0	1.2	2.7	0.1	
Delay (s)	21.4	9.4	10.6	15.0	1.7	
Level of Service	C	A	B	B	A	
Approach Delay (s)	13.6		10.6		4.7	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	37.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

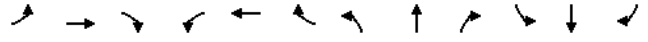
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	4	10	4	428	39	472	17	474	274	255	669	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.77	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1838	1215	1681	1699	1583	1770	3539	1470	1770	3521		
Fit Permitted	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1838	1215	1681	1699	1583	1770	3539	1470	1770	3521		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	11	4	476	43	524	19	527	304	283	743	20
RTOR Reduction (vph)	0	0	4	0	0	282	0	0	232	0	2	0
Lane Group Flow (vph)	0	15	0	257	262	242	19	527	72	283	761	0
Confl. Peds. (#/hr)				25					25			25
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		2.0	2.0	13.7	13.7	27.7	1.6	14.3	14.3	14.0	26.7	
Effective Green, g (s)		2.0	2.0	13.7	13.7	27.7	1.6	14.3	14.3	14.0	26.7	
Actuated g/C Ratio		0.03	0.03	0.23	0.23	0.46	0.03	0.24	0.24	0.23	0.44	
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	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		61	41	384	388	836	47	843	350	413	1567	
v/s Ratio Prot		c0.01		0.15	c0.15	0.07	0.01	c0.15		c0.16	0.22	
v/s Ratio Perm			0.00			0.09			0.05			
v/c Ratio		0.25	0.00	0.67	0.68	0.29	0.40	0.63	0.21	0.69	0.49	
Uniform Delay, d1		28.3	28.0	21.1	21.1	10.0	28.7	20.5	18.3	21.0	11.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.23	0.73	
Incremental Delay, d2		2.1	0.0	4.4	4.6	0.2	5.6	3.5	1.3	4.1	0.9	
Delay (s)		30.4	28.1	25.5	25.7	10.2	34.3	23.9	19.6	29.9	9.5	
Level of Service		C	C	C	C	B	C	C	B	C	A	
Approach Delay (s)		29.9			17.9			22.6			15.0	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

6/2/2008



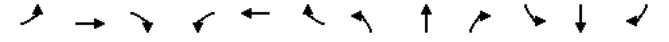
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	19	189	297	265	17	17	427	296	180	97	313	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.93	1.00	0.99	1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.98	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.96	0.95	1.00	1.00	0.95	1.00	1.00	0.99	1.00
Satd. Flow (prot)	1854	1583	1681	1664	3433	3539	1480	1770	3480			
Fit Permitted	1.00	1.00	0.95	0.96	0.95	1.00	1.00	0.95	1.00	1.00	0.99	1.00
Satd. Flow (perm)	1854	1583	1681	1664	3433	3539	1480	1770	3480			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	210	330	294	19	19	474	329	200	108	348	27
RTOR Reduction (vph)	0	0	271	0	8	0	0	0	146	0	10	0
Lane Group Flow (vph)	0	231	59	168	156	0	474	329	54	108	365	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Perm	Split
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)	10.8	10.8	10.6	10.6	10.8	16.3	16.3	6.3	11.8			
Effective Green, g (s)	10.8	10.8	10.6	10.6	10.8	16.3	16.3	6.3	11.8			
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.27	0.27	0.10	0.20			
Clearance Time (s)	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	5.0	3.0	3.0	3.0	5.0			
Lane Grp Cap (vph)	334	285	297	294	618	961	402	186	684			
v/s Ratio Prot	c0.12		c0.10	0.09	c0.14	0.09		0.06	c0.10			
v/s Ratio Perm		0.04				0.04						
v/c Ratio	0.69	0.21	0.57	0.53	0.77	0.34	0.14	0.58	0.53			
Uniform Delay, d1	23.0	21.0	22.6	22.4	23.4	17.5	16.5	25.6	21.6			
Progression Factor	1.00	1.00	1.00	1.00	0.80	0.71	0.82	1.00	1.00			
Incremental Delay, d2	6.1	0.4	2.5	1.7	5.4	0.8	0.6	4.6	3.0			
Delay (s)	29.1	21.3	25.1	24.2	24.1	13.3	14.1	30.1	24.6			
Level of Service	C	C	C	C	C	B	B	C	C			
Approach Delay (s)	24.5			24.6		18.5			25.8			
Approach LOS	C			C		B			C			

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

6/2/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	121	79	351	448	88	22	215	148	167	14	63	17
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97	1.00	1.00	0.85	0.98	1.00	0.98	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.99	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1808	1770	1863	1450	1803			
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.99	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1808	1770	1863	1450	1803			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	134	88	390	498	98	24	239	164	186	16	70	19
RTOR Reduction (vph)	0	0	217	0	12	0	0	0	151	0	11	0
Lane Group Flow (vph)	134	88	173	498	110	0	239	164	35	0	94	0
Confl. Peds. (#/hr)							25					
Turn Type	Prot		pm+ov	Prot		Split		Perm	Split		Perm	Split
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2					3				
Actuated Green, G (s)	6.5	7.7	19.8	20.2	21.4	12.1	12.1	12.1	7.5			
Effective Green, g (s)	6.5	7.7	19.8	20.2	21.4	12.1	12.1	12.1	7.5			
Actuated g/C Ratio	0.10	0.12	0.31	0.32	0.34	0.19	0.19	0.19	0.12			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	181	226	593	563	609	337	355	276	213			
v/s Ratio Prot	0.08	c0.05	0.06	c0.28	0.06	c0.14	0.09		c0.05			
v/s Ratio Perm			0.05				0.02					
v/c Ratio	0.74	0.39	0.29	0.88	0.18	0.71	0.46	0.13	0.44			
Uniform Delay, d1	27.7	25.7	16.5	20.5	14.9	24.1	22.8	21.3	26.0			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	15.0	1.3	0.3	15.3	0.2	6.7	1.0	0.2	1.4			
Delay (s)	42.7	27.0	16.8	35.8	15.0	30.7	23.8	21.5	27.5			
Level of Service	D	C	B	D	B	C	C	C	C			
Approach Delay (s)	23.9			31.7		25.9			27.5			
Approach LOS	C			C		C			C			

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 17: Mt. Hermon Road & K-Mart Access

6/2/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	33	1294	61	36	510	56	54	9	46	41	7	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
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Flt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3515		1770	3539	1583		1786	1583		1787	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.77	1.00		0.78	1.00
Satd. Flow (perm)	1770	3515		1770	3539	1583		1432	1583		1450	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	1438	68	40	567	62	60	10	51	46	8	1
RTOR Reduction (vph)	0	4	0	0	0	30	0	0	37	0	0	1
Lane Group Flow (vph)	37	1502	0	40	567	32	0	70	14	0	54	0
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	3.6	39.9		3.6	39.9	39.9		21.2	21.2		21.2	21.2
Effective Green, g (s)	3.6	39.9		3.6	39.9	39.9		21.2	21.2		21.2	21.2
Actuated g/C Ratio	0.05	0.52		0.05	0.52	0.52		0.28	0.28		0.28	0.28
Clearance Time (s)	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
Lane Grp Cap (vph)	83	1829		83	1841	823		396	438		401	438
v/s Ratio Prot	0.02	c0.43		c0.02	0.16							
v/s Ratio Perm						0.02	c0.05	0.01		0.04		0.00
v/c Ratio	0.45	0.82		0.48	0.31	0.04		0.18	0.03		0.13	0.00
Uniform Delay, d1	35.6	15.4		35.6	10.5	9.0		21.1	20.3		20.9	20.1
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.8	3.1		4.4	0.1	0.0		1.0	0.1		0.7	0.0
Delay (s)	39.4	18.5		40.0	10.6	9.0		22.1	20.4		21.6	20.1
Level of Service	D	B		D	B	A		C	C		C	C
Approach Delay (s)		19.0			12.2			21.4			21.5	
Approach LOS		B			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		17.3		HCM Level of Service				B				
HCM Volume to Capacity ratio		0.59										
Actuated Cycle Length (s)		76.7		Sum of lost time (s)				12.0				
Intersection Capacity Utilization		54.5%		ICU Level of Service				A				
Analysis Period (min)		15										
c Critical Lane Group												

AM Peak Hour - Existing Conditions  
 Town Center Specific Plan  
 City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

*****												
Intersection #18 Mt Hermon Road/Washington Mutual Access												
*****												
Average Delay (sec/veh):	2.5		Worst Case Level Of Service: C[ 23.1]									
*****												
Street Name:	Washington Mutual Access				Mt Hermon Road							
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	1	0	0	1	0	1	1	0	1
-----												
Volume Module:												
Base Vol:	2	0	111	0	0	0	0	0	1475	22	162	683
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	111	0	0	0	0	0	1475	22	162	683
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	2	0	123	0	0	0	0	0	1639	24	180	759
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	123	0	0	0	0	0	1639	24	180	759
-----												
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	7.5	6.5	6.9	xxxx	xxxx	xxxx	4.1	xxxx	xxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	xxxx	xxxx	xxxx	2.2	xxxx	xxxx
-----												
Capacity Module:												
Cnflct Vol:	2391	2770	832	1938	2782	379	xxxx	xxxx	xxxx	1663	xxxx	xxxx
Potent Cap.:	29	20	317	40	19	624	xxxx	xxxx	xxxx	392	xxxx	xxxx
Move Cap.:	19	11	317	16	10	624	xxxx	xxxx	xxxx	392	xxxx	xxxx
Volume/Cap:	0.12	0.00	0.39	0.00	0.00	0.00	xxxx	xxxx	xxxx	0.46	xxxx	xxxx
-----												
Level of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	2.3	xxxx	xxxx
Control Del:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	21.7	xxxx	xxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	322	xxxx	xxxx	xxxx	0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	xxxx	1.8	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	xxxx	23.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:	23.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		
*****												

Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

AM Peak Hour - Existing Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.188
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0
Volume Module:
Base Vol: 57 1 92 0 1 0 0 7 10 99 21 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 57 1 92 0 1 0 0 7 10 99 21 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume: 63 1 102 0 1 0 0 8 11 110 23 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 63 1 102 0 1 0 0 8 11 110 23 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 63 1 102 0 1 0 0 8 11 110 23 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.38 0.01 0.61 0.00 1.00 0.00 0.00 0.41 0.59 0.82 0.17 0.01
Final Sat.: 336 6 543 0 785 0 0 352 503 647 137 7
Capacity Analysis Module:
Vol/Sat: 0.19 0.19 0.19 xxxx 0.00 xxxx xxxx 0.02 0.02 0.17 0.17 0.17
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
Delay/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
LOS by Move: A A A \* A \* A A A A A A
ApproachDel: 7.8 7.4 7.1 8.3
Delay Adj: 1.00 1.00
ApprAdjDel: 7.8 7.4 7.1 8.3
LOS by Appr: A A A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.2 0.2
Note: Queue reported is the number of cars per lane.

AM Peak Hour - Existing Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 6.0 Worst Case Level Of Service: B[ 12.2]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 105 27 2 0 49 14 14 0 78 10 1 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 105 27 2 0 49 14 14 0 78 10 1 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume: 117 30 2 0 54 16 16 0 87 11 1 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 117 30 2 0 54 16 16 0 87 11 1 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxxx xxxxx 7.1 6.5 6.2 7.1 6.5 xxxxx
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 xxxxx
Capacity Module:
Conflict Vol: 70 xxxx xxxxx xxxxx xxxxx xxxxx 327 328 62 370 334 xxxxx
Potent Cap.: 1544 xxxx xxxxx xxxxx xxxxx xxxxx 630 594 1008 590 589 xxxxx
Move Cap.: 1544 xxxx xxxxx xxxxx xxxxx xxxxx 590 546 1008 506 541 xxxxx
Volume/Cap: 0.08 xxxx xxxxx xxxxx xxxxx xxxxx 0.03 0.00 0.09 0.02 0.00 xxxxx
Level of Service Module:
2Way95thQ: 0.2 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 7.5 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxxx xxxxx xxxxx 910 xxxxx 509 xxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.4 xxxxx 0.1 xxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 9.5 xxxxx 12.2 xxxx xxxxx
Shared LOS: \*
ApproachDel: xxxxxxx xxxxxxx 9.5 12.2
ApproachLOS: \* \* A B
Note: Queue reported is the number of cars per lane.

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

6/3/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	12	509	1160	145	68	9
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	566	1289	161	76	10
RTOR Reduction (vph)	0	0	0	47	0	9
Lane Group Flow (vph)	13	566	1289	114	76	1
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.3	64.5	59.2	59.2	11.0	11.0
Effective Green, g (s)	1.3	64.5	59.2	59.2	11.0	11.0
Actuated g/C Ratio	0.02	0.77	0.71	0.71	0.13	0.13
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)	28	2656	1283	1122	233	209
v/s Ratio Prot	c0.01	0.16	c0.71		c0.04	
v/s Ratio Perm				0.07		0.00
v/c Ratio	0.46	0.21	1.00	0.10	0.33	0.01
Uniform Delay, d1	40.8	2.6	12.1	3.8	32.9	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.0	26.3	0.0	3.7	0.1
Delay (s)	52.4	2.6	38.4	3.9	36.6	31.6
Level of Service	D	A	D	A	D	C
Approach Delay (s)		3.7	34.6		36.0	
Approach LOS		A	C		D	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	13	557	19	221	1287	83	38	6	147	44	13	9
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3424		1770	3413			1786	1583		1793	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.75	1.00		0.77	1.00
Satd. Flow (perm)	1770	3424		1770	3413			1404	1583		1434	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	619	21	246	1430	92	42	7	163	49	14	10
RTOR Reduction (vph)	0	4	0	0	7	0	0	0	131	0	0	8
Lane Group Flow (vph)	14	636	0	246	1515	0	0	49	32	0	63	2
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4		8	8
Actuated Green, G (s)	1.2	18.8		11.4	29.0			10.3	10.3		10.3	10.3
Effective Green, g (s)	1.2	18.8		11.4	29.0			10.3	10.3		10.3	10.3
Actuated g/C Ratio	0.02	0.36		0.22	0.55			0.20	0.20		0.20	0.20
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)	40	1226		384	1885			275	311		281	311
v/s Ratio Prot	0.01	0.19		c0.14	c0.44						c0.04	0.00
v/s Ratio Perm								0.03	0.02			
v/c Ratio	0.35	0.52		0.64	0.80			0.18	0.10		0.22	0.01
Uniform Delay, d1	25.3	13.3		18.7	9.5			17.6	17.3		17.7	17.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	0.4		3.6	2.6			0.3	0.1		0.4	0.0
Delay (s)	30.5	13.7		22.3	12.0			17.9	17.5		18.1	17.0
Level of Service	C	B		C	B			B	B		B	B
Approach Delay (s)		14.0			13.5			17.6			18.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	139	715	4	125	1337	89	39	23	84	145	24	276
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3436		1770	3438	1583		1806	1583		1786	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.65	1.00		0.71	1.00
Satd. Flow (perm)	1770	3436		1770	3438	1583		1213	1583		1320	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	154	794	4	139	1486	99	43	26	93	161	27	307
RTOR Reduction (vph)	0	0	0	0	0	34	0	0	75	0	0	171
Lane Group Flow (vph)	154	798	0	139	1486	65	0	69	18	0	188	136
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	15.2	67.5		14.3	66.6	66.6		22.2	22.2		22.2	22.2
Effective Green, g (s)	15.2	67.5		14.3	66.6	66.6		22.2	22.2		22.2	22.2
Actuated g/C Ratio	0.13	0.58		0.12	0.57	0.57		0.19	0.19		0.19	0.19
Clearance Time (s)	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
Lane Grp Cap (vph)	232	1999		218	1974	909		232	303		253	303
v/s Ratio Prot	c0.09	0.23		0.08	c0.43						c0.14	0.09
v/s Ratio Perm					0.04		0.06	0.01			c0.14	0.09
v/c Ratio	0.66	0.40		0.64	0.75	0.07		0.30	0.06		0.74	0.45
Uniform Delay, d1	48.0	13.2		48.4	18.5	11.0		40.2	38.4		44.2	41.5
Progression Factor	1.00	1.00		1.18	0.58	0.93		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.0	0.6		4.3	1.9	0.1		0.7	0.1		11.2	1.1
Delay (s)	54.9	13.8		61.3	12.7	10.3		40.9	38.4		55.4	42.5
Level of Service	D	B		E	B	B		D	D		E	D
Approach Delay (s)		20.5			16.5			39.5			47.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	50	873	14	38	1460	294	8	0	12	173	4	55
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3431		1770	3438	1583		1770	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.42	1.00		0.72	1.00
Satd. Flow (perm)	1770	3431		1770	3438	1583		775	1583		1349	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	970	16	42	1622	327	9	0	13	192	4	61
RTOR Reduction (vph)	0	1	0	0	0	103	0	0	11	0	0	50
Lane Group Flow (vph)	56	985	0	42	1622	224	0	9	2	0	196	11
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases					6	4		4	4			4
Actuated Green, G (s)	7.8	75.1		7.1	74.4	74.4		21.8	21.8		21.8	21.8
Effective Green, g (s)	7.8	75.1		7.1	74.4	74.4		21.8	21.8		21.8	21.8
Actuated g/C Ratio	0.07	0.65		0.06	0.64	0.64		0.19	0.19		0.19	0.19
Clearance Time (s)	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
Lane Grp Cap (vph)	119	2221		108	2205	1015		146	297		254	297
v/s Ratio Prot	c0.03	0.29		0.02	c0.47						c0.15	0.01
v/s Ratio Perm					0.14		0.01	0.00			c0.15	0.01
v/c Ratio	0.47	0.44		0.39	0.74	0.22		0.06	0.01		0.77	0.04
Uniform Delay, d1	52.1	10.1		52.4	14.1	8.7		38.7	38.3		44.7	38.5
Progression Factor	1.42	0.69		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	0.6		2.3	2.2	0.5		0.2	0.0		13.5	0.1
Delay (s)	76.9	7.6		54.7	16.4	9.2		38.9	38.3		58.2	38.6
Level of Service	E	A		D	B	A		D	D		E	D
Approach Delay (s)		11.3			16.0			38.5			53.6	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕		
Volume (vph)	456	733	79	217	1199	329	132	82	118	418	92	517	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		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	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3433	3361		1770	3438	1478	1681	1748	1478	3433	1863	1550	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3433	3361		1770	3438	1478	1681	1748	1478	3433	1863	1550	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	480	772	83	228	1262	346	139	86	124	440	97	544	
RTOR Reduction (vph)	0	6	0	0	149	0	0	108	0	0	0	0	
Lane Group Flow (vph)	480	849	0	228	1262	197	110	115	16	440	97	544	
Confl. Peds. (#/hr)			30			30			30			30	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free	
Protected Phases	5	2		1	6		8	8		4	4		
Permitted Phases						6			8			Free	
Actuated Green, G (s)	20.9	56.0		20.2	55.3	55.3	16.9	16.9	16.9	20.4	20.4	130.0	
Effective Green, g (s)	20.9	56.0		20.2	55.3	55.3	16.9	16.9	16.9	20.4	20.4	130.0	
Actuated g/C Ratio	0.16	0.43		0.16	0.43	0.43	0.13	0.13	0.13	0.16	0.16	1.00	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	552	1448		275	1462	629	219	227	192	539	292	1550	
v/s Ratio Prot	c0.14	0.25		0.13	c0.37		0.07	c0.07		c0.13	0.05		
v/s Ratio Perm						0.13			0.01			c0.35	
v/c Ratio	0.87	0.59		0.83	0.86	0.31	0.50	0.51	0.08	0.82	0.33	0.35	
Uniform Delay, d1	53.2	28.2		53.2	33.9	24.8	52.6	52.7	49.7	53.0	48.7	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	13.7	1.7		18.3	7.0	1.3	1.8	1.8	0.2	9.3	0.7	0.6	
Delay (s)	66.9	29.9		71.5	40.9	26.0	54.4	54.4	49.9	62.3	49.4	0.6	
Level of Service	E	C		E	D	C	D	D	D	E	D	A	
Approach Delay (s)		43.2			41.9			52.8			30.1		
Approach LOS		D			D			D			C		
<b>Intersection Summary</b>													
HCM Average Control Delay	40.3		HCM Level of Service					D					
HCM Volume to Capacity ratio	0.80												
Actuated Cycle Length (s)	130.0					Sum of lost time (s)			16.5				
Intersection Capacity Utilization	75.2%		ICU Level of Service					D					
Analysis Period (min)	15												
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕		
Volume (vph)	154	1076	16	8	1470	97	5	3	20	85	0	112	
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.97	1.00	0.95	0.95	0.95	1.00	
Satd. Flow (prot)	1770	3432		1770	3438	1583	1806	1583	1681	1681	1583	1583	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.90	1.00	0.75	0.75	0.75	1.00	
Satd. Flow (perm)	1770	3432		1770	3438	1583	1668	1583	1332	1332	1583	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	162	1133	17	8	1547	102	5	3	21	89	0	118	
RTOR Reduction (vph)	0	1	0	0	37	0	0	18	0	0	0	101	
Lane Group Flow (vph)	162	1149	0	8	1547	65	0	8	3	44	45	17	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Perm	Perm	Perm	Perm		Perm	
Protected Phases	5	2		1	6		8	8		4	4		
Permitted Phases						6	8		8	4		4	
Actuated Green, G (s)	15.1	86.0		1.4	72.3	72.3	16.6	16.6	16.6	16.6	16.6	16.6	
Effective Green, g (s)	15.1	86.0		1.4	72.3	72.3	16.6	16.6	16.6	16.6	16.6	16.6	
Actuated g/C Ratio	0.13	0.74		0.01	0.62	0.62	0.14	0.14	0.14	0.14	0.14	0.14	
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)	230	2544		21	2143	987	239	227	191	191	227	227	
v/s Ratio Prot	c0.09	0.33		0.00	c0.45		0.00	0.00	0.03	c0.03	0.01		
v/s Ratio Perm						0.04	0.00	0.00	0.03	c0.03	0.01		
v/c Ratio	0.70	0.45		0.38	0.72	0.07	0.03	0.01	0.23	0.24	0.07	0.07	
Uniform Delay, d1	48.3	5.8		56.9	15.0	8.6	42.8	42.7	44.0	44.1	43.0	43.0	
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	9.4	0.6		11.2	2.1	0.1	0.1	0.0	0.6	0.6	0.1	0.1	
Delay (s)	57.7	6.4		68.0	17.1	8.7	42.9	42.7	44.7	44.7	43.2	43.2	
Level of Service	E	A		E	B	A	D	D	D	D	D	D	
Approach Delay (s)		12.7			16.8			42.7			43.8		
Approach LOS		B			B			D			D		
<b>Intersection Summary</b>													
HCM Average Control Delay	17.1		HCM Level of Service					B					
HCM Volume to Capacity ratio	0.64												
Actuated Cycle Length (s)	116.0					Sum of lost time (s)			12.0				
Intersection Capacity Utilization	68.2%		ICU Level of Service					C					
Analysis Period (min)	15												
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑
Volume (vph)	0	1056	94	86	977	0	128	0	87	7	46	500
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1851	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.72		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2606		1583		1851	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1112	99	91	1028	0	135	0	92	7	48	526
RTOR Reduction (vph)	0	0	65	0	0	0	0	0	81	0	0	76
Lane Group Flow (vph)	0	1112	34	91	1028	0	135	0	11	0	55	450
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		8					4
Actuated Green, G (s)		30.0	30.0	6.1	40.1		10.5		10.5		24.2	24.2
Effective Green, g (s)		30.0	30.0	6.1	40.1		10.5		10.5		24.2	24.2
Actuated g/C Ratio		0.35	0.35	0.07	0.46		0.12		0.12		0.28	0.28
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)		1188	547	124	1635		315		191		516	429
v/s Ratio Prot		c0.32		0.05	c0.29						0.03	
v/s Ratio Perm			0.02				c0.05		0.01			c0.29
v/c Ratio		0.94	0.06	0.73	0.63		0.43		0.06		0.11	1.05
Uniform Delay, d1		27.5	19.0	39.6	17.7		35.4		33.8		23.3	31.3
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		13.4	0.0	20.0	0.8		0.9		0.1		0.1	57.1
Delay (s)		40.9	19.0	59.5	18.5		36.3		33.9		23.4	88.4
Level of Service		D	B	E	B		D		C		C	F
Approach Delay (s)		39.1			21.8			35.3			82.2	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

6/3/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑↑	↑
Volume (vph)	114	84	119	668	1003	147
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1513
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1513
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	127	93	132	742	1114	163
RTOR Reduction (vph)	0	78	0	0	0	64
Lane Group Flow (vph)	127	15	132	742	1114	99
Confl. Peds. (#/hr)	30	30				30
Turn Type	Perm	Prot			Perm	
Protected Phases	4	5	2	6		
Permitted Phases	4				6	
Actuated Green, G (s)	19.3	19.3	14.0	88.7	70.7	70.7
Effective Green, g (s)	19.3	19.3	14.0	88.7	70.7	70.7
Actuated g/C Ratio	0.17	0.17	0.12	0.76	0.61	0.61
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)	294	250	214	2706	3099	922
v/s Ratio Prot	c0.07		c0.07	0.21	c0.22	
v/s Ratio Perm		0.01				0.07
v/c Ratio	0.43	0.06	0.62	0.27	0.36	0.11
Uniform Delay, d1	43.4	40.7	48.5	4.1	11.3	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	5.2	0.3	0.3	0.2
Delay (s)	44.4	40.8	53.7	4.3	11.7	9.7
Level of Service	D	D	D	A	B	A
Approach Delay (s)	42.9			11.8	11.4	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
 9: Erba Lane & Scotts Valley Drive

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	30	0	95	13	0	4	83	634	3	39	1072	13
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.97	1.00		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.96	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1739	1770		3537	1770		3533	3533	
Flt Permitted	0.78	1.00		0.75	0.95		1.00	0.95		1.00	1.00	
Satd. Flow (perm)	1461	1583		1358	1770		3537	1770		3533	3533	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	0	106	14	0	4	92	704	3	43	1191	14
RTOR Reduction (vph)	0	0	94	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	33	12	0	14	0	92	707	0	43	1204	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.1	5.1		5.1		4.0	26.1		2.6	24.7	
Effective Green, g (s)		5.1	5.1		5.1		4.0	26.1		2.6	24.7	
Actuated g/C Ratio		0.11	0.11		0.11		0.09	0.57		0.06	0.54	
Clearance Time (s)		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	
Lane Grp Cap (vph)	163	176		151	155		2016	100		1905		
v/s Ratio Prot							c0.05	0.20		0.02	c0.34	
v/s Ratio Perm	c0.02	0.01		0.01								
v/c Ratio	0.20	0.07		0.10			0.59	0.35		0.43	0.63	
Uniform Delay, d1	18.5	18.2		18.3			20.1	5.3		20.9	7.4	
Progression Factor	1.00	1.00		1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.2		0.3			6.0	0.1		3.0	1.6	
Delay (s)	19.1	18.4		18.6			26.1	5.4		23.8	9.0	
Level of Service	B	B		B			C	A		C	A	
Approach Delay (s)	18.6			18.6			7.8			9.5		
Approach LOS	B			B			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay	9.5			HCM Level of Service				A				
HCM Volume to Capacity ratio	0.56											
Actuated Cycle Length (s)	45.8			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	56.7%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 10: Civic Center Drive-Disc Drive & Scotts Valley Drive

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	32	1	53	112	2	80	47	621	35	14	994	5
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1776	1583	1770	1589	1770	3511	1770	3511	1770	3536	3536	1770
Flt Permitted	0.70	1.00	0.73	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1307	1583	1365	1589	1770	3511	1770	3511	1770	3536	3536	1770
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	1	59	124	2	89	52	690	39	16	1104	6
RTOR Reduction (vph)	0	0	48	0	73	0	6	0	0	1	0	0
Lane Group Flow (vph)	0	37	11	124	18	0	52	723	0	16	1109	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7	
Effective Green, g (s)		8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7	
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.07	0.54		0.03	0.49	
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)	234	283	244	284			130	1884		46	1730	
v/s Ratio Prot					0.01		0.03	c0.21		0.01	c0.31	
v/s Ratio Perm	0.03	0.01		c0.09								
v/c Ratio	0.16	0.04	0.51	0.06			0.40	0.38		0.35	0.64	
Uniform Delay, d1	16.1	15.7	17.2	15.8			20.5	6.3		22.2	8.8	
Progression Factor	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1	1.7	0.1			2.0	0.1		4.5	1.8	
Delay (s)	16.4	15.8	18.9	15.9			22.5	6.4		26.7	10.7	
Level of Service	B	B	B	B			C	A		C	B	
Approach Delay (s)	16.0			17.6			7.5			10.9		
Approach LOS	B			B			A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay	10.6			HCM Level of Service				B				
HCM Volume to Capacity ratio	0.55											
Actuated Cycle Length (s)	46.4			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	56.3%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖	↖	↖	↖	↖	↖
Volume (vph)	0	0	0	81	0	18	5	621	12	17	815	0
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
Lane Util. Factor				1.00		1.00		1.00		0.95		1.00
Frt				1.00		0.85		1.00		1.00		1.00
Fit Protected				0.95		1.00		0.95		1.00		1.00
Satd. Flow (prot)				1770		1583		1770		3529		1770
Fit Permitted				0.95		1.00		0.95		1.00		1.00
Satd. Flow (perm)				1770		1583		1770		3529		1770
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	90	0	20	6	690	13	19	906	0
RTOR Reduction (vph)	0	0	0	0	0	17	0	2	0	0	0	0
Lane Group Flow (vph)	0	0	0	90	0	3	6	701	0	19	906	0
Turn Type				custom		custom		Prot		Prot		
Protected Phases							5	2		1	6	
Permitted Phases				8		8				1.1	20.2	
Actuated Green, G (s)				5.6		5.6	1.1	20.2		1.1	20.2	
Effective Green, g (s)				5.6		5.6	1.1	20.2		1.1	20.2	
Actuated g/C Ratio				0.14		0.14	0.03	0.52		0.03	0.52	
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)				255		228	50	1833		50	1838	
v/s Ratio Prot							0.00	0.20		c0.01	c0.26	
v/s Ratio Perm				c0.05		0.00						
v/c Ratio				0.35		0.01	0.12	0.38		0.38	0.49	
Uniform Delay, d1				15.0		14.3	18.4	5.6		18.6	6.0	
Progression Factor				1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2				0.8		0.0	1.1	0.1		4.8	0.2	
Delay (s)				15.9		14.3	19.5	5.7		23.3	6.3	
Level of Service				B		B	B	A		C	A	
Approach Delay (s)	0.0				15.6			5.9			6.6	
Approach LOS	A				B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay				6.9			HCM Level of Service				A	
HCM Volume to Capacity ratio				0.46								
Actuated Cycle Length (s)				38.9			Sum of lost time (s)				12.0	
Intersection Capacity Utilization				33.7%			ICU Level of Service				A	
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖		↖		↖	↖	↖	↖	↖	↖	↖
Volume (vph)	0	0	0	87	0	131	0	621	47	36	642	0
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
Lane Util. Factor				1.00		1.00		0.95		1.00		0.95
Frt				1.00		0.85		0.99		1.00		1.00
Fit Protected				0.95		1.00		1.00		0.95		1.00
Satd. Flow (prot)				1770		1583		3502		1770		3539
Fit Permitted				0.76		1.00		1.00		0.95		1.00
Satd. Flow (perm)				1410		1583		3502		1770		3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	97	0	146	0	690	52	40	713	0
RTOR Reduction (vph)	0	0	0	0	0	116	0	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	97	0	30	0	732	0	40	713	0
Turn Type		Perm		custom		custom		Prot		Prot		
Protected Phases		4					5	2		1	6	
Permitted Phases		4		8		8				16.3	2.4	22.7
Actuated Green, G (s)				8.1		8.1				16.3	2.4	22.7
Effective Green, g (s)				8.1		8.1				16.3	2.4	22.7
Actuated g/C Ratio				0.21		0.21				0.42	0.06	0.59
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)				294		330		1471		109	2070	
v/s Ratio Prot								c0.21		0.02	c0.20	
v/s Ratio Perm				c0.07		0.02						
v/c Ratio				0.33		0.09		0.50		0.37	0.34	
Uniform Delay, d1				13.0		12.4		8.2		17.5	4.2	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.7		0.1		0.3		2.1	0.1	
Delay (s)				13.7		12.5		8.5		19.6	4.3	
Level of Service				B		B		A		B	A	
Approach Delay (s)	0.0				13.0			8.5			5.1	
Approach LOS	A				B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay				7.7			HCM Level of Service				A	
HCM Volume to Capacity ratio				0.45								
Actuated Cycle Length (s)				38.8			Sum of lost time (s)				12.0	
Intersection Capacity Utilization				39.3%			ICU Level of Service				A	
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	108	162	783	79	185	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3473		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3473		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	120	180	870	88	206	646
RTOR Reduction (vph)	0	22	15	0	0	0
Lane Group Flow (vph)	120	158	943	0	206	646
Confl. Peds. (#/hr)			25			
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	7.4	16.4	16.6	9.0	29.6	
Effective Green, g (s)	7.4	16.4	16.6	9.0	29.6	
Actuated g/C Ratio	0.16	0.36	0.37	0.20	0.66	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	291	718	1281	354	2328	
v/s Ratio Prot	c0.07	0.04	c0.27	c0.12	0.18	
v/s Ratio Perm		0.06				
v/c Ratio	0.41	0.22	0.74	0.58	0.28	
Uniform Delay, d1	16.9	9.9	12.3	16.3	3.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.2	2.2	2.4	0.1	
Delay (s)	17.8	10.0	14.5	18.7	3.3	
Level of Service	B	B	B	B	A	
Approach Delay (s)	13.1		14.5		7.0	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	29	33	15	271	4	357	8	545	516	216	440	7
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1821	1448	1681	1687	1583	1770	3539	1479	1770	3528		
Fit Permitted	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1821	1448	1681	1687	1583	1770	3539	1479	1770	3528		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	37	17	301	4	397	9	606	573	240	489	8
RTOR Reduction (vph)	0	0	15	0	0	252	0	0	419	0	1	0
Lane Group Flow (vph)	0	69	2	154	151	145	9	606	154	240	496	0
Confl. Peds. (#/hr)			25				25					25
Turn Type	Split	Perm	Split	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		6.0	6.0	10.9	10.9	21.9	1.6	16.1	16.1	11.0	25.5	
Effective Green, g (s)		6.0	6.0	10.9	10.9	21.9	1.6	16.1	16.1	11.0	25.5	
Actuated g/C Ratio	0.10	0.10	0.18	0.18	0.36	0.03	0.27	0.27	0.18	0.42		
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	5.0	5.0	3.0	5.0		
Lane Grp Cap (vph)	182	145	305	306	683	47	950	397	325	1499		
v/s Ratio Prot	c0.04		c0.09	0.09	0.04	0.01	c0.17		c0.14	0.14		
v/s Ratio Perm		0.00			0.05			0.10				
v/c Ratio	0.38	0.01	0.50	0.49	0.21	0.19	0.64	0.39	0.74	0.33		
Uniform Delay, d1	25.3	24.3	22.1	22.1	13.1	28.6	19.4	17.9	23.1	11.5		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.02	0.63		
Incremental Delay, d2	1.3	0.0	1.3	1.3	0.2	2.0	3.3	2.8	7.8	0.5		
Delay (s)	26.6	24.4	23.4	23.3	13.3	30.6	22.6	20.8	31.4	7.9		
Level of Service	C	C	C	C	B	C	C	C	C	A		
Approach Delay (s)	26.1			17.7			21.8			15.5		
Approach LOS	C			B			C			B		

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	10	99	192	256	54	49	337	230	280	60	167	11
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	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frbp, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.94	1.00	0.99	1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.96	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1854	1583	1681	1638	3433	3539	1487	1770	3489	1770	1487	1819
Fit Permitted	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1854	1583	1681	1638	3433	3539	1487	1770	3489	1770	1487	1819
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	110	213	284	60	54	374	256	311	67	186	12
RTOR Reduction (vph)	0	0	176	0	23	0	0	0	218	0	8	0
Lane Group Flow (vph)	0	121	37	202	173	0	374	256	93	67	190	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot			
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)	10.3	10.3	11.0	11.0	11.5	18.0	18.0	4.7	11.2			
Effective Green, g (s)	10.3	10.3	11.0	11.0	11.5	18.0	18.0	4.7	11.2			
Actuated g/C Ratio	0.17	0.17	0.18	0.18	0.19	0.30	0.30	0.08	0.19			
Clearance Time (s)	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	5.0	3.0	3.0	3.0	5.0			
Lane Grp Cap (vph)	318	272	308	300	658	1062	446	139	651			
v/s Ratio Prot	c0.07		c0.12	0.11	c0.11	0.07		c0.04	c0.05			
v/s Ratio Perm		0.02				0.06						
v/c Ratio	0.38	0.13	0.66	0.58	0.57	0.24	0.21	0.48	0.29			
Uniform Delay, d1	22.0	21.1	22.7	22.4	22.0	15.8	15.7	26.5	21.0			
Progression Factor	1.00	1.00	1.00	1.00	0.73	0.58	0.92	1.00	1.00			
Incremental Delay, d2	0.8	0.2	5.0	2.7	1.5	0.4	0.9	2.6	1.1			
Delay (s)	22.8	21.3	27.7	25.1	17.6	9.6	15.3	29.1	22.1			
Level of Service	C	C	C	C	B	A	B	C	C			
Approach Delay (s)	21.8			26.4			14.7		23.9			
Approach LOS	C			C			B		C			C

Intersection Summary

HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

6/3/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	21	138	265	203	11	2	342	62	331	10	92	17
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	0.93	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.85	0.98	1.00	0.85	0.98
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1823	1770	1863	1474	1819	1770	1474	1819
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1823	1770	1863	1474	1819	1770	1474	1819
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	153	294	226	12	2	380	69	368	11	102	19
RTOR Reduction (vph)	0	0	170	0	1	0	0	0	277	0	10	0
Lane Group Flow (vph)	23	153	124	226	13	0	380	69	91	0	122	0
Confl. Peds. (#/hr)							25					
Turn Type	Prot		pm+ov	Prot		Split		Perm	Split			
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2					3				
Actuated Green, G (s)	1.4	9.8	23.9	9.4	17.8		14.1	14.1	14.1			7.5
Effective Green, g (s)	1.4	9.8	23.9	9.4	17.8		14.1	14.1	14.1			7.5
Actuated g/C Ratio	0.02	0.17	0.42	0.17	0.31		0.25	0.25	0.25			0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5		3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	44	321	778	293	571		439	462	366			240
v/s Ratio Prot	0.01	c0.08	0.04	c0.13	0.01		c0.21	0.04				c0.07
v/s Ratio Perm			0.04					0.06				
v/c Ratio	0.52	0.48	0.16	0.77	0.02		0.87	0.15	0.25			0.51
Uniform Delay, d1	27.4	21.2	10.2	22.7	13.5		20.4	16.7	17.1			22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			1.00
Incremental Delay, d2	10.8	1.3	0.1	11.9	0.0		16.2	0.2	0.4			1.7
Delay (s)	38.1	22.5	10.3	34.5	13.5		36.6	16.8	17.5			24.6
Level of Service	D	C	B	C	B		D	B	B			C
Approach Delay (s)	15.6			33.3			26.3		24.6			
Approach LOS	B			C			C		C			C

Intersection Summary

HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis  
17: Mt. Hermon Road & K-Mart Access

6/3/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	54	638	56	35	1416	124	155	22	32	110	17	20
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Flt	1.00	0.99	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.96	1.00	0.96	1.00	0.96	1.00	1.00
Satd. Flow (prot)	1770	3497	1770	3539	1583	1784	1583	1786	1583	1786	1583	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.66	1.00	0.57	1.00	0.57	1.00	1.00
Satd. Flow (perm)	1770	3497	1770	3539	1583	1222	1583	1060	1583	1060	1583	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	709	62	39	1573	138	172	24	36	122	19	22
RTOR Reduction (vph)	0	9	0	0	0	69	0	0	27	0	0	16
Lane Group Flow (vph)	60	762	0	39	1573	69	0	196	9	0	141	6
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	2.8	31.8		2.2	31.2	31.2	16.2	16.2	16.2	16.2		16.2
Effective Green, g (s)	2.8	31.8		2.2	31.2	31.2	16.2	16.2	16.2	16.2		16.2
Actuated g/C Ratio	0.05	0.51		0.04	0.50	0.50	0.26	0.26	0.26	0.26		0.26
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)	80	1788		63	1775	794	318	412	276	412		412
v/s Ratio Prot	c0.03	0.22		0.02	c0.44							
v/s Ratio Perm					0.04		c0.16	0.01	0.13	0.00		0.00
v/c Ratio	0.75	0.43		0.62	0.89	0.09	0.62	0.02	0.51	0.01		0.01
Uniform Delay, d1	29.4	9.5		29.6	13.9	8.1	20.3	17.1	19.6	17.1		17.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	32.0	0.2		16.7	5.7	0.0	8.7	0.1	6.6	0.1		0.1
Delay (s)	61.4	9.7		46.3	19.6	8.1	28.9	17.2	26.2	17.1		17.1
Level of Service	E	A		D	B	A	C	B	C	B		B
Approach Delay (s)	13.4			19.3			27.1		25.0			
Approach LOS	B			B			C		C			

Intersection Summary

HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

PM Existing

Tue Jun 3, 2008 11:42:35

Page 2-1

PM Peak Hour - Existing Conditions  
Town Center Specific Plan  
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

*****												
Intersection #18 Mt Hermon Road/Washington Mutual Access												
*****												
Average Delay (sec/veh):	7.2	Worst Case Level Of Service: F [ 87.3 ]										
*****												
Street Name:	Washington Mutual Access			Mt Hermon Road								
Approach:	North Bound		South Bound		East Bound		West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled					
Rights:	Include		Include		Include		Include					
Lanes:	0	0	1	1	0	1	0	1	0	1	0	
*****												
Volume Module:												
Base Vol:	13	0	184	0	0	0	0	890	45	294	1567	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	0	184	0	0	0	0	890	45	294	1567	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	14	0	204	0	0	0	0	989	50	327	1741	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	0	204	0	0	0	0	989	50	327	1741	0
*****												
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	7.5	6.5	6.9	xxxx	xxxx	xxxx	4.1	xxxx	xxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	xxxx	xxxx	xxxx	2.2	xxxx	xxxx
*****												
Capacity Module:												
Cnflct Vol:	2538	3408	519	2889	3433	871	xxxx	xxxx	xxxx	1039	xxxx	xxxx
Potent Cap.:	23	7	507	7	7	299	xxxx	xxxx	xxxx	677	xxxx	xxxx
Move Cap.:	14	4	507	3	4	299	xxxx	xxxx	xxxx	677	xxxx	xxxx
Volume/Cap:	1.01	0.00	0.40	0.00	0.00	0.00	xxxx	xxxx	xxxx	0.48	xxxx	xxxx
*****												
Level of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	2.6	xxxx	xxxx
Control Del:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	15.2	xxxx	xxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	234	xxxx	xxxx	xxxx	0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	xxxx	8.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	xxxx	87.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	87.3		xxxxxx		xxxxxx		xxxxxx		xxxxxx		xxxxxx	
ApproachLOS:	F		*		*		*		*		*	
*****												
Note: Queue reported is the number of cars per lane.												
*****												

PM Peak Hour - Existing Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.205
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.1
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 44 0 108 0 0 0 0 31 97 107 25 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 44 0 108 0 0 0 0 31 97 107 25 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume: 49 0 120 0 0 0 0 34 108 119 28 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 49 0 120 0 0 0 0 34 108 119 28 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 49 0 120 0 0 0 0 34 108 119 28 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.29 0.00 0.71 0.00 1.00 0.00 0.00 0.24 0.76 0.80 0.19 0.01
Final Sat.: 239 0 586 0 715 0 0 211 661 615 144 6
Capacity Analysis Module:
Vol/Sat: 0.20 xxxx 0.20 xxxx 0.00 xxxx xxxx 0.16 0.16 0.19 0.19 0.19
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
Delay/Veh: 8.1 0.0 8.1 0.0 0.0 0.0 0.0 7.7 7.7 8.6 8.6 8.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.1 0.0 8.1 0.0 0.0 0.0 0.0 7.7 7.7 8.6 8.6 8.6
LOS by Move: A \* A \* \* \* \* A A A A A
ApproachDel: 8.1 xxxxxx 7.7 8.6
Delay Adj: 1.00 xxxxxx 1.00
ApprAdjDel: 8.1 xxxxxx 7.7 8.6
LOS by Appr: A \* A A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.2 0.2 0.2 0.2 0.2 0.2
Note: Queue reported is the number of cars per lane.

PM Peak Hour - Existing Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 6.8 Worst Case Level Of Service: B[ 12.9]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1! 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 124 40 3 0 41 23 29 3 139 2 6 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 124 40 3 0 41 23 29 3 139 2 6 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume: 138 44 3 0 46 26 32 3 154 2 7 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 138 44 3 0 46 26 32 3 154 2 7 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxxx xxxxx 7.1 6.5 6.2 7.1 6.5 xxxxx
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 xxxxx
Capacity Module:
Conflict Vol: 71 xxxx xxxxx xxxxx xxxxx xxxxx 383 382 58 459 393 xxxxx
Potent Cap.: 1542 xxxx xxxxx xxxxx xxxxx xxxxx 579 554 1013 516 546 xxxxx
Move Cap.: 1542 xxxx xxxxx xxxxx xxxxx xxxxx 530 501 1013 403 494 xxxxx
Volume/Cap: 0.09 xxxxx xxxxx xxxxx xxxxx xxxxx 0.06 0.01 0.15 0.01 0.01 xxxxx
Level of Service Module:
2Way95thQ: 0.3 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 7.6 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxxx xxxxx xxxxx 864 xxxxx 467 xxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.8 xxxxx 0.1 xxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.3 xxxxx 12.9 xxxx xxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxxx xxxxxxx 10.3 12.9
ApproachLOS: \* \* B B
Note: Queue reported is the number of cars per lane.

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (vph)	409	844	84	116	886	215	111	64	104	374	55	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3375		1770	3438	1504	1681	1745	1504	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3375		1770	3438	1504	1681	1745	1504	3433	1863	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	431	888	88	122	933	226	117	67	109	394	58	256
RTOR Reduction (vph)	0	7	0	0	166	0	0	92	0	0	0	0
Lane Group Flow (vph)	431	969	0	122	933	60	90	94	17	394	58	256
Conf. Ped. (#/hr)	30			30			30			30		
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	18.5	32.3		10.2	24.0	24.0	14.4	14.4	14.4	16.6	16.6	90.0
Effective Green, g (s)	18.5	32.3		10.2	24.0	24.0	14.4	14.4	14.4	16.6	16.6	90.0
Actuated g/C Ratio	0.21	0.36		0.11	0.27	0.27	0.16	0.16	0.16	0.18	0.18	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	706	1211		201	917	401	269	279	241	633	344	1550
v/s Ratio Prot	c0.13	c0.29		0.07	c0.27		0.05	c0.05		c0.11	0.03	
v/s Ratio Perm						0.04			0.01			0.17
v/c Ratio	0.61	0.80		0.61	1.02	0.15	0.33	0.34	0.07	0.62	0.17	0.17
Uniform Delay, d1	32.5	25.9		38.0	33.0	25.2	33.5	33.6	32.1	33.8	30.9	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
Incremental Delay, d2	1.6	5.6		5.1	34.2	0.8	0.7	0.7	0.1	1.9	0.2	0.2
Delay (s)	34.0	31.5		43.1	67.2	26.0	34.3	34.3	32.3	35.7	31.1	0.2
Level of Service	C	C		D	E	C	C	C	C	D	C	A
Approach Delay (s)	32.3		57.6			33.5		22.5				
Approach LOS	C		E			C		C				
<b>Intersection Summary</b>												
HCM Average Control Delay	39.3			HCM Level of Service			D					
HCM Volume to Capacity ratio	0.74											
Actuated Cycle Length (s)	90.0			Sum of lost time (s)			21.0					
Intersection Capacity Utilization	66.1%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations												
Volume (vph)	0	1009	119	33	680	0	117	0	67	10	20	349
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Fit Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.98	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1831	1538
Fit Permitted		1.00	1.00	0.95	1.00		0.74		1.00		0.98	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2661		1583		1831	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1062	125	35	716	0	123	0	71	11	21	367
RTOR Reduction (vph)	0	0	71	0	0	0	0	0	63	0	0	217
Lane Group Flow (vph)	0	1062	54	35	716	0	123	0	8	0	32	150
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm		Prot			custom		custom		Split	Perm
Protected Phases		2		1	6						4	4
Permitted Phases			2				8		8			4
Actuated Green, G (s)		29.0	29.0	2.4	35.4		7.6		7.6		11.8	11.8
Effective Green, g (s)		29.0	29.0	2.4	35.4		7.6		7.6		11.8	11.8
Actuated g/C Ratio		0.43	0.43	0.04	0.53		0.11		0.11		0.18	0.18
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)		1493	687	64	1875		303		180		323	272
v/s Ratio Prot		c0.31		0.02	c0.20						0.02	
v/s Ratio Perm			0.03				c0.05		0.01			c0.10
v/c Ratio		0.71	0.08	0.55	0.38		0.41		0.04		0.10	0.55
Uniform Delay, d1		15.5	11.1	31.7	9.3		27.5		26.4		23.0	25.1
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		1.6	0.0	9.2	0.1		0.9		0.1		0.1	2.4
Delay (s)		17.1	11.1	40.9	9.4		28.4		26.5		23.2	27.5
Level of Service		B	B	D	A		C		C		C	C
Approach Delay (s)		16.5			10.9			27.7			27.1	
Approach LOS		B			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		17.3					HCM Level of Service			B		
HCM Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		66.8					Sum of lost time (s)			16.0		
Intersection Capacity Utilization		54.6%					ICU Level of Service			A		
Analysis Period (min)		15										

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕	↕	↕↕	↕
Volume (vph)	15	1091	411	57	132	10
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1148	433	60	139	11
RTOR Reduction (vph)	0	0	0	35	0	8
Lane Group Flow (vph)	16	1148	433	25	139	3
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.2	22.3	17.1	17.1	11.2	11.2
Effective Green, g (s)	1.2	22.3	17.1	17.1	11.2	11.2
Actuated g/C Ratio	0.03	0.54	0.41	0.41	0.27	0.27
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)	51	1847	746	652	478	427
v/s Ratio Prot	0.01	c0.33	0.24		c0.08	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.31	0.62	0.58	0.04	0.29	0.01
Uniform Delay, d1	19.7	6.7	9.4	7.3	12.0	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.7	1.2	0.0	1.5	0.0
Delay (s)	23.3	7.3	10.6	7.3	13.5	11.1
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.5	10.2		13.4	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↕		↕	↕↕				↕	↕↕	↕	↕
Volume (vph)	3	1144	27	106	445	28	16	6	168	95	6	3
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3429		1770	3414			1796	1583		1779	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81	1.00		0.72	1.00
Satd. Flow (perm)	1770	3429		1770	3414			1506	1583		1344	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	1204	28	112	468	29	17	6	177	100	6	3
RTOR Reduction (vph)	0	3	0	0	7	0	0	0	139	0	0	2
Lane Group Flow (vph)	3	1229	0	112	490	0	0	23	38	0	106	1
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4	8		8
Actuated Green, G (s)	1.3	21.1		5.9	25.7			10.5	10.5		10.5	10.5
Effective Green, g (s)	1.3	21.1		5.9	25.7			10.5	10.5		10.5	10.5
Actuated g/C Ratio	0.03	0.43		0.12	0.52			0.21	0.21		0.21	0.21
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)	46	1462		211	1773			319	336		285	336
v/s Ratio Prot	0.00	c0.36		c0.06	0.14						c0.08	0.00
v/s Ratio Perm							0.02	0.02				0.00
v/c Ratio	0.07	0.84		0.53	0.28			0.07	0.11		0.37	0.00
Uniform Delay, d1	23.5	12.7		20.5	6.7			15.6	15.7		16.7	15.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	4.5		2.6	0.1			0.1	0.1		0.8	0.0
Delay (s)	24.1	17.2		23.1	6.8			15.7	15.9		17.5	15.4
Level of Service	C	B		C	A			B	B		B	B
Approach Delay (s)		17.3			9.8			15.9			17.4	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	49.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↗	↕	↕	↗	↔	↕	↗	↕	↕	↗
Volume (vph)	129	1327	14	34	627	132	7	6	16	106	7	77
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1814	1583		1779	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.88	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		1645	1583		1358	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	1397	15	36	660	139	7	6	17	112	7	81
RTOR Reduction (vph)	0	0	0	0	0	53	0	0	14	0	0	68
Lane Group Flow (vph)	136	1412	0	36	660	86	0	13	3	0	119	13
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8		8		4	4
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.2	80.3		5.4	71.5	71.5	18.3	18.3		18.3	18.3	18.3
Effective Green, g (s)	14.2	80.3		5.4	71.5	71.5	18.3	18.3		18.3	18.3	18.3
Actuated g/C Ratio	0.12	0.69		0.05	0.62	0.62	0.16	0.16		0.16	0.16	0.16
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)	217	2377		82	2119	976	260	250		214	250	
v/s Ratio Prot	c0.08	c0.41		0.02	0.19							
v/s Ratio Perm					0.05		0.01	0.00		c0.09	0.01	
v/c Ratio	0.63	0.59		0.44	0.31	0.09	0.05	0.01		0.56	0.05	
Uniform Delay, d1	48.4	9.3		53.8	10.6	9.0	41.5	41.2		45.1	41.5	
Progression Factor	1.00	1.00		1.10	0.64	0.31	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.6	1.1		3.6	0.4	0.2	0.1	0.0		3.1	0.1	
Delay (s)	53.9	10.4		62.8	7.1	2.9	41.6	41.2		48.2	41.6	
Level of Service	D	B		E	A	A	D	D		D	D	
Approach Delay (s)	14.3			8.8			41.4			45.5		
Approach LOS	B			A			D			D		

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↗	↕	↕	↗	↔	↕	↗	↕	↕	↗
Volume (vph)	32	1428	2	46	820	109	4	1	17	67	2	3
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3438		1770	3438	1583		1791	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.86	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3438	1583		1603	1583		1358	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1503	2	48	863	115	4	1	18	71	2	3
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	16	0	0	3
Lane Group Flow (vph)	34	1505	0	48	863	84	0	5	2	0	73	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4		4		4	4
Permitted Phases					6	4		4	4		4	4
Actuated Green, G (s)	5.3	82.6		7.4	84.7	84.7	14.0	14.0		14.0	14.0	14.0
Effective Green, g (s)	5.3	82.6		7.4	84.7	84.7	14.0	14.0		14.0	14.0	14.0
Actuated g/C Ratio	0.05	0.71		0.06	0.73	0.73	0.12	0.12		0.12	0.12	0.12
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)	81	2448		113	2510	1156	193	191		164	191	
v/s Ratio Prot	0.02	c0.44		c0.03	0.25							
v/s Ratio Perm					0.05		0.00	0.00		c0.05	0.00	
v/c Ratio	0.42	0.61		0.42	0.34	0.07	0.03	0.01		0.45	0.00	
Uniform Delay, d1	53.9	8.6		52.3	5.6	4.5	45.0	44.9		47.4	44.9	
Progression Factor	1.33	0.77		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	1.0		2.6	0.4	0.1	0.1	0.0		1.9	0.0	
Delay (s)	74.7	7.5		54.8	6.0	4.6	45.0	44.9		49.3	44.9	
Level of Service	E	A		D	A	A	D	D		D	D	
Approach Delay (s)	9.0			8.1			45.0			49.1		
Approach LOS	A			A			D			D		

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	6	36	↑
Volume (vph)	0	1595	105	120	1073	0	258	0	181	6	36	195
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1850	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.73		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2634		1583		1850	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1644	108	124	1106	0	266	0	187	6	37	201
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	166	0	0	96
Lane Group Flow (vph)	0	1644	58	124	1106	0	266	0	21	0	43	105
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases			2				8		8			4
Actuated Green, G (s)		49.5	49.5	10.2	63.7		11.0		11.0		10.6	10.6
Effective Green, g (s)		49.5	49.5	10.2	63.7		11.0		11.0		10.6	10.6
Actuated g/C Ratio		0.51	0.51	0.10	0.65		0.11		0.11		0.11	0.11
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)		1749	805	186	2317		298		179		202	168
v/s Ratio Prot		c0.48		c0.07	0.31						0.02	
v/s Ratio Perm			0.04				c0.10		0.01			c0.07
v/c Ratio		0.94	0.07	0.67	0.48		0.89		0.12		0.21	0.62
Uniform Delay, d1		22.5	12.2	41.9	8.4		42.6		38.8		39.5	41.4
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		10.3	0.0	8.7	0.2		26.7		0.3		0.5	7.0
Delay (s)		32.8	12.2	50.6	8.6		69.2		39.1		40.1	48.5
Level of Service		C	B	D	A		E		D		D	D
Approach Delay (s)		31.6			12.8		56.8				47.0	
Approach LOS		C			B		E				D	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	97.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑	↑	↑↑	↑↑	↑
Volume (vph)	195	189	153	1058	586	132
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.95
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1511
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1511
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	205	199	161	1114	617	139
RTOR Reduction (vph)	0	163	0	0	0	58
Lane Group Flow (vph)	205	36	161	1114	617	81
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot			Perm
Protected Phases		4	5	2	6	
Permitted Phases			4			6
Actuated Green, G (s)	20.9	20.9	15.9	87.1	67.2	67.2
Effective Green, g (s)	20.9	20.9	15.9	87.1	67.2	67.2
Actuated g/C Ratio	0.18	0.18	0.14	0.75	0.58	0.58
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)	319	270	243	2657	2946	875
v/s Ratio Prot	c0.12		c0.09	c0.31	0.12	
v/s Ratio Perm		0.02				0.05
v/c Ratio	0.64	0.13	0.66	0.42	0.21	0.09
Uniform Delay, d1	44.1	39.9	47.5	5.3	11.7	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.2	6.6	0.5	0.2	0.2
Delay (s)	48.5	40.2	54.1	5.7	11.8	11.1
Level of Service	D	D	D	A	B	B
Approach Delay (s)	44.4			11.9	11.7	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (vph)	6	0	10	16	0	37	100	1261	13	5	754	15
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.91	1.00		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.99	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1662	1770		3534	3534		1770	3529	
Flt Permitted	0.75	1.00		0.90	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1406	1583		1511	1770		3534	3529		1770	3529	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	0	11	17	0	39	105	1327	14	5	794	16
RTOR Reduction (vph)	0	0	10	0	35	0	1	0	0	2	0	0
Lane Group Flow (vph)	0	6	1	0	21	0	105	1340	0	5	808	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.3	5.3		5.3		4.2	33.9		1.2	30.9	
Effective Green, g (s)		5.3	5.3		5.3		4.2	33.9		1.2	30.9	
Actuated g/C Ratio		0.10	0.10		0.10		0.08	0.65		0.02	0.59	
Clearance Time (s)		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	
Lane Grp Cap (vph)		142	160		153		142	2286		41	2081	
v/s Ratio Prot							c0.06	c0.38		0.00	0.23	
v/s Ratio Perm	0.00	0.00			c0.01							
v/c Ratio	0.04	0.01			0.14		0.74	0.59		0.12	0.39	
Uniform Delay, d1	21.3	21.2			21.5		23.6	5.3		25.1	5.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0			0.4		18.1	0.4		1.3	0.5	
Delay (s)	21.4	21.2			21.9		41.7	5.6		26.4	6.3	
Level of Service	C	C			C		D	A		C	A	
Approach Delay (s)	21.3				21.9			8.3			6.4	
Approach LOS	C				C			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		8.0			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		52.4			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		60.9%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (vph)	16	2	45	17	1	11	61	1055	133	97	829	30
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	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85	1.00	0.86	1.00		1.00	0.98		1.00	0.99	
Flt Protected	0.96	1.00	0.95	1.00	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1783	1583	1770	1605	1770		3480	3480		1770	3520	
Flt Permitted	0.74	1.00	0.77	1.00	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1377	1583	1433	1605	1770		3480	3520		1770	3520	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	2	47	18	1	12	64	1111	140	102	873	32
RTOR Reduction (vph)	0	0	42	0	11	0	14	0	0	4	0	0
Lane Group Flow (vph)	0	19	5	18	2	0	64	1237	0	102	901	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.2	5.2	5.2	5.2		4.2	24.7		4.2	24.7	
Effective Green, g (s)		5.2	5.2	5.2	5.2		4.2	24.7		4.2	24.7	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.09	0.54		0.09	0.54	
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)		155	179	162	181		161	1865		161	1886	
v/s Ratio Prot					0.00		0.04	c0.36		0.06	c0.26	
v/s Ratio Perm	c0.01	0.00	0.01									
v/c Ratio	0.12	0.03	0.11	0.01			0.40	0.66		0.63	0.48	
Uniform Delay, d1	18.4	18.2	18.4	18.2			19.8	7.7		20.2	6.7	
Progression Factor	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.1	0.3	0.0			1.6	0.9		7.9	0.9	
Delay (s)	18.8	18.3	18.7	18.2			21.4	8.6		28.1	7.5	
Level of Service	B	B	B	B			C	A		C	A	
Approach Delay (s)	18.4				18.5			9.2			9.6	
Approach LOS	B				B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		9.8			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		46.1			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		57.6%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔	↔	↔	↔	↔
Volume (vph)	3	0	2	28	0	5	3	913	86	40	846	4
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	
Lane Util. Factor	1.00		1.00		1.00		1.00		0.95		1.00	
Frt	0.95		1.00		0.85		1.00		0.99		1.00	
Flt Protected	0.97		0.95		1.00		0.95		1.00		0.95	
Satd. Flow (prot)	1711		1770		1583		1770		3493		1770	
Flt Permitted	0.97		1.00		1.00		0.95		1.00		0.95	
Satd. Flow (perm)	1711		1863		1583		1770		3493		1770	
Peak-hour factor, PHF	0.95		0.95		0.95		0.95		0.95		0.95	
Adj. Flow (vph)	3		2	29	0	5	3	961	91	42	891	4
RTOR Reduction (vph)	0		2	0	0	5	0	8	0	0	0	0
Lane Group Flow (vph)	0	3	0	29	0	0	3	1044	0	42	895	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8			8					
Actuated Green, G (s)	1.6			1.6			1.6	1.1	24.6		2.9	26.4
Effective Green, g (s)	1.6			1.6			1.6	1.1	24.6		2.9	26.4
Actuated g/C Ratio	0.04			0.04			0.04	0.03	0.60		0.07	0.64
Clearance Time (s)	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
Lane Grp Cap (vph)	67			73			62	47	2091		125	2272
v/s Ratio Prot							0.00	c0.30		c0.02	0.25	
v/s Ratio Perm	0.00			c0.02			0.00					0.39
v/c Ratio	0.05			0.40			0.00	0.06	0.50		0.34	0.39
Uniform Delay, d1	19.0			19.3			19.0	19.5	4.7		18.2	3.5
Progression Factor	1.00			1.00			1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3			3.5			0.0	0.6	0.2		1.6	0.1
Delay (s)	19.3			22.8			19.0	20.1	4.9		19.8	3.6
Level of Service	B			C			B	C	A		B	A
Approach Delay (s)	19.3				22.2				5.0			4.4
Approach LOS	B				C				A			A
<b>Intersection Summary</b>												
HCM Average Control Delay				5.0			HCM Level of Service					A
HCM Volume to Capacity ratio				0.47								
Actuated Cycle Length (s)				41.1			Sum of lost time (s)					12.0
Intersection Capacity Utilization				49.6%			ICU Level of Service					A
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔	↔	↔	↔	↔
Volume (vph)	28	0	19	46	0	40	11	909	108	72	800	16
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	
Lane Util. Factor	1.00		1.00		1.00		1.00		0.95		1.00	
Frt	0.94		1.00		0.85		1.00		0.98		1.00	
Flt Protected	0.97		0.95		1.00		0.95		1.00		0.95	
Satd. Flow (prot)	1710		1770		1583		1770		3483		1770	3529
Flt Permitted	0.97		0.74		1.00		0.95		1.00		0.95	1.00
Satd. Flow (perm)	1710		1380		1583		1770		3483		1770	3529
Peak-hour factor, PHF	0.95		0.95		0.95		0.95		0.95		0.95	0.95
Adj. Flow (vph)	29		0	20	48		0	42	12	957	114	76
RTOR Reduction (vph)	0		18	0	0		0	37	0	14	0	0
Lane Group Flow (vph)	0	31	0	48	0	5	12	1057	0	76	857	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8			8					
Actuated Green, G (s)	5.4			5.4			5.4	1.4	22.6		4.1	25.3
Effective Green, g (s)	5.4			5.4			5.4	1.4	22.6		4.1	25.3
Actuated g/C Ratio	0.12			0.12			0.12	0.03	0.51		0.09	0.57
Clearance Time (s)	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
Lane Grp Cap (vph)	209			169			194	56	1785		165	2025
v/s Ratio Prot							0.01	c0.30		0.04	c0.24	
v/s Ratio Perm	0.02			c0.03			0.00					0.42
v/c Ratio	0.15			0.28			0.03	0.21	0.59		0.46	0.42
Uniform Delay, d1	17.3			17.6			17.0	20.8	7.5		19.0	5.3
Progression Factor	1.00			1.00			1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3			0.9			0.1	1.9	0.5		2.0	0.1
Delay (s)	17.6			18.5			17.1	22.7	8.1		21.0	5.4
Level of Service	B			B			B	C	A		C	A
Approach Delay (s)	17.6				17.9				8.2			6.7
Approach LOS	B				B				A			A
<b>Intersection Summary</b>												
HCM Average Control Delay				8.2			HCM Level of Service					A
HCM Volume to Capacity ratio				0.54								
Actuated Cycle Length (s)				44.1			Sum of lost time (s)					12.0
Intersection Capacity Utilization				55.2%			ICU Level of Service					B
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	31	48	806	57	256	913
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3492		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3492		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	51	848	60	269	961
RTOR Reduction (vph)	0	27	10	0	0	0
Lane Group Flow (vph)	33	24	898	0	269	961
Confl. Peds. (#/hr)				25		
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	1.4	10.6	14.5	9.2	27.7	
Effective Green, g (s)	1.4	10.6	14.5	9.2	27.7	
Actuated g/C Ratio	0.04	0.29	0.39	0.25	0.75	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	67	623	1365	439	2642	
v/s Ratio Prot	c0.02	0.01	c0.26	c0.15	0.27	
v/s Ratio Perm		0.01				
v/c Ratio	0.49	0.04	0.66	0.61	0.36	
Uniform Delay, d1	17.5	9.6	9.3	12.4	1.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.6	0.0	1.2	2.5	0.1	
Delay (s)	23.1	9.6	10.4	14.9	1.7	
Level of Service	C	A	B	B	A	
Approach Delay (s)	14.9		10.4		4.6	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	37.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	4	10	4	467	39	492	17	506	297	261	687	18
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.77	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1838	1215	1681	1698	1583	1770	3539	1471	1770	3521		
Fit Permitted	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1838	1215	1681	1698	1583	1770	3539	1471	1770	3521		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	11	4	492	41	518	18	533	313	275	723	19
RTOR Reduction (vph)	0	0	4	0	0	280	0	238	0	2	0	0
Lane Group Flow (vph)	0	15	0	266	267	238	18	533	75	275	740	0
Confl. Peds. (#/hr)				25				25				25
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		2.0	2.0	14.0	14.0	27.6	1.6	14.4	14.4	13.6	26.4	
Effective Green, g (s)		2.0	2.0	14.0	14.0	27.6	1.6	14.4	14.4	13.6	26.4	
Actuated g/C Ratio		0.03	0.03	0.23	0.23	0.46	0.03	0.24	0.24	0.23	0.44	
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	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		61	41	392	396	834	47	849	353	401	1549	
v/s Ratio Prot		c0.01		c0.16	0.16	0.06	0.01	c0.15		c0.16	0.21	
v/s Ratio Perm			0.00			0.09			0.05			
v/c Ratio		0.25	0.00	0.68	0.67	0.29	0.38	0.63	0.21	0.69	0.48	
Uniform Delay, d1		28.3	28.0	21.0	20.9	10.1	28.7	20.4	18.3	21.2	11.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.22	0.72	
Incremental Delay, d2		2.1	0.0	4.6	4.5	0.2	5.1	3.5	1.4	4.3	0.9	
Delay (s)		30.4	28.1	25.6	25.4	10.3	33.8	23.9	19.6	30.3	9.6	
Level of Service		C	C	C	C	B	C	C	B	C	A	
Approach Delay (s)		29.9			18.0			22.6			15.2	
Approach LOS		C			B			C			B	


Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↖	↗	↖	↗
Volume (vph)	19	192	309	277	17	17	440	296	219	97	313	24
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	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frbp. ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.94	1.00	0.99	1.00	0.99	1.00
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	1.00	0.85	1.00	0.98	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.96	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1854	1583	1681	1665	3433	3539	1481	1770	3482	1770	1863	1450
Fit Permitted	1.00	1.00	0.95	0.96	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1854	1583	1681	1665	3433	3539	1481	1770	3482	1770	1863	1450
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	202	325	292	18	18	463	312	231	102	329	25
RTOR Reduction (vph)	0	0	267	0	7	0	0	168	0	10	0	0
Lane Group Flow (vph)	0	222	58	164	157	0	463	312	63	102	344	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Perm	Split
Protected Phases	4	4		8	8	5	2		1	6		
Permitted Phases			4					2				
Actuated Green, G (s)		10.7	10.7	10.6	10.6	10.8	16.4	16.4	6.3	11.9		
Effective Green, g (s)		10.7	10.7	10.6	10.6	10.8	16.4	16.4	6.3	11.9		
Actuated g/C Ratio		0.18	0.18	0.18	0.18	0.18	0.27	0.27	0.10	0.20		
Clearance Time (s)		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	5.0	3.0	3.0	3.0	5.0		
Lane Grp Cap (vph)		331	282	297	294	618	967	405	186	691		
v/s Ratio Prot		c0.12		c0.10	0.09	c0.13	0.09		0.06	c0.10		
v/s Ratio Perm			0.04					0.04				
v/c Ratio		0.67	0.21	0.55	0.53	0.75	0.32	0.16	0.55	0.50		
Uniform Delay, d1		23.0	21.0	22.5	22.4	23.3	17.4	16.5	25.5	21.4		
Progression Factor		1.00	1.00	1.00	1.00	0.79	0.70	0.88	1.00	1.00		
Incremental Delay, d2		5.3	0.4	2.2	1.9	4.8	0.7	0.7	3.3	2.6		
Delay (s)		28.3	21.4	24.8	24.3	23.4	12.9	15.3	28.8	24.0		
Level of Service		C	C	C	C	C	B	B	C	C		
Approach Delay (s)		24.2			24.5		18.3			25.0		
Approach LOS		C			C		B			C		

Intersection Summary


HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↖	↗	↖	↗
Volume (vph)	122	84	367	480	95	22	225	150	184	14	74	19
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	1.00	1.00	0.85	1.00	0.97	1.00	1.00	0.85	1.00	0.98	1.00	0.99
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	0.99	1.00	0.99
Satd. Flow (prot)	1770	1863	1583	1770	1810	1770	1863	1450	1806	1770	1863	1450
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	0.99	1.00	0.99
Satd. Flow (perm)	1770	1863	1583	1770	1810	1770	1863	1450	1806	1770	1863	1450
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	128	88	386	505	100	23	237	158	194	15	78	20
RTOR Reduction (vph)	0	0	205	0	11	0	0	0	157	0	11	0
Lane Group Flow (vph)	128	88	181	505	112	0	237	158	37	0	102	0
Confl. Peds. (#/hr)							25					
Turn Type	Prot	pm+ov	Prot		Split	Perm	Split					
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)	6.5	7.7	19.8	20.2	21.4	12.1	12.1	12.1		7.5		
Effective Green, g (s)	6.5	7.7	19.8	20.2	21.4	12.1	12.1	12.1		7.5		
Actuated g/C Ratio	0.10	0.12	0.31	0.32	0.34	0.19	0.19	0.19		0.12		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0		
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)	181	226	593	563	610	337	355	276		213		
v/s Ratio Prot	0.07	c0.05	0.06	c0.29	0.06	c0.13	0.08			c0.06		
v/s Ratio Perm			0.06					0.03				
v/c Ratio	0.71	0.39	0.31	0.90	0.18	0.70	0.45	0.13		0.48		
Uniform Delay, d1	27.6	25.7	16.6	20.7	14.9	24.0	22.7	21.3		26.2		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00		
Incremental Delay, d2	11.9	1.3	0.3	16.8	0.2	6.5	0.9	0.2		1.7		
Delay (s)	39.5	27.0	16.9	37.5	15.0	30.5	23.6	21.6		27.8		
Level of Service	D	C	B	D	B	C	C	C		C		
Approach Delay (s)		23.2			33.1		25.7			27.8		
Approach LOS		C			C		C			C		

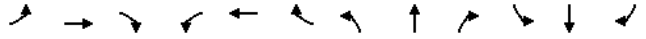
Intersection Summary

HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	1407	61	50	697	56	54	9	61	41	7	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
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Flt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3517		1770	3539	1583		1786	1583		1786	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.77	1.00		0.78	1.00
Satd. Flow (perm)	1770	3517		1770	3539	1583		1434	1583		1454	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	1481	64	53	734	59	57	9	64	43	7	1
RTOR Reduction (vph)	0	4	0	0	0	27	0	0	47	0	0	1
Lane Group Flow (vph)	35	1541	0	53	734	32	0	66	17	0	50	0
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	3.7	43.1		3.7	43.1	43.1	21.0	21.0	21.0	21.0	21.0	21.0
Effective Green, g (s)	3.7	43.1		3.7	43.1	43.1	21.0	21.0	21.0	21.0	21.0	21.0
Actuated g/C Ratio	0.05	0.54		0.05	0.54	0.54	0.26	0.26	0.26	0.26	0.26	0.26
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)	82	1900		82	1911	855	377	417		383	417	
v/s Ratio Prot	0.02	c0.44		c0.03	0.21		c0.05	0.01		0.03	0.00	0.00
v/s Ratio Perm						0.02						
v/c Ratio	0.43	0.81		0.65	0.38	0.04	0.18	0.04		0.13	0.00	0.00
Uniform Delay, d1	37.0	15.0		37.4	10.6	8.6	22.7	21.9		22.4	21.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	2.7		16.2	0.1	0.0	1.0	0.2		0.7	0.0	
Delay (s)	40.6	17.8		53.6	10.8	8.6	23.7	22.1		23.1	21.7	
Level of Service	D	B		D	B	A	C	C		C	C	
Approach Delay (s)		18.3			13.3		22.9			23.1		
Approach LOS		B			B		C			C		

Intersection Summary

HCM Average Control Delay		17.0		HCM Level of Service	B
HCM Volume to Capacity ratio		0.61			
Actuated Cycle Length (s)		79.8		Sum of lost time (s)	12.0
Intersection Capacity Utilization		58.3%		ICU Level of Service	B
Analysis Period (min)		15			
c Critical Lane Group					

AM Peak Hour - Short Term Cumulative Conditions  
Town Center Specific Plan  
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*  
Intersection #18 Mt Hermon Road/Washington Mutual Access  
\*\*\*\*\*

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: C[ 21.5]

Street Name: Washington Mutual Access Mt Hermon Road  
Approach: North Bound South Bound East Bound West Bound  
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
Rights: Include Include Include Include  
Lanes: 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0

Volume Module:																		
Base Vol:	2	0	111	0	0	0	0	1475	22	162	683	0						
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Initial Bse:	2	0	111	0	0	0	0	1475	22	162	683	0						
Added Vol:	0	0	0	0	0	0	0	33	0	0	28	0						
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0						
Initial Fut:	2	0	111	0	0	0	0	1508	22	162	711	0						
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
PHF Volume:	2	0	117	0	0	0	0	1587	23	171	748	0						
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0						
FinalVolume:	2	0	117	0	0	0	0	1587	23	171	748	0						

Critical Gap Module:  
Critical Gp: 6.8 6.5 6.9 7.5 6.5 6.9 xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx  
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:  
Cnflct Vol: 2314 2688 805 1883 2700 374 xxxxx xxxxx xxxxx 1611 xxxxx xxxxx  
Potent Cap.: 33 22 330 44 22 629 xxxxx xxxxx xxxxx 411 xxxxx xxxxx  
Move Cap.: 22 13 330 19 13 629 xxxxx xxxxx xxxxx 411 xxxxx xxxxx  
Volume/Cap: 0.10 0.00 0.35 0.00 0.00 0.00 xxxxx xxxxx xxxxx 0.42 xxxxx xxxxx

Level Of Service Module:  
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 2.0 xxxxx xxxxx  
Control Del: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 19.8 xxxxx xxxxx  
LOS by Move: \* \* \* \* \* \* \* \* \* \* C \* \* \* \* \* \*  
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT  
Shared Cap.: xxxxx 336 xxxxx xxxxx xxxxx 0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
SharedQueue: xxxxx 1.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
Shrd ConDel: xxxxx 21.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
Shared LOS: \* C \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*  
ApproachDel: 21.5 xxxxxx xxxxxx xxxxxx  
ApproachLOS: C \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

Note: Queue reported is the number of cars per lane.



AM Peak Hour - Short Term Cumulative Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.186
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 0 Level Of Service: A

Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 57 1 92 0 1 0 0 7 10 99 21 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 57 1 92 0 1 0 0 7 10 99 21 1
Added Vol: 2 0 3 0 0 0 0 1 2 12 1 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 59 1 95 0 1 0 0 8 12 111 22 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 62 1 100 0 1 0 0 8 13 117 23 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 62 1 100 0 1 0 0 8 13 117 23 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 62 1 100 0 1 0 0 8 13 117 23 1

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.38 0.01 0.61 0.00 1.00 0.00 0.00 0.40 0.60 0.83 0.16 0.01
Final Sat.: 335 6 539 0 781 0 0 342 514 656 130 6

Capacity Analysis Module:
Vol/Sat: 0.19 0.19 0.19 xxxx 0.00 xxxx xxxx 0.02 0.02 0.18 0.18 0.18
Crit Moves: \*\*\*\*
Delay/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
LOS by Move: A A A \* A \* \* A A A A A
ApproachDel: 7.8 7.4 7.1 8.3
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 7.8 7.4 7.1 8.3
LOS by Appr: A A A A
AllWayAvgQ: 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.2 0.2

AM Peak Hour - Short Term Cumulative Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road

Average Delay (sec/veh): 6.0 Worst Case Level Of Service: B[ 12.3]

Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0

Volume Module:
Base Vol: 105 27 2 0 49 14 14 0 78 10 1 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 105 27 2 0 49 14 14 0 78 10 1 0
Added Vol: 3 1 0 0 4 3 1 0 10 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 108 28 2 0 53 17 15 0 88 10 1 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 114 29 2 0 56 18 16 0 93 11 1 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 114 29 2 0 56 18 16 0 93 11 1 0

Capacity Module:
Cnflct Vol: 74 xxxx xxxx xxxx xxxx 323 324 65 369 332 xxxx
Potent Cap.: 1539 xxxx xxxx xxxx xxxx 634 597 1005 591 591 xxxx
Move Cap.: 1539 xxxx xxxx xxxx xxxx 595 550 1005 504 545 xxxx
Volume/Cap: 0.07 xxxx xxxx xxxx xxxx 0.03 0.00 0.09 0.02 0.00 xxxx

Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 7.5 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx 913 xxxx 508 xxxx xxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 0.4 xxxxx 0.1 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 9.5 xxxxx 12.3 xxxx xxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 9.5 12.3
ApproachLOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Note: Queue reported is the number of cars per lane.

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	12	538	1188	145	68	9
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	566	1251	153	72	9
RTOR Reduction (vph)	0	0	0	45	0	8
Lane Group Flow (vph)	13	566	1251	108	72	1
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.3	64.5	59.2	59.2	11.0	11.0
Effective Green, g (s)	1.3	64.5	59.2	59.2	11.0	11.0
Actuated g/C Ratio	0.02	0.77	0.71	0.71	0.13	0.13
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)	28	2656	1283	1122	233	209
v/s Ratio Prot	c0.01	0.16	c0.69		c0.04	
v/s Ratio Perm				0.07		0.00
v/c Ratio	0.46	0.21	0.98	0.10	0.31	0.01
Uniform Delay, d1	40.8	2.6	11.5	3.8	32.8	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.0	19.2	0.0	3.4	0.0
Delay (s)	52.4	2.6	30.7	3.8	36.2	31.5
Level of Service	D	A	C	A	D	C
Approach Delay (s)		3.7	27.8		35.7	
Approach LOS		A	C		D	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	13	586	19	229	1314	83	38	6	151	44	13	9
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3425		1770	3413			1785	1583		1794	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.76	1.00		0.78	1.00
Satd. Flow (perm)	1770	3425		1770	3413			1409	1583		1449	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	617	20	241	1383	87	40	6	159	46	14	9
RTOR Reduction (vph)	0	4	0	0	7	0	0	0	127	0	0	7
Lane Group Flow (vph)	14	633	0	241	1463	0	0	46	32	0	60	2
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4		8		8
Permitted Phases							4		4		8	8
Actuated Green, G (s)	1.2	18.3		11.3	28.4			10.3	10.3		10.3	10.3
Effective Green, g (s)	1.2	18.3		11.3	28.4			10.3	10.3		10.3	10.3
Actuated g/C Ratio	0.02	0.35		0.22	0.55			0.20	0.20		0.20	0.20
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)	41	1208		385	1868			280	314		288	314
v/s Ratio Prot	0.01	0.18		c0.14	c0.43						c0.04	0.00
v/s Ratio Perm							0.03	0.02				
v/c Ratio	0.34	0.52		0.63	0.78			0.16	0.10		0.21	0.01
Uniform Delay, d1	25.0	13.3		18.4	9.3			17.2	17.0		17.4	16.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	4.9	0.4		3.2	2.2			0.3	0.1		0.4	0.0
Delay (s)	29.9	13.8		21.6	11.5			17.5	17.2		17.8	16.7
Level of Service	C	B		C	B			B	B		B	B
Approach Delay (s)		14.1			12.9			17.2			17.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	141	779	4	125	1403	136	39	23	84	189	24	277
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3436		1770	3438	1583		1806	1583		1784	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.64	1.00		0.70	1.00
Satd. Flow (perm)	1770	3436		1770	3438	1583		1201	1583		1311	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	820	4	132	1477	143	41	24	88	199	25	292
RTOR Reduction (vph)	0	0	0	0	0	52	0	0	69	0	0	166
Lane Group Flow (vph)	148	824	0	132	1477	92	0	65	19	0	224	126
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm	Perm	Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.1	65.5		13.1	64.5	64.5	25.4	25.4		25.4	25.4	
Effective Green, g (s)	14.1	65.5		13.1	64.5	64.5	25.4	25.4		25.4	25.4	
Actuated g/C Ratio	0.12	0.56		0.11	0.56	0.56	0.22	0.22		0.22	0.22	
Clearance Time (s)	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	
Lane Grp Cap (vph)	215	1940		200	1912	880	263	347		287	347	
v/s Ratio Prot	c0.08	0.24		0.07	c0.43		0.05	0.01		c0.17	0.08	
v/s Ratio Perm					0.06		0.05	0.01		c0.17	0.08	
v/c Ratio	0.69	0.42		0.66	0.77	0.10	0.25	0.06		0.78	0.36	
Uniform Delay, d1	48.8	14.5		49.3	20.0	12.1	37.4	35.8		42.7	38.4	
Progression Factor	1.00	1.00		1.20	0.58	0.87	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.8	0.7		5.6	2.2	0.2	0.5	0.1		12.9	0.7	
Delay (s)	57.7	15.1		64.9	13.7	10.7	37.9	35.9		55.5	39.1	
Level of Service	E	B		E	B	B	D	D		E	D	
Approach Delay (s)	21.6			17.3			36.7			46.2		
Approach LOS	C			B			D			D		

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	50	980	14	41	1573	294	8	0	13	173	4	55
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3432		1770	3438	1583		1770	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.43	1.00		0.73	1.00
Satd. Flow (perm)	1770	3432		1770	3438	1583		801	1583		1351	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1032	15	43	1656	309	8	0	14	182	4	58
RTOR Reduction (vph)	0	1	0	0	0	93	0	0	11	0	0	47
Lane Group Flow (vph)	53	1046	0	43	1656	216	0	8	3	0	186	11
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm	Perm	Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases					6	4		4	4			4
Actuated Green, G (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Effective Green, g (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Actuated g/C Ratio	0.07	0.65		0.06	0.65	0.65	0.18	0.18		0.18	0.18	
Clearance Time (s)	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	
Lane Grp Cap (vph)	117	2240		110	2229	1026	146	288		246	288	
v/s Ratio Prot	c0.03	0.30		0.02	c0.48		0.01	0.00		c0.14	0.01	
v/s Ratio Perm					0.14		0.01	0.00		c0.14	0.01	
v/c Ratio	0.45	0.47		0.39	0.74	0.21	0.05	0.01		0.76	0.04	
Uniform Delay, d1	52.1	10.1		52.3	13.8	8.3	39.2	38.9		45.0	39.1	
Progression Factor	1.40	0.71		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.6		2.3	2.3	0.5	0.2	0.0		12.4	0.1	
Delay (s)	75.7	7.8		54.6	16.1	8.8	39.4	38.9		57.4	39.1	
Level of Service	E	A		D	B	A	D	D		E	D	
Approach Delay (s)	11.1			15.8			39.1			53.1		
Approach LOS	B			B			D			D		

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	485	810	82	224	1286	462	135	95	122	540	104	543
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3365		1770	3438	1478	1681	1754	1478	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3365		1770	3438	1478	1681	1754	1478	3433	1863	1550
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	500	835	85	231	1326	476	139	98	126	557	107	560
RTOR Reduction (vph)	0	5	0	0	0	206	0	0	110	0	0	0
Lane Group Flow (vph)	500	915	0	231	1326	270	117	120	16	557	107	560
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	22.3	54.2		20.3	52.2	52.2	17.0	17.0	17.0	22.0	22.0	130.0
Effective Green, g (s)	22.3	54.2		20.3	52.2	52.2	17.0	17.0	17.0	22.0	22.0	130.0
Actuated g/C Ratio	0.17	0.42		0.16	0.40	0.40	0.13	0.13	0.13	0.17	0.17	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	589	1403		276	1380	593	220	229	193	581	315	1550
v/s Ratio Prot	c0.15	0.27		0.13	c0.39		c0.07	0.07		c0.16	0.06	
v/s Ratio Perm						0.18			0.01			c0.36
v/c Ratio	0.85	0.65		0.84	0.96	0.46	0.53	0.52	0.09	0.96	0.34	0.36
Uniform Delay, d1	52.2	30.3		53.2	37.9	28.5	52.8	52.7	49.7	53.5	47.6	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
Incremental Delay, d2	11.0	2.4		19.3	16.5	2.5	2.5	2.2	0.2	27.0	0.6	0.7
Delay (s)	63.2	32.7		72.5	54.4	31.0	55.2	54.9	49.9	80.5	48.2	0.7
Level of Service	E	C		E	D	C	E	D	D	F	D	A
Approach Delay (s)		43.5			51.0			53.3				41.2
Approach LOS		D			D			D				D

Intersection Summary			
HCM Average Control Delay	46.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	169	1264	16	8	1672	132	5	3	20	130	0	137
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	0.85	1.00
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.97	1.00	0.97	1.00	0.95	1.00
Satd. Flow (prot)	1770	3433		1770	3438	1583	1806	1583	1681	1681	1583	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.89	1.00	0.75	0.75	1.00	1.00
Satd. Flow (perm)	1770	3433		1770	3438	1583	1656	1583	1332	1332	1583	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	174	1303	16	8	1724	136	5	3	21	134	0	141
RTOR Reduction (vph)	0	1	0	0	0	44	0	0	18	0	0	121
Lane Group Flow (vph)	174	1318	0	8	1724	92	0	8	3	67	67	20
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	15.5	86.0		1.4	71.9	71.9	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	15.5	86.0		1.4	71.9	71.9	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.13	0.74		0.01	0.62	0.62	0.14	0.14	0.14	0.14	0.14	0.14
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)	237	2545		21	2131	981	237	227	191	191	227	227
v/s Ratio Prot	c0.10	0.38		0.00	c0.50							
v/s Ratio Perm						0.06	0.00	0.00	c0.05	0.05	0.01	
v/c Ratio	0.73	0.52		0.38	0.81	0.09	0.03	0.01	0.35	0.35	0.09	
Uniform Delay, d1	48.3	6.3		56.9	16.8	8.9	42.8	42.7	44.8	44.8	43.1	
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	11.2	0.8		11.2	3.4	0.2	0.1	0.0	1.1	1.1	0.2	
Delay (s)	59.4	7.1		68.0	20.3	9.1	42.9	42.7	46.0	46.0	43.3	
Level of Service	E	A		E	C	A	D	D	D	D	D	D
Approach Delay (s)		13.2			19.6			42.7				44.6
Approach LOS		B			B			D				D

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	7	↑	↑
Volume (vph)	0	1111	262	183	1012	0	296	0	243	7	104	521
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		0.95	1.00	1.00	0.95		0.97		1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.85	1.00
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	1.00	1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583	1857	1538	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	1.00	1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2470		1583	1857	1538	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1145	270	189	1043	0	305	0	251	7	107	537
RTOR Reduction (vph)	0	0	180	0	0	0	0	0	184	0	0	40
Lane Group Flow (vph)	0	1145	90	189	1043	0	305	0	67	0	114	497
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4	4		
Permitted Phases		2			8		18				4	
Actuated Green, G (s)		30.0	30.0	8.0	42.0		12.0		24.0		24.0	24.0
Effective Green, g (s)		30.0	30.0	8.0	42.0		12.0		24.0		24.0	24.0
Actuated g/C Ratio		0.33	0.33	0.09	0.47		0.13		0.27		0.27	0.27
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)		1146	528	157	1652		329		422		495	410
v/s Ratio Prot		c0.33		c0.11	0.29						0.06	
v/s Ratio Perm			0.06				c0.12		0.04			c0.32
v/c Ratio		1.00	0.17	1.20	0.63		0.93		0.16		0.23	1.21
Uniform Delay, d1		30.0	21.2	41.0	18.1		38.6		25.3		25.8	33.0
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		26.2	0.2	137.0	0.8		31.1		0.2		0.2	116.5
Delay (s)		56.2	21.4	178.0	18.9		69.7		25.4		26.0	149.5
Level of Service		E	C	F	B		E		C		C	F
Approach Delay (s)		49.5			43.3		49.7		127.9			
Approach LOS		D			D		D		F			

Intersection Summary			
HCM Average Control Delay	60.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑	↑	↑↑	↑↑	↑
Volume (vph)	128	111	149	813	1137	163
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1513
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	117	157	856	1197	172
RTOR Reduction (vph)	0	97	0	0	0	70
Lane Group Flow (vph)	135	20	157	856	1197	102
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	19.4	19.4	15.6	88.6	69.0	69.0
Effective Green, g (s)	19.4	19.4	15.6	88.6	69.0	69.0
Actuated g/C Ratio	0.17	0.17	0.13	0.76	0.59	0.59
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)	296	251	238	2703	3025	900
v/s Ratio Prot	c0.08		c0.09	0.24	c0.24	
v/s Ratio Perm		0.01				0.07
v/c Ratio	0.46	0.08	0.66	0.32	0.40	0.11
Uniform Delay, d1	43.5	40.8	47.7	4.3	12.5	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	6.5	0.3	0.4	0.3
Delay (s)	44.7	40.9	54.1	4.6	12.8	10.5
Level of Service	D	D	D	A	B	B
Approach Delay (s)	42.9			12.3	12.5	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	31	0	99	15	0	5	91	765	5	40	1198	15
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.97	1.00		1.00	1.00		1.00	1.00	
Fit Protected	0.95	1.00		0.96	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1737	1770		3536	3536		1770	3533	
Fit Permitted	0.78	1.00		0.76	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1461	1583		1362	1770		3536	3536		1770	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	0	104	16	0	5	96	805	5	42	1261	16
RTOR Reduction (vph)	0	0	92	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	33	12	0	17	0	96	810	0	42	1276	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.1	5.1		5.1		4.1	26.1		2.6	24.6	
Effective Green, g (s)		5.1	5.1		5.1		4.1	26.1		2.6	24.6	
Actuated g/C Ratio		0.11	0.11		0.11		0.09	0.57		0.06	0.54	
Clearance Time (s)		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	
Lane Grp Cap (vph)		163	176		152		158	2015		100	1898	
v/s Ratio Prot							c0.05	0.23		0.02	c0.36	
v/s Ratio Perm		c0.02	0.01		0.01							
v/c Ratio		0.20	0.07		0.11		0.61	0.40		0.42	0.67	
Uniform Delay, d1		18.5	18.2		18.3		20.1	5.5		20.9	7.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.2		0.3		6.5	0.1		2.8	1.9	
Delay (s)		19.1	18.4		18.6		26.5	5.6		23.7	9.6	
Level of Service		B	B		B		C	A		C	A	
Approach Delay (s)		18.6			18.6		7.8			10.0		
Approach LOS		B			B		A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay	9.8			HCM Level of Service				A				
HCM Volume to Capacity ratio	0.59											
Actuated Cycle Length (s)	45.8			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	60.3%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												


HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	32	1	53	112	2	80	47	754	35	14	1123	5
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1776	1583	1770	1590	1770	3516	1770	3516	1770	3537	1770	3537
Fit Permitted	0.71	1.00	0.73	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1320	1583	1368	1590	1770	3516	1770	3516	1770	3537	1770	3537
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1	56	118	2	84	49	794	37	15	1182	5
RTOR Reduction (vph)	0	0	46	0	69	0	5	0	0	1	0	0
Lane Group Flow (vph)	0	35	10	118	17	0	49	826	0	15	1186	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7	
Effective Green, g (s)		8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7	
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.07	0.54		0.03	0.49	
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)		236	283	245	284		130	1887		46	1730	
v/s Ratio Prot					0.01		0.03	c0.23		0.01	c0.34	
v/s Ratio Perm		0.03	0.01	c0.09								
v/c Ratio		0.15	0.04	0.48	0.06		0.38	0.44		0.33	0.69	
Uniform Delay, d1		16.1	15.7	17.1	15.8		20.5	6.5		22.2	9.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.1	1.5	0.1		1.8	0.2		4.1	2.2	
Delay (s)		16.4	15.8	18.6	15.9		22.3	6.7		26.3	11.3	
Level of Service		B	B	B	B		C	A		C	B	
Approach Delay (s)		16.0			17.5		7.5			11.5		
Approach LOS		B			B		A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay	10.7			HCM Level of Service				B				
HCM Volume to Capacity ratio	0.58											
Actuated Cycle Length (s)	46.4			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	58.6%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 11: Carbonero Way & Scotts Valley Drive


8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔	↔	↔		↔	↔	
Volume (vph)	8	10	0	81	0	18	5	731	12	17	917	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	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frt	1.00		1.00		0.85		1.00		1.00		1.00	
Flt Protected	0.98		0.95		1.00		0.95		1.00		0.95	
Satd. Flow (prot)	1824		1770		1583		1770		3530		1770	
Flt Permitted	0.98		0.75		1.00		0.95		1.00		0.95	
Satd. Flow (perm)	1824		1388		1583		1770		3530		1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	11	0	85	0	19	5	769	13	18	965	8
RTOR Reduction (vph)	0	0	0	0	0	16	0	1	0	0	1	0
Lane Group Flow (vph)	0	19	0	85	0	3	5	781	0	18	972	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases	4						5		2		1	
Permitted Phases	4		8		8						6	
Actuated Green, G (s)	5.9		5.9		5.9		1.1		20.9		1.1	
Effective Green, g (s)	5.9		5.9		5.9		1.1		20.9		1.1	
Actuated g/C Ratio	0.15		0.15		0.15		0.03		0.52		0.03	
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)	270		205		234		49		1849		49	
v/s Ratio Prot							0.00		0.22		c0.01	
v/s Ratio Perm	0.01		c0.06		0.00						0.37	
v/c Ratio	0.07		0.41		0.01		0.10		0.42		0.37	
Uniform Delay, d1	14.6		15.4		14.5		18.9		5.8		19.1	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.1		1.4		0.0		0.9		0.2		4.6	
Delay (s)	14.7		16.8		14.5		19.8		6.0		23.7	
Level of Service	B		B		B		B		A		C	
Approach Delay (s)	14.7				16.4				6.1		6.8	
Approach LOS	B				B				A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay			7.1		HCM Level of Service				A			
HCM Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			39.9		Sum of lost time (s)				12.0			
Intersection Capacity Utilization			42.3%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 12: EL Pueblo Road & Scotts Valley Drive

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔	↔	↔		↔	↔	
Volume (vph)	38	0	26	98	0	137	29	702	57	42	715	42
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	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frt	0.95		1.00		0.85		1.00		0.99		1.00	
Flt Protected	0.97		0.95		1.00		0.95		1.00		0.95	
Satd. Flow (prot)	1710		1770		1583		1770		3499		1770	
Flt Permitted	0.97		0.71		1.00		0.95		1.00		0.95	
Satd. Flow (perm)	1710		1329		1583		1770		3499		1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	0	27	103	0	144	31	739	60	44	753	44
RTOR Reduction (vph)	0	21	0	0	0	114	0	11	0	0	8	0
Lane Group Flow (vph)	0	46	0	103	0	30	31	788	0	44	789	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases	4						5		2		1	
Permitted Phases	4		8		8						6	
Actuated Green, G (s)	8.1		8.1		8.1		1.3		16.9		2.4	
Effective Green, g (s)	8.1		8.1		8.1		1.3		16.9		2.4	
Actuated g/C Ratio	0.21		0.21		0.21		0.03		0.43		0.06	
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)	352		273		325		58		1501		108	
v/s Ratio Prot							0.02		c0.23		0.02	
v/s Ratio Perm	0.03		c0.08		0.02						0.41	
v/c Ratio	0.13		0.38		0.09		0.53		0.53		0.41	
Uniform Delay, d1	12.8		13.5		12.7		18.8		8.3		17.8	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.2		0.9		0.1		9.1		0.3		2.5	
Delay (s)	12.9		14.4		12.8		27.9		8.6		20.3	
Level of Service	B		B		B		C		A		C	
Approach Delay (s)	12.9				13.4				9.3		8.4	
Approach LOS	B				B				A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay			9.6		HCM Level of Service				A			
HCM Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			39.4		Sum of lost time (s)				8.0			
Intersection Capacity Utilization			48.0%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	125	168	880	96	190	673
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3470		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3470		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	132	177	926	101	200	708
RTOR Reduction (vph)	0	20	15	0	0	0
Lane Group Flow (vph)	132	157	1012	0	200	708
Confl. Peds. (#/hr)				25		
Turn Type	pm+ov		Prot			
Protected Phases	6	7	8	7		4
Permitted Phases	6					
Actuated Green, G (s)	7.1	13.3	18.6	6.2		28.8
Effective Green, g (s)	7.1	13.3	18.6	6.2		28.8
Actuated g/C Ratio	0.16	0.30	0.42	0.14		0.66
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	286	624	1470	250		2322
v/s Ratio Prot	c0.07	0.04	c0.29	c0.11		0.20
v/s Ratio Perm	0.06					
v/c Ratio	0.46	0.25	0.69	0.80		0.30
Uniform Delay, d1	16.7	11.5	10.3	18.2		3.2
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	1.2	0.2	1.4	16.5		0.1
Delay (s)	17.8	11.8	11.7	34.8		3.3
Level of Service	B	B	B	C		A
Approach Delay (s)	14.4		11.7		10.3	
Approach LOS	B		B		B	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	29	33	15	329	4	375	8	604	561	226	479	7
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Fit Protected	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1820	1448	1681	1687	1583	1770	3539	1479	1770	3539	1770	3530
Fit Permitted	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1820	1448	1681	1687	1583	1770	3539	1479	1770	3539	1770	3530
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	35	16	346	4	395	8	636	591	238	504	7
RTOR Reduction (vph)	0	0	14	0	0	251	0	0	432	0	1	0
Lane Group Flow (vph)	0	66	2	176	174	144	8	636	159	238	510	0
Confl. Peds. (#/hr)				25							25	
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7	8	8	1	5	2	2	1	6		
Permitted Phases	7											
Actuated Green, G (s)	6.0	6.0	11.1	11.1	21.9	1.6	16.1	16.1	10.8	25.3		
Effective Green, g (s)	6.0	6.0	11.1	11.1	21.9	1.6	16.1	16.1	10.8	25.3		
Actuated g/C Ratio	0.10	0.10	0.18	0.18	0.36	0.03	0.27	0.27	0.18	0.42		
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	5.0	5.0	3.0	5.0		
Lane Grp Cap (vph)	182	145	311	312	683	47	950	397	319	1488		
v/s Ratio Prot	c0.04		c0.10	0.10	0.04	0.00	c0.18		c0.13	0.14		
v/s Ratio Perm	0.00											
v/c Ratio	0.36	0.01	0.57	0.56	0.21	0.17	0.67	0.40	0.75	0.34		
Uniform Delay, d1	25.2	24.3	22.3	22.2	13.1	28.6	19.6	18.0	23.3	11.7		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.62		
Incremental Delay, d2	1.2	0.0	2.4	2.2	0.2	1.7	3.7	3.0	8.3	0.6		
Delay (s)	26.4	24.4	24.6	24.4	13.3	30.3	23.3	21.0	31.7	7.8		
Level of Service	C	C	C	C	B	C	C	C	C	A		
Approach Delay (s)	26.0		18.5			22.2			15.4			
Approach LOS	C		B			C			B			

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
 15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔		↔	↔	↔	↔	↔	↔
Volume (vph)	10	104	217	281	54	49	367	230	326	60	167	11
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	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	0.95	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.94	1.00	0.99			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr t	1.00	0.85	1.00	0.96	1.00	1.00	0.85	1.00	0.99			
Fit Protected	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00			
Satd. Flow (prot)	1854	1583	1681	1640	3433	3539	1487	1770	3486			
Fit Permitted	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00			
Satd. Flow (perm)	1854	1583	1681	1640	3433	3539	1487	1770	3486			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	109	228	296	57	52	386	242	343	63	176	12
RTOR Reduction (vph)	0	0	189	0	21	0	0	0	240	0	8	0
Lane Group Flow (vph)	0	120	39	204	180	0	386	242	103	63	180	0
Confl. Peds. (#/hr)	25					25		25				25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Prot	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)	10.3	10.3	11.0	11.0		11.6	18.0	18.0	4.7	11.1		
Effective Green, g (s)	10.3	10.3	11.0	11.0		11.6	18.0	18.0	4.7	11.1		
Actuated g/C Ratio	0.17	0.17	0.18	0.18		0.19	0.30	0.30	0.08	0.18		
Clearance Time (s)	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		5.0	3.0	3.0	3.0	5.0		
Lane Grp Cap (vph)	318	272	308	301		664	1062	446	139	645		
v/s Ratio Prot	c0.06		c0.12	0.11		c0.11	0.07		c0.04	c0.05		
v/s Ratio Perm		0.02					0.07					
v/c Ratio	0.38	0.14	0.66	0.60		0.58	0.23	0.23	0.45	0.28		
Uniform Delay, d1	22.0	21.1	22.8	22.5		22.0	15.8	15.8	26.4	21.0		
Progression Factor	1.00	1.00	1.00	1.00		0.72	0.56	1.03	1.00	1.00		
Incremental Delay, d2	0.8	0.2	5.3	3.2		1.6	0.4	1.0	2.3	1.1		
Delay (s)	22.8	21.3	28.0	25.6		17.5	9.3	17.2	28.8	22.1		
Level of Service	C	C	C	C		B	A	B	C	C		
Approach Delay (s)	21.8			26.9		15.4			23.8			
Approach LOS	C			C		B			C			

**Intersection Summary**

HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔		↔	↔	↔	↔	↔	↔
Volume (vph)	26	152	307	231	17	2	357	70	363	10	98	18
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr t	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.85	1.00	0.98		
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1770	1863	1583	1770	1835	1770	1863	1474	1819			
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1770	1863	1583	1770	1835	1770	1863	1474	1819			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	160	323	243	18	2	376	74	382	11	103	19
RTOR Reduction (vph)	0	0	187	0	1	0	0	0	287	0	10	0
Lane Group Flow (vph)	27	160	136	243	19	0	376	74	95	0	123	0
Confl. Peds. (#/hr)							25					25
Turn Type		Prot	pm+ov		Prot		Split		Perm	Split		
Protected Phases		5	2	3	1	6		3	3		4	4
Permitted Phases			2						3			
Actuated Green, G (s)		1.4	9.8	23.9	9.4	17.8		14.1	14.1	14.1		7.5
Effective Green, g (s)		1.4	9.8	23.9	9.4	17.8		14.1	14.1	14.1		7.5
Actuated g/C Ratio		0.02	0.17	0.42	0.17	0.31		0.25	0.25	0.25		0.13
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.5	3.0	3.0	3.5		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		44	321	778	293	575		439	462	366		240
v/s Ratio Prot		0.02	c0.09	0.04	c0.14	0.01		c0.21	0.04			c0.07
v/s Ratio Perm				0.04						0.06		
v/c Ratio		0.61	0.50	0.17	0.83	0.03		0.86	0.16	0.26		0.51
Uniform Delay, d1		27.4	21.3	10.3	22.9	13.5		20.4	16.7	17.2		22.9
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2		22.8	1.4	0.1	17.3	0.0		15.1	0.2	0.4		1.8
Delay (s)		50.2	22.7	10.4	40.3	13.6		35.5	16.9	17.5		24.8
Level of Service		D	C	B	D	B		D	B	B		C
Approach Delay (s)		16.4			38.2			25.6				24.8
Approach LOS		B			D			C				C

**Intersection Summary**

HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	54	780	56	68	1615	124	155	22	66	110	17	20
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Flt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3504		1770	3539	1583		1785	1583		1785	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.66	1.00		0.59	1.00
Satd. Flow (perm)	1770	3504		1770	3539	1583		1231	1583		1098	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	821	59	72	1700	131	163	23	69	116	18	21
RTOR Reduction (vph)	0	8	0	0	0	64	0	0	51	0	0	16
Lane Group Flow (vph)	57	873	0	72	1700	67	0	186	18	0	134	5
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2		6		6
Permitted Phases						8	2		2			6
Actuated Green, G (s)	2.8	31.5		3.4	32.1	32.1		16.1	16.1		16.1	16.1
Effective Green, g (s)	2.8	31.5		3.4	32.1	32.1		16.1	16.1		16.1	16.1
Actuated g/C Ratio	0.04	0.50		0.05	0.51	0.51		0.26	0.26		0.26	0.26
Clearance Time (s)	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
Lane Grp Cap (vph)	79	1752		96	1803	807		315	405		281	405
v/s Ratio Prot	0.03	0.25		c0.04	c0.48							
v/s Ratio Perm						0.04		c0.15	0.01		0.12	0.00
v/c Ratio	0.72	0.50		0.75	0.94	0.08		0.59	0.04		0.48	0.01
Uniform Delay, d1	29.7	10.5		29.4	14.6	7.9		20.6	17.7		19.9	17.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	27.5	0.2		27.6	10.6	0.0		7.9	0.2		5.7	0.1
Delay (s)	57.2	10.7		56.9	25.1	8.0		28.5	17.9		25.6	17.6
Level of Service	E	B		E	C	A		C	B		C	B
Approach Delay (s)		13.5			25.2			25.6			24.5	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

PM Peak Hour - Short Term Cumulative Conditions  
Town Center Specific Plan  
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 Mt Hermon Road/Washington Mutual Access

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: F[ 62.9]

Street Name: Washington Mutual Access Mt Hermon Road  
Approach: North Bound South Bound East Bound West Bound  
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
Rights: Include Include Include Include  
Lanes: 0 0 1 1 0 0 1 0 0 1 0 0 1 0 1 0 1 0 1 0

Volume Module:

Base Vol: 13 0 184 0 0 0 0 890 45 294 1567 0  
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Initial Bse: 13 0 184 0 0 0 0 890 45 294 1567 0  
Added Vol: 0 0 0 0 0 0 0 0 66 0 0 68 0  
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0  
Initial Fut: 13 0 184 0 0 0 0 956 45 294 1635 0  
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
PHF Volume: 14 0 194 0 0 0 0 1006 47 309 1721 0  
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0  
FinalVolume: 14 0 194 0 0 0 0 1006 47 309 1721 0

Critical Gap Module:

Critical Gp: 6.8 6.5 6.9 7.5 6.5 6.9 xxxxx xxxx xxxxx 4.1 xxxx xxxxx  
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 xxxxx xxxx xxxxx 2.2 xxxx xxxxx

Capacity Module:

Cnflct Vol: 2509 3370 527 2843 3394 861 xxxx xxxx xxxxx 1054 xxxx xxxxx  
Potent Cap.: 24 8 501 8 8 303 xxxx xxxx xxxxx 668 xxxx xxxxx  
Move Cap.: 15 4 501 3 4 303 xxxx xxxx xxxxx 668 xxxx xxxxx  
Volume/Cap: 0.89 0.00 0.39 0.00 0.00 0.00 xxxx xxxx xxxx 0.46 xxxx xxxx

Level Of Service Module:

2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx 2.5 xxxx xxxxx  
Control Del: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 14.9 xxxx xxxxx  
LOS by Move: \* \* \* \* \* \* \* \* \* \* B \* \* \*

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx 251 xxxxx xxxx xxxx 0 xxxx xxxx xxxxx xxxx xxxx xxxxx

SharedQueue: xxxxx 6.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxxx xxxxx

Shrd ConDel: xxxxx 62.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxxx xxxxx

Shared LOS: \* F \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

ApproachDel: 62.9 xxxxxx xxxxxx xxxxxx

ApproachLOS: F \* \* \* \*

Note: Queue reported is the number of cars per lane.



HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	448	958	87	121	997	397	114	80	109	428	70	409
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3372		1770	3438	1478	1681	1752	1478	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3372		1770	3438	1478	1681	1752	1478	3433	1863	1550
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	462	988	90	125	1028	409	118	82	112	441	72	422
RTOR Reduction (vph)	0	4	0	0	219	0	0	98	0	0	0	0
Lane Group Flow (vph)	462	1074	0	125	1028	190	98	102	14	441	72	422
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	21.1	61.9		14.4	55.2	55.2	16.8	16.8	16.8	20.4	20.4	130.0
Effective Green, g (s)	21.1	61.9		14.4	55.2	55.2	16.8	16.8	16.8	20.4	20.4	130.0
Actuated g/C Ratio	0.16	0.48		0.11	0.42	0.42	0.13	0.13	0.13	0.16	0.16	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	557	1606		196	1460	628	217	226	191	539	292	1550
v/s Ratio Prot	c0.13	0.32		0.07	c0.30		c0.06	0.06		c0.13	0.04	
v/s Ratio Perm					0.13			0.01				0.27
v/c Ratio	0.83	0.67		0.64	0.70	0.30	0.45	0.45	0.08	0.82	0.25	0.27
Uniform Delay, d1	52.7	26.2		55.3	30.7	24.7	52.3	52.3	49.8	53.0	48.1	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
Incremental Delay, d2	9.9	2.2		6.6	2.9	1.2	1.5	1.4	0.2	9.4	0.4	0.4
Delay (s)	62.6	28.4		62.0	33.6	25.9	53.8	53.8	49.9	62.4	48.5	0.4
Level of Service	E	C		E	C	C	D	D	D	E	D	A
Approach Delay (s)		38.7			33.8			52.4				33.4
Approach LOS		D			C			D				C

Intersection Summary		
HCM Average Control Delay	36.8	HCM Level of Service
HCM Volume to Capacity ratio	0.71	D
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	70.0%	ICU Level of Service
Analysis Period (min)	15	C
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	0	1068	378	183	722	0	366	0	297	10	110	374
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Fit Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	1538
Fit Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2450		1583		1855	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1101	390	189	744	0	377	0	306	10	113	386
RTOR Reduction (vph)	0	0	255	0	0	0	221	0	0	0	0	82
Lane Group Flow (vph)	0	1101	135	189	744	0	377	0	85	0	123	304
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm		Prot			custom		custom		Split	Perm
Protected Phases		2		1	6						4	4
Permitted Phases			2				8		18			4
Actuated Green, G (s)		29.9	29.9	8.0	41.9		12.0		24.0		20.3	20.3
Effective Green, g (s)		29.9	29.9	8.0	41.9		12.0		24.0		20.3	20.3
Actuated g/C Ratio		0.35	0.35	0.09	0.49		0.14		0.28		0.24	0.24
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)		1193	549	164	1720		341		441		437	362
v/s Ratio Prot		c0.32		c0.11	0.21						0.07	
v/s Ratio Perm			0.09				c0.15		0.05			c0.20
v/c Ratio		0.92	0.25	1.15	0.43		1.11		0.19		0.28	0.84
Uniform Delay, d1		27.0	20.1	39.1	14.4		37.1		23.7		27.0	31.4
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		11.8	0.2	117.2	0.2		80.2		0.2		0.4	15.9
Delay (s)		38.8	20.3	156.3	14.6		117.3		23.9		27.3	47.3
Level of Service		D	C	F	B		F		C		C	D
Approach Delay (s)		34.0			43.3			75.5				42.5
Approach LOS		C			D			E				D

Intersection Summary		
HCM Average Control Delay	45.4	HCM Level of Service
HCM Volume to Capacity ratio	0.96	D
Actuated Cycle Length (s)	86.2	Sum of lost time (s)
Intersection Capacity Utilization	66.8%	ICU Level of Service
Analysis Period (min)	15	C

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	15	1108	426	57	132	10
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1166	448	60	139	11
RTOR Reduction (vph)	0	0	0	35	0	8
Lane Group Flow (vph)	16	1166	448	25	139	3
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.2	22.5	17.3	17.3	11.2	11.2
Effective Green, g (s)	1.2	22.5	17.3	17.3	11.2	11.2
Actuated g/C Ratio	0.03	0.54	0.41	0.41	0.27	0.27
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)	51	1855	751	657	475	425
v/s Ratio Prot	0.01	c0.34	0.25		c0.08	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.31	0.63	0.60	0.04	0.29	0.01
Uniform Delay, d1	19.8	6.7	9.5	7.3	12.1	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.7	1.3	0.0	1.6	0.0
Delay (s)	23.4	7.4	10.8	7.3	13.7	11.2
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.6	10.4		13.5	
Approach LOS		A	B		B	

Intersection Summary	
HCM Average Control Delay	8.8 HCM Level of Service A
HCM Volume to Capacity ratio	0.52
Actuated Cycle Length (s)	41.7 Sum of lost time (s) 8.0
Intersection Capacity Utilization	45.6% ICU Level of Service A
Analysis Period (min)	15

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	5	1158	27	106	459	46	16	6	168	113	6	5
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3429		1770	3400			1796	1583		1778	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.80	1.00		0.72	1.00
Satd. Flow (perm)	1770	3429		1770	3400			1491	1583		1340	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1219	28	112	483	48	17	6	177	119	6	5
RTOR Reduction (vph)	0	3	0	0	11	0	0	0	140	0	0	4
Lane Group Flow (vph)	5	1244	0	112	520	0	0	23	37	0	125	1
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4	8		8
Actuated Green, G (s)	1.3	21.3		5.9	25.9			10.5	10.5		10.5	10.5
Effective Green, g (s)	1.3	21.3		5.9	25.9			10.5	10.5		10.5	10.5
Actuated g/C Ratio	0.03	0.43		0.12	0.52			0.21	0.21		0.21	0.21
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)	46	1470		210	1772			315	334		283	334
v/s Ratio Prot	0.00	c0.36		c0.06	0.15						c0.09	0.00
v/s Ratio Perm							0.02	0.02				
v/c Ratio	0.11	0.85		0.53	0.29			0.07	0.11		0.44	0.00
Uniform Delay, d1	23.6	12.7		20.6	6.7			15.7	15.8		17.1	15.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	4.7		2.6	0.1			0.1	0.1		1.1	0.0
Delay (s)	24.7	17.4		23.2	6.8			15.8	16.0		18.2	15.5
Level of Service	C	B		C	A			B	B		B	B
Approach Delay (s)		17.5			9.7			16.0			18.0	
Approach LOS		B			A			B			B	

Intersection Summary	
HCM Average Control Delay	15.1 HCM Level of Service B
HCM Volume to Capacity ratio	0.68
Actuated Cycle Length (s)	49.7 Sum of lost time (s) 12.0
Intersection Capacity Utilization	62.0% ICU Level of Service B
Analysis Period (min)	15

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Volume (vph)	140	1405	14	34	711	176	7	6	16	151	7	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
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1814	1583		1778	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.87	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		1629	1583		1352	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	1479	15	36	748	185	7	6	17	159	7	89
RTOR Reduction (vph)	0	0	0	0	0	74	0	0	14	0	0	74
Lane Group Flow (vph)	147	1494	0	36	748	111	0	13	3	0	166	15
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4		4	4
Actuated Green, G (s)	14.9	79.0		5.4	69.5	69.5		19.6	19.6		19.6	19.6
Effective Green, g (s)	14.9	79.0		5.4	69.5	69.5		19.6	19.6		19.6	19.6
Actuated g/C Ratio	0.13	0.68		0.05	0.60	0.60		0.17	0.17		0.17	0.17
Clearance Time (s)	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
Lane Grp Cap (vph)	227	2339		82	2060	948		275	267		228	267
v/s Ratio Prot	c0.08	c0.43		0.02	0.22						c0.12	0.01
v/s Ratio Perm					0.07		0.01	0.00				0.01
v/c Ratio	0.65	0.64		0.44	0.36	0.12	0.05	0.01		0.73		0.06
Uniform Delay, d1	48.1	10.4		53.8	11.9	10.0	40.4	40.1		45.7		40.4
Progression Factor	1.00	1.00		1.10	0.62	0.24	1.00	1.00		1.00		1.00
Incremental Delay, d2	6.2	1.3		3.5	0.5	0.2	0.1	0.0		11.0		0.1
Delay (s)	54.3	11.8		62.6	7.9	2.7	40.4	40.1		56.7		40.5
Level of Service	D	B		E	A	A	D	D		E		D
Approach Delay (s)		15.6			8.9			40.3			51.0	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Volume (vph)	32	1552	2	46	948	109	4	1	17	67	2	3
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3438		1770	3438	1583		1791	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.86	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3438	1583		1603	1583		1358	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1634	2	48	998	115	4	1	18	71	2	3
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	16	0	0	3
Lane Group Flow (vph)	34	1636	0	48	998	84	0	5	2	0	73	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases					6	4		4	4		4	4
Actuated Green, G (s)	5.3	82.6		7.4	84.7	84.7		14.0	14.0		14.0	14.0
Effective Green, g (s)	5.3	82.6		7.4	84.7	84.7		14.0	14.0		14.0	14.0
Actuated g/C Ratio	0.05	0.71		0.06	0.73	0.73		0.12	0.12		0.12	0.12
Clearance Time (s)	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
Lane Grp Cap (vph)	81	2448		113	2510	1156		193	191		164	191
v/s Ratio Prot	0.02	c0.48		c0.03	0.29						c0.05	0.00
v/s Ratio Perm					0.05		0.00	0.00				0.00
v/c Ratio	0.42	0.67		0.42	0.40	0.07	0.03	0.01		0.45		0.00
Uniform Delay, d1	53.9	9.2		52.3	6.0	4.5	45.0	44.9		47.4		44.9
Progression Factor	1.30	0.82		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	2.8	1.2		2.6	0.5	0.1	0.1	0.0		1.9		0.0
Delay (s)	73.0	8.7		54.8	6.4	4.6	45.0	44.9		49.3		44.9
Level of Service	E	A		D	A	A	D	D		D		D
Approach Delay (s)		10.0			8.2			45.0			49.1	
Approach LOS		A			A			D			D	

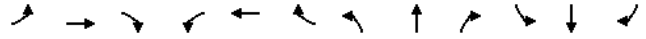
Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	
Volume (vph)	617	1148	39	99	618	574	74	140	161	635	101	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00		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	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	3415		1770	3438	1504	1681	1765	1504	3433	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3415		1770	3438	1504	1681	1765	1504	3433	1863	1550
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	636	1184	40	102	637	592	76	144	166	655	104	302
RTOR Reduction (vph)	0	2	0	0	0	451	0	0	138	0	0	0
Lane Group Flow (vph)	636	1222	0	102	637	141	68	152	28	655	104	302
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	16.0	29.9		7.6	21.5	21.5	15.2	15.2	15.2	20.8	20.8	90.0
Effective Green, g (s)	16.0	29.9		7.6	21.5	21.5	15.2	15.2	15.2	20.8	20.8	90.0
Actuated g/C Ratio	0.18	0.33		0.08	0.24	0.24	0.17	0.17	0.17	0.23	0.23	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	610	1135		149	821	359	284	298	254	793	431	1550
v/s Ratio Prot	c0.19	c0.36		0.06	0.19		0.04	c0.09		c0.19	0.06	
v/s Ratio Perm						0.09			0.02			0.19
v/c Ratio	1.04	1.08		0.68	0.78	0.39	0.24	0.51	0.11	0.83	0.24	0.19
Uniform Delay, d1	37.0	30.1		40.0	32.0	28.8	32.4	34.0	31.7	32.9	28.2	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	48.0	49.9		12.3	7.1	3.2	0.4	1.5	0.2	7.0	0.3	0.3
Delay (s)	85.0	79.9		52.3	39.1	32.0	32.8	35.5	31.9	39.9	28.5	0.3
Level of Service	F	E		D	D	C	C	D	C	D	C	A
Approach Delay (s)	81.7				36.9			33.5				27.5
Approach LOS	F				D			C				C

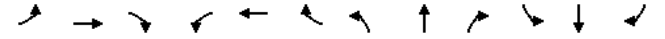
Intersection Summary

HCM Average Control Delay	52.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	
Volume (vph)	119	1629	32	31	1361	156	13	3	36	125	2	105
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Flt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.96	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3430		1770	3438	1583	1790	1583	1681	1688	1583	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.82	1.00	0.75	0.73	1.00	1.00
Satd. Flow (perm)	1770	3430		1770	3438	1583	1532	1583	1322	1286	1583	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	123	1679	33	32	1403	161	13	3	37	129	2	108
RTOR Reduction (vph)	0	1	0	0	0	57	0	0	32	0	0	93
Lane Group Flow (vph)	123	1711	0	32	1403	104	0	16	5	66	65	15
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	12.7	82.2		5.2	74.7	74.7	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	12.7	82.2		5.2	74.7	74.7	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.11	0.71		0.04	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
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)	194	2431		79	2214	1019	219	227	189	184	227	
v/s Ratio Prot	c0.07	c0.50		0.02	0.41							
v/s Ratio Perm						0.07	0.01	0.00	0.05	c0.05	0.01	
v/c Ratio	0.63	0.70		0.41	0.63	0.10	0.07	0.02	0.35	0.35	0.07	
Uniform Delay, d1	49.4	9.8		53.9	12.4	7.9	43.0	42.7	44.8	44.9	43.0	
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	6.6	1.7		3.4	1.4	0.2	0.1	0.0	1.1	1.2	0.1	
Delay (s)	56.0	11.6		57.3	13.8	8.1	43.2	42.8	45.9	46.0	43.1	
Level of Service	E	B		E	B	A	D	D	D	D	D	
Approach Delay (s)	14.5				14.1		42.9				44.7	
Approach LOS	B				B		D				D	

Intersection Summary

HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	6	36	↑
Volume (vph)	0	1659	105	120	1125	0	258	0	181	6	36	209
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1850	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.73		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2634		1583		1850	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1710	108	124	1160	0	266	0	187	6	37	215
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	166	0	0	86
Lane Group Flow (vph)	0	1710	61	124	1160	0	266	0	21	0	43	129
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		8					4
Actuated Green, G (s)		50.9	50.9	10.2	65.1		11.0		11.0		10.8	10.8
Effective Green, g (s)		50.9	50.9	10.2	65.1		11.0		11.0		10.8	10.8
Actuated g/C Ratio		0.51	0.51	0.10	0.66		0.11		0.11		0.11	0.11
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)		1769	815	183	2330		293		176		202	168
v/s Ratio Prot		c0.50		c0.07	0.33						0.02	
v/s Ratio Perm			0.04				c0.10		0.01			c0.08
v/c Ratio		0.97	0.07	0.68	0.50		0.91		0.12		0.21	0.77
Uniform Delay, d1		23.2	12.1	42.8	8.6		43.4		39.6		40.2	42.8
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		14.2	0.0	9.5	0.2		29.6		0.3		0.5	18.6
Delay (s)		37.4	12.2	52.3	8.8		73.1		39.9		40.7	61.4
Level of Service		D	B	D	A		E		D		D	E
Approach Delay (s)		35.9			13.0		59.4				57.9	
Approach LOS		D			B		E				E	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	98.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑	↑	↑↑	↑↑	↑
Volume (vph)	205	189	153	1094	624	142
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	1.00	1.00	1.00	0.95	0.91	1.00
Frb, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.95
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1511
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1511
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	199	161	1152	657	149
RTOR Reduction (vph)	0	162	0	0	0	63
Lane Group Flow (vph)	216	37	161	1152	657	86
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot			Perm
Protected Phases		4	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	21.3	21.3	15.9	86.7	66.8	66.8
Effective Green, g (s)	21.3	21.3	15.9	86.7	66.8	66.8
Actuated g/C Ratio	0.18	0.18	0.14	0.75	0.58	0.58
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)	325	275	243	2645	2928	870
v/s Ratio Prot	c0.12		c0.09	c0.33	0.13	
v/s Ratio Perm		0.02				0.06
v/c Ratio	0.66	0.13	0.66	0.44	0.22	0.10
Uniform Delay, d1	44.0	39.6	47.5	5.5	12.0	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.2	6.6	0.5	0.2	0.2
Delay (s)	49.1	39.8	54.1	6.0	12.2	11.3
Level of Service	D	D	D	A	B	B
Approach Delay (s)	44.7			11.9	12.0	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
 9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖ ↗	↖ ↗		↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Volume (vph)	6	0	10	16	0	37	100	1300	13	5	793	15
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.91	1.00		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.99	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1662	1770		3534	3534		1770	3529	
Flt Permitted	0.75	1.00		0.90	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1406	1583		1511	1770		3534	3529		1770	3529	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	0	11	17	0	39	105	1368	14	5	835	16
RTOR Reduction (vph)	0	0	10	0	35	0	1	0	0	2	0	0
Lane Group Flow (vph)	0	6	1	0	21	0	105	1381	0	5	849	0
Turn Type	Perm		Perm	Perm	Prot			Prot				
Protected Phases	4			8	5		2	1		6		
Permitted Phases	4		4	8								
Actuated Green, G (s)	5.3		5.3	5.3	4.2		33.9	1.2		30.9		
Effective Green, g (s)	5.3		5.3	5.3	4.2		33.9	1.2		30.9		
Actuated g/C Ratio	0.10		0.10	0.10	0.08		0.65	0.02		0.59		
Clearance Time (s)	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		
Lane Grp Cap (vph)	142		160	153	142		2286	41		2081		
v/s Ratio Prot					c0.06		c0.39	0.00		0.24		
v/s Ratio Perm	0.00		0.00	c0.01								
v/c Ratio	0.04		0.01	0.14	0.74		0.60	0.12		0.41		
Uniform Delay, d1	21.3		21.2	21.5	23.6		5.4	25.1		5.8		
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2	0.1		0.0	0.4	18.1		0.5	1.3		0.6		
Delay (s)	21.4		21.2	21.9	41.7		5.8	26.4		6.4		
Level of Service	C		C	C	D		A	C		A		
Approach Delay (s)	21.3			21.9	8.4			6.5				
Approach LOS	C			C	A			A				
<b>Intersection Summary</b>												
HCM Average Control Delay	8.1			HCM Level of Service				A				
HCM Volume to Capacity ratio	0.57											
Actuated Cycle Length (s)	52.4			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	62.0%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖ ↗	↖ ↗		↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Volume (vph)	16	2	45	17	1	11	61	1093	133	97	868	30
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	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85	1.00	0.86	1.00		0.98	0.98		1.00	0.99	
Flt Protected	0.96	1.00	0.95	1.00	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1783	1583	1770	1605	1770		3482	3482		1770	3521	
Flt Permitted	0.74	1.00	0.77	1.00	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1377	1583	1433	1605	1770		3482	3521		1770	3521	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	2	47	18	1	12	64	1151	140	102	914	32
RTOR Reduction (vph)	0	0	42	0	11	0	14	0	0	4	0	0
Lane Group Flow (vph)	0	19	5	18	2	0	64	1277	0	102	942	0
Turn Type	Perm		Perm	Perm	Prot			Prot				
Protected Phases	4			8	5		2	1		6		
Permitted Phases	4		4	8								
Actuated Green, G (s)	5.2		5.2	5.2	4.2		24.7	4.2		24.7		
Effective Green, g (s)	5.2		5.2	5.2	4.2		24.7	4.2		24.7		
Actuated g/C Ratio	0.11		0.11	0.11	0.09		0.54	0.09		0.54		
Clearance Time (s)	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		
Lane Grp Cap (vph)	155		179	162	181		1866	161		1887		
v/s Ratio Prot					0.00		0.04	c0.37		0.06		c0.27
v/s Ratio Perm	c0.01		0.00	0.01								
v/c Ratio	0.12		0.03	0.11	0.01		0.40	0.68		0.63		0.50
Uniform Delay, d1	18.4		18.2	18.4	18.2		19.8	7.8		20.2		6.8
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.4		0.1	0.3	0.0		1.6	1.1		7.9		0.9
Delay (s)	18.8		18.3	18.7	18.2		21.4	8.9		28.1		7.7
Level of Service	B		B	B	B		C	A		C		A
Approach Delay (s)	18.4			18.5	9.5			9.7				
Approach LOS	B			B	A			A				
<b>Intersection Summary</b>												
HCM Average Control Delay	9.9			HCM Level of Service				A				
HCM Volume to Capacity ratio	0.60											
Actuated Cycle Length (s)	46.1			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	58.6%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔	↔	↔	↔	↔
Volume (vph)	3	0	2	28	0	5	3	941	86	40	876	4
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	
Lane Util. Factor	1.00		1.00		1.00		1.00		0.95		1.00	
Frt	0.95		1.00		0.85		1.00		0.99		1.00	
Fit Protected	0.97		0.95		1.00		0.95		1.00		0.95	
Satd. Flow (prot)	1711		1770		1583		1770		3495		1770	
Fit Permitted	0.97		1.00		1.00		0.95		1.00		0.95	
Satd. Flow (perm)	1711		1863		1583		1770		3495		1770	
Peak-hour factor, PHF	0.95		0.95		0.95		0.95		0.95		0.95	
Adj. Flow (vph)	3		2	29	0	5	3	991	91	42	922	4
RTOR Reduction (vph)	0		2	0	0	5	0	8	0	0	0	0
Lane Group Flow (vph)	0	3	0	29	0	0	3	1074	0	42	926	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8			8					
Actuated Green, G (s)		1.6					1.6	1.1	24.6		2.9	26.4
Effective Green, g (s)		1.6					1.6	1.1	24.6		2.9	26.4
Actuated g/C Ratio		0.04					0.04	0.03	0.60		0.07	0.64
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)		67		73			62	47	2092		125	2272
v/s Ratio Prot							0.00	c0.31		c0.02	0.26	
v/s Ratio Perm	0.00			c0.02		0.00						
v/c Ratio	0.05			0.40		0.00	0.06	0.51		0.34	0.41	
Uniform Delay, d1	19.0			19.3		19.0	19.5	4.8		18.2	3.6	
Progression Factor	1.00			1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3			3.5		0.0	0.6	0.2		1.6	0.1	
Delay (s)	19.3			22.8		19.0	20.1	5.0		19.8	3.7	
Level of Service	B			C		B	C	A		B	A	
Approach Delay (s)	19.3				22.2			5.0			4.4	
Approach LOS	B				C			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			5.0				HCM Level of Service			A		
HCM Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			41.1			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			50.4%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔	↔	↔	↔	↔
Volume (vph)	28	0	19	46	0	40	11	937	108	72	830	16
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	
Lane Util. Factor	1.00		1.00		1.00		1.00		0.95		1.00	
Frt	0.94		1.00		0.85		1.00		0.98		1.00	
Fit Protected	0.97		0.95		1.00		0.95		1.00		0.95	
Satd. Flow (prot)	1710		1770		1583		1770		3484		1770	
Fit Permitted	0.97		0.74		1.00		0.95		1.00		0.95	
Satd. Flow (perm)	1710		1380		1583		1770		3484		1770	
Peak-hour factor, PHF	0.95		0.95		0.95		0.95		0.95		0.95	
Adj. Flow (vph)	29		0	20	48		0	42	12	986	114	76
RTOR Reduction (vph)	0		18	0	0		0	37	0	14	0	2
Lane Group Flow (vph)	0	31	0	48	0	5	12	1086	0	76	889	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8			8					
Actuated Green, G (s)		5.4					5.4	1.4	22.8		4.2	25.6
Effective Green, g (s)		5.4					5.4	1.4	22.8		4.2	25.6
Actuated g/C Ratio		0.12					0.12	0.03	0.51		0.09	0.58
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)		208		168			193	56	1789		167	2035
v/s Ratio Prot							0.01	c0.31		0.04	c0.25	
v/s Ratio Perm	0.02			c0.03		0.00						
v/c Ratio	0.15			0.29		0.03	0.21	0.61		0.46	0.44	
Uniform Delay, d1	17.4			17.7		17.2	21.0	7.6		19.0	5.3	
Progression Factor	1.00			1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3			0.9		0.1	1.9	0.6		2.0	0.2	
Delay (s)	17.8			18.7		17.2	22.9	8.2		21.0	5.5	
Level of Service	B			B		B	C	A		C	A	
Approach Delay (s)	17.8				18.0			8.4			6.7	
Approach LOS	B				B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			8.2				HCM Level of Service			A		
HCM Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			44.4			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			56.0%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	41	48	817	66	256	924
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3486		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3486		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	43	51	860	69	269	973
RTOR Reduction (vph)	0	25	11	0	0	0
Lane Group Flow (vph)	43	26	918	0	269	973
Confl. Peds. (#/hr)				25		
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	3.0	12.4	15.0	9.4	28.4	
Effective Green, g (s)	3.0	12.4	15.0	9.4	28.4	
Actuated g/C Ratio	0.08	0.31	0.38	0.24	0.72	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	135	659	1327	422	2551	
v/s Ratio Prot	c0.02	0.01	c0.26	c0.15	0.27	
v/s Ratio Perm		0.01				
v/c Ratio	0.32	0.04	0.69	0.64	0.38	
Uniform Delay, d1	17.2	9.4	10.3	13.5	2.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.0	1.6	3.1	0.1	
Delay (s)	18.6	9.4	11.8	16.6	2.2	
Level of Service	B	A	B	B	A	
Approach Delay (s)	13.6		11.8		5.3	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	39.4	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  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	4	10	4	469	39	492	17	515	299	261	697	18
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frbp, ped/bikes	1.00	0.77	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1838	1215	1681	1698	1583	1770	3539	1470	1770	3522		
Fit Permitted	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1838	1215	1681	1698	1583	1770	3539	1470	1770	3522		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	11	4	494	41	518	18	542	315	275	734	19
RTOR Reduction (vph)	0	0	4	0	0	279	0	0	240	0	2	0
Lane Group Flow (vph)	0	15	0	267	268	239	18	542	75	275	751	0
Confl. Peds. (#/hr)				25					25			25
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		2.0	2.0	14.1	14.1	27.7	1.6	14.3	14.3	13.6	26.3	
Effective Green, g (s)		2.0	2.0	14.1	14.1	27.7	1.6	14.3	14.3	13.6	26.3	
Actuated g/C Ratio		0.03	0.03	0.23	0.23	0.46	0.03	0.24	0.24	0.23	0.44	
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	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		61	41	395	399	836	47	843	350	401	1544	
v/s Ratio Prot		c0.01		c0.16	0.16	0.06	0.01	c0.15		c0.16	0.21	
v/s Ratio Perm			0.00			0.09			0.05			
v/c Ratio		0.25	0.00	0.68	0.67	0.29	0.38	0.64	0.21	0.69	0.49	
Uniform Delay, d1		28.3	28.0	20.9	20.8	10.0	28.7	20.6	18.3	21.2	12.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.22	0.72	
Incremental Delay, d2		2.1	0.0	4.5	4.4	0.2	5.1	3.8	1.4	4.3	1.0	
Delay (s)		30.4	28.1	25.4	25.3	10.2	33.8	24.3	19.7	30.2	9.6	
Level of Service		C	C	C	C	B	C	C	B	C	A	
Approach Delay (s)		29.9			17.9			22.9			15.1	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕		↕	↕	↕	↕	↕	
Volume (vph)	19	192	319	277	17	17	450	296	219	97	313	24
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		
Lane Util. Factor	1.00	1.00	0.95	0.95			0.97	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	1.00	1.00	0.99			1.00	1.00	0.94	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	0.98			1.00	1.00	0.85	1.00	0.99	
Fit Protected	1.00	1.00	0.95	0.96			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1854	1583	1681	1665			3433	3539	1481	1770	3482	
Fit Permitted	1.00	1.00	0.95	0.96			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1854	1583	1681	1665			3433	3539	1481	1770	3482	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	202	336	292	18	18	474	312	231	102	329	25
RTOR Reduction (vph)	0	0	276	0	7	0	0	0	168	0	10	0
Lane Group Flow (vph)	0	222	60	164	157	0	474	312	63	102	344	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Perm	Split
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)		10.7	10.7	10.6	10.6		10.8	16.4	16.4	6.3	11.9	
Effective Green, g (s)		10.7	10.7	10.6	10.6		10.8	16.4	16.4	6.3	11.9	
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.18	0.27	0.27	0.10	0.20	
Clearance Time (s)		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		5.0	3.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		331	282	297	294		618	967	405	186	691	
v/s Ratio Prot		c0.12		c0.10	0.09		c0.14	0.09		0.06	c0.10	
v/s Ratio Perm			0.04					0.04				
v/c Ratio		0.67	0.21	0.55	0.53		0.77	0.32	0.16	0.55	0.50	
Uniform Delay, d1		23.0	21.1	22.5	22.4		23.4	17.4	16.5	25.5	21.4	
Progression Factor		1.00	1.00	1.00	1.00		0.79	0.70	0.87	1.00	1.00	
Incremental Delay, d2		5.3	0.4	2.2	1.9		5.4	0.7	0.7	3.3	2.6	
Delay (s)		28.3	21.4	24.8	24.3		24.0	12.8	15.1	28.8	24.0	
Level of Service		C	C	C	C		C	B	B	C	C	
Approach Delay (s)		24.2			24.5		18.5			25.0		
Approach LOS		C			C		B			C		C

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕		↕	↕	↕	↕	↕	
Volume (vph)	122	84	367	482	95	22	225	150	186	14	74	19
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			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.92		1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85		0.98	
Fit Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1810		1770	1863	1450		1806	
Fit Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.99	
Satd. Flow (perm)	1770	1863	1583	1770	1810		1770	1863	1450		1806	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	128	88	386	507	100	23	237	158	196	15	78	20
RTOR Reduction (vph)	0	0	204	0	11	0	0	0	159	0	11	0
Lane Group Flow (vph)	128	88	182	507	112	0	237	158	37	0	102	0
Confl. Peds. (#/hr)									25			
Turn Type	Prot		pm+ov	Prot		Split		Perm	Split		Split	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2					3				
Actuated Green, G (s)	6.5	7.7	19.8	20.2	21.4		12.1	12.1	12.1		7.5	
Effective Green, g (s)	6.5	7.7	19.8	20.2	21.4		12.1	12.1	12.1		7.5	
Actuated g/C Ratio	0.10	0.12	0.31	0.32	0.34		0.19	0.19	0.19		0.12	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	181	226	593	563	610		337	355	276		213	
v/s Ratio Prot	0.07	c0.05	0.06	c0.29	0.06		c0.13	0.08			c0.06	
v/s Ratio Perm			0.06					0.03				
v/c Ratio	0.71	0.39	0.31	0.90	0.18		0.70	0.45	0.14		0.48	
Uniform Delay, d1	27.6	25.7	16.6	20.7	14.9		24.0	22.7	21.4		26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	11.9	1.3	0.3	17.5	0.2		6.5	0.9	0.2		1.7	
Delay (s)	39.5	27.0	16.9	38.2	15.0		30.5	23.6	21.6		27.8	
Level of Service	D	C	B	D	B		C	C	C		C	
Approach Delay (s)		23.2			33.7		25.7				27.8	
Approach LOS		C			C		C				C	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	39	1433	61	50	725	70	54	9	61	72	7	5
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Flt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3518		1770	3539	1583		1786	1583		1781	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.75	1.00		0.73	1.00
Satd. Flow (perm)	1770	3518		1770	3539	1583		1398	1583		1359	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	1508	64	53	763	74	57	9	64	76	7	5
RTOR Reduction (vph)	0	4	0	0	0	34	0	0	47	0	0	4
Lane Group Flow (vph)	41	1568	0	53	763	40	0	66	17	0	83	1
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	3.7	44.2		3.7	44.2	44.2		21.0	21.0		21.0	21.0
Effective Green, g (s)	3.7	44.2		3.7	44.2	44.2		21.0	21.0		21.0	21.0
Actuated g/C Ratio	0.05	0.55		0.05	0.55	0.55		0.26	0.26		0.26	0.26
Clearance Time (s)	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
Lane Grp Cap (vph)	81	1922		81	1934	865		363	411		353	411
v/s Ratio Prot	0.02	c0.45		c0.03	0.22							
v/s Ratio Perm						0.03		0.05	0.01		c0.06	0.00
v/c Ratio	0.51	0.82		0.65	0.39	0.05		0.18	0.04		0.24	0.00
Uniform Delay, d1	37.7	15.0		38.0	10.6	8.5		23.3	22.4		23.6	22.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.9	2.8		17.4	0.1	0.0		1.1	0.2		1.6	0.0
Delay (s)	42.6	17.8		55.4	10.7	8.6		24.4	22.6		25.2	22.2
Level of Service	D	B		E	B	A		C	C		C	C
Approach Delay (s)	18.4				13.2				23.5		25.0	
Approach LOS	B				B				C		C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

AM Peak Hour - Short Term Cumulative plus Project Conditions  
 Town Center Specific Plan  
 City of Scotts Valley

Level of Service Computation Report  
 2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #18 Mt Hermon Road/Washington Mutual Access  
 \*\*\*\*\*

Average Delay (sec/veh): 28.6 Worst Case Level Of Service: F[1379.0]  
 \*\*\*\*\*

Street Name: Washington Mutual Access Mt Hermon Road  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include  
 Lanes: 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0

Volume Module:  
 Base Vol: 2 0 111 0 0 0 0 1475 22 162 683 0  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 2 0 111 0 0 0 0 1475 22 162 683 0  
 Added Vol: 0 0 0 40 0 3 6 83 0 0 89 31  
 PasserByVol: 0 0 0 6 0 3 6 -6 0 0 -3 3  
 Initial Fut: 2 0 111 46 0 6 12 1552 22 162 769 34  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 2 0 117 48 0 6 13 1634 23 171 809 36  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 FinalVolume: 2 0 117 48 0 6 13 1634 23 171 809 36

Critical Gap Module:  
 Critical Gp: 7.5 6.5 6.9 7.5 6.5 6.9 4.1 xxxx xxxxx 4.1 xxxx xxxxx  
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx

Capacity Module:  
 Cnflct Vol: 2416 2857 828 2011 2851 423 845 xxxx xxxxx 1657 xxxx xxxxx  
 Potent Cap.: 17 17 318 36 17 585 800 xxxx xxxxx 394 xxxx xxxxx  
 Move Cap.: 11 10 318 15 10 585 800 xxxx xxxxx 394 xxxx xxxxx  
 Volume/Cap: 0.19 0.00 0.37 3.29 0.00 0.01 0.02 xxxx xxxx 0.43 xxxx xxxx

Level Of Service Module:  
 2Way95thQ: xxxx xxxx xxxxx 6.9 xxxx xxxxx 0.0 xxxx xxxxx 2.1 xxxx xxxxx  
 Control Del:xxxxx xxxx xxxxx 1557 xxxx xxxxx 9.6 xxxx xxxxx 20.9 xxxx xxxxx  
 LOS by Move: \* \* \* F \* \* A \* \* C \* \*  
 Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT  
 Shared Cap.: xxxx 324 xxxxx xxxx xxxxx 585 xxxx xxxxx xxxxx xxxx xxxxx  
 SharedQueue:xxxxx 1.6 xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shrd ConDel:xxxxx 22.4 xxxxx xxxxx xxxxx 11.2 xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shared LOS: \* C \* \* \* B \* \* \* \* \*  
 ApproachDel: 22.4 1379.0 xxxxxx xxxxxx  
 ApproachLOS: C F \* \* \*

\*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

AM Peak Hour - Short Term Cumulative plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.210
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 57 1 92 0 1 0 0 7 10 99 21 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 57 1 92 0 1 0 0 7 10 99 21 1
Added Vol: 2 0 22 0 0 0 0 1 2 32 1 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 59 1 114 0 1 0 0 8 12 131 22 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 62 1 120 0 1 0 0 8 13 138 23 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 62 1 120 0 1 0 0 8 13 138 23 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 62 1 120 0 1 0 0 8 13 138 23 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.34 0.01 0.65 0.00 1.00 0.00 0.00 0.40 0.60 0.85 0.14 0.01
Final Sat.: 296 5 571 0 765 0 0 335 503 665 112 5
Capacity Analysis Module:
Vol/Sat: 0.21 0.21 0.21 xxxx 0.00 xxxx xxxx 0.03 0.03 0.21 0.21 0.21
Crit Moves: \*\*\*\*
Delay/Veh: 8.0 8.0 8.0 0.0 7.5 0.0 0.0 7.2 7.2 8.6 8.6 8.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.0 8.0 8.0 0.0 7.5 0.0 0.0 7.2 7.2 8.6 8.6 8.6
LOS by Move: A A A \* A \* A A A A
ApproachDel: 8.0 7.5 7.2 8.6
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 8.0 7.5 7.2 8.6
LOS by Appr: A A A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.2 0.2

AM Peak Hour - Short Term Cumulative plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 6.3 Worst Case Level Of Service: B[ 13.1]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1! 0 0 0
Volume Module:
Base Vol: 105 27 2 0 49 14 14 0 78 10 1 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 105 27 2 0 49 14 14 0 78 10 1 0
Added Vol: 23 1 0 0 4 3 1 0 29 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 128 28 2 0 53 17 15 0 107 10 1 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 135 29 2 0 56 18 16 0 113 11 1 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 135 29 2 0 56 18 16 0 113 11 1 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx xxxx xxxx 7.1 6.5 6.2 7.1 6.5 xxxx
FollowUpTim: 2.2 xxxx xxxx xxxx xxxx 3.5 4.0 3.3 3.5 4.0 xxxx
Capacity Module:
Cnflct Vol: 74 xxxx xxxx xxxx xxxx 365 366 65 421 374 xxxx
Potent Cap.: 1539 xxxx xxxx xxxx xxxx 595 566 1005 546 560 xxxx
Move Cap.: 1539 xxxx xxxx xxxx xxxx 551 512 1005 450 507 xxxx
Volume/Cap: 0.09 xxxx xxxx xxxx xxxx 0.03 0.00 0.11 0.02 0.00 xxxx
Level Of Service Module:
2Way95thQ: 0.3 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 7.6 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx 912 xxxx 455 xxxx
SharedQueue:xxxx xxxx xxxx xxxx xxxx xxxx 0.5 xxxx 0.1 xxxx
Shrd ConDel:xxxx xxxx xxxx xxxx xxxx 9.6 xxxx 13.1 xxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 9.6 13.1
ApproachLOS: \* \* A B
Note: Queue reported is the number of cars per lane.

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	12	579	1232	145	68	9
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	609	1297	153	72	9
RTOR Reduction (vph)	0	0	0	44	0	8
Lane Group Flow (vph)	13	609	1297	109	72	1
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.3	64.5	59.2	59.2	11.0	11.0
Effective Green, g (s)	1.3	64.5	59.2	59.2	11.0	11.0
Actuated g/C Ratio	0.02	0.77	0.71	0.71	0.13	0.13
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)	28	2656	1283	1122	233	209
v/s Ratio Prot	0.01	c0.18	c0.72		c0.04	
v/s Ratio Perm				0.07		0.00
v/c Ratio	0.46	0.23	1.01	0.10	0.31	0.01
Uniform Delay, d1	40.8	2.6	12.1	3.8	32.8	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.0	27.8	0.0	3.4	0.0
Delay (s)	52.4	2.7	40.0	3.8	36.2	31.5
Level of Service	D	A	D	A	D	C
Approach Delay (s)		3.7	36.2		35.7	
Approach LOS		A	D		D	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	19	621	19	229	1352	128	38	6	151	94	13	15
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3426		1770	3402			1785	1583		1785	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.73	1.00		0.72	1.00
Satd. Flow (perm)	1770	3426		1770	3402			1353	1583		1341	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	654	20	241	1423	135	40	6	159	99	14	16
RTOR Reduction (vph)	0	4	0	0	10	0	0	0	128	0	0	13
Lane Group Flow (vph)	20	670	0	241	1548	0	0	46	31	0	113	3
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4		8	8
Actuated Green, G (s)	1.3	20.2		11.3	30.2			10.5	10.5		10.5	10.5
Effective Green, g (s)	1.3	20.2		11.3	30.2			10.5	10.5		10.5	10.5
Actuated g/C Ratio	0.02	0.37		0.21	0.56			0.19	0.19		0.19	0.19
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)	43	1282		370	1903			263	308		261	308
v/s Ratio Prot	0.01	0.20		c0.14	c0.46						c0.08	0.00
v/s Ratio Perm							0.03	0.02				
v/c Ratio	0.47	0.52		0.65	0.81			0.17	0.10		0.43	0.01
Uniform Delay, d1	26.0	13.1		19.5	9.6			18.1	17.9		19.1	17.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	7.8	0.4		4.1	2.8			0.3	0.1		1.2	0.0
Delay (s)	33.8	13.5		23.6	12.4			18.5	18.0		20.3	17.6
Level of Service	C	B		C	B			B	B		C	B
Approach Delay (s)		14.1			13.9			18.1			19.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	167	1002	4	125	1597	260	39	23	84	312	24	315
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3437		1770	3438	1583		1806	1583		1780	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.54	1.00		0.69	1.00
Satd. Flow (perm)	1770	3437		1770	3438	1583		1003	1583		1293	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	1055	4	132	1681	274	41	24	88	328	25	332
RTOR Reduction (vph)	0	0	0	0	0	106	0	0	63	0	0	146
Lane Group Flow (vph)	176	1059	0	132	1681	168	0	65	25	0	353	186
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	12.0	58.4		13.3	59.7	59.7		32.3	32.3		32.3	32.3
Effective Green, g (s)	12.0	58.4		13.3	59.7	59.7		32.3	32.3		32.3	32.3
Actuated g/C Ratio	0.10	0.50		0.11	0.51	0.51		0.28	0.28		0.28	0.28
Clearance Time (s)	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
Lane Grp Cap (vph)	183	1730		203	1769	815		279	441		360	441
v/s Ratio Prot	c0.10	0.31		0.07	c0.49						c0.27	0.12
v/s Ratio Perm						0.11		0.06	0.02			0.12
v/c Ratio	0.96	0.61		0.65	0.95	0.21		0.23	0.06		0.98	0.42
Uniform Delay, d1	51.8	20.7		49.1	26.7	15.3		32.3	30.7		41.5	34.2
Progression Factor	1.00	1.00		1.24	0.64	0.95		1.00	1.00		1.00	1.00
Incremental Delay, d2	55.1	1.6		3.7	7.4	0.3		0.4	0.1		42.0	0.7
Delay (s)	106.9	22.3		64.6	24.4	14.8		32.7	30.7		83.6	34.9
Level of Service	F	C		E	C	B		C	C		F	C
Approach Delay (s)	34.4			25.7				31.6			60.0	
Approach LOS	C			C				C			E	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	50	1326	14	41	1890	294	8	0	13	173	4	55
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1770	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.43	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		801	1583		1351	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1396	15	43	1989	309	8	0	14	182	4	58
RTOR Reduction (vph)	0	0	0	0	0	78	0	0	11	0	0	47
Lane Group Flow (vph)	53	1411	0	43	1989	231	0	8	3	0	186	11
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases						6	4		4	4		4
Actuated Green, G (s)	7.7	75.7		7.2	75.2	75.2		21.1	21.1		21.1	21.1
Effective Green, g (s)	7.7	75.7		7.2	75.2	75.2		21.1	21.1		21.1	21.1
Actuated g/C Ratio	0.07	0.65		0.06	0.65	0.65		0.18	0.18		0.18	0.18
Clearance Time (s)	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
Lane Grp Cap (vph)	117	2241		110	2229	1026		146	288		246	288
v/s Ratio Prot	c0.03	0.41		0.02	c0.58						c0.14	0.01
v/s Ratio Perm						0.15		0.01	0.00			0.01
v/c Ratio	0.45	0.63		0.39	0.89	0.23		0.05	0.01		0.76	0.04
Uniform Delay, d1	52.1	11.9		52.3	17.0	8.4		39.2	38.9		45.0	39.1
Progression Factor	1.31	0.70		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	1.0		2.3	6.0	0.5		0.2	0.0		12.4	0.1
Delay (s)	70.2	9.3		54.6	23.0	8.9		39.4	38.9		57.4	39.1
Level of Service	E	A		D	C	A		D	D		E	D
Approach Delay (s)	11.5			21.7				39.1			53.1	
Approach LOS	B			C				D			D	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	587	1027	109	224	1485	462	159	95	122	540	104	637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3362		1770	3438	1478	1681	1746	1478	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3362		1770	3438	1478	1681	1746	1478	3433	1863	1550
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	605	1059	112	231	1531	476	164	98	126	557	107	657
RTOR Reduction (vph)	0	6	0	0	180	0	0	109	0	0	0	0
Lane Group Flow (vph)	605	1165	0	231	1531	296	128	134	17	557	107	657
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	23.7	54.7		19.5	50.5	50.5	17.3	17.3	17.3	22.0	22.0	130.0
Effective Green, g (s)	23.7	54.7		19.5	50.5	50.5	17.3	17.3	17.3	22.0	22.0	130.0
Actuated g/C Ratio	0.18	0.42		0.15	0.39	0.39	0.13	0.13	0.13	0.17	0.17	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	626	1415		266	1336	574	224	232	197	581	315	1550
v/s Ratio Prot	c0.18	0.35		0.13	c0.45		0.08	c0.08		c0.16	0.06	
v/s Ratio Perm						0.20			0.01			0.42
v/c Ratio	0.97	0.82		0.87	1.15	0.52	0.57	0.58	0.09	0.96	0.34	0.42
Uniform Delay, d1	52.8	33.4		54.0	39.8	30.4	52.9	52.9	49.4	53.5	47.6	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
Incremental Delay, d2	27.5	5.5		24.5	75.0	3.3	3.5	3.5	0.2	27.0	0.6	0.9
Delay (s)	80.2	38.9		78.5	114.7	33.7	56.4	56.4	49.6	80.5	48.2	0.9
Level of Service	F	D		E	F	C	E	E	D	F	D	A
Approach Delay (s)		53.0			93.7			54.2				38.3
Approach LOS		D			F			D				D

Intersection Summary

HCM Average Control Delay	65.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	187	1464	16	8	1855	132	5	3	20	130	0	153
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	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.97	1.00	0.97	1.00	0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583	1806	1583	1681	1681	1681	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.89	1.00	0.75	0.75	0.75	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583	1656	1583	1332	1332	1332	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	193	1509	16	8	1912	136	5	3	21	134	0	158
RTOR Reduction (vph)	0	1	0	0	0	41	0	0	18	0	0	135
Lane Group Flow (vph)	193	1524	0	8	1912	95	0	8	3	67	67	23
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	16.3	86.0		1.4	71.1	71.1	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	16.3	86.0		1.4	71.1	71.1	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.14	0.74		0.01	0.61	0.61	0.14	0.14	0.14	0.14	0.14	0.14
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)	249	2546		21	2107	970	237	227	191	191	191	227
v/s Ratio Prot	c0.11	0.44		0.00	c0.56		0.00	0.00	c0.05	0.05	0.01	
v/s Ratio Perm						0.06						0.01
v/c Ratio	0.78	0.60		0.38	0.91	0.10	0.03	0.01	0.35	0.35	0.10	0.10
Uniform Delay, d1	48.1	7.0		56.9	19.6	9.2	42.8	42.7	44.8	44.8	43.2	43.2
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	14.0	1.0		11.2	7.1	0.2	0.1	0.0	1.1	1.1	0.2	0.2
Delay (s)	62.0	8.0		68.0	26.7	9.4	42.9	42.7	46.0	46.0	43.4	43.4
Level of Service	E	A		E	C	A	D	D	D	D	D	D
Approach Delay (s)		14.1			25.7		42.7					44.6
Approach LOS		B			C		D					D

Intersection Summary

HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	7	↑	↑↑
Volume (vph)	0	1289	262	183	1140	0	296	0	243	7	104	556
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1857	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2470		1583		1857	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1329	270	189	1175	0	305	0	251	7	107	573
RTOR Reduction (vph)	0	0	170	0	0	0	0	0	184	0	0	31
Lane Group Flow (vph)	0	1329	100	189	1175	0	305	0	67	0	114	542
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4	4		
Permitted Phases		2			8		18				4	
Actuated Green, G (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Effective Green, g (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Actuated g/C Ratio		0.34	0.34	0.09	0.48		0.13		0.27		0.26	0.26
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)		1184	545	157	1691		329		422		475	393
v/s Ratio Prot		c0.39		c0.11	0.33						0.06	
v/s Ratio Perm			0.06				c0.12		0.04			c0.35
v/c Ratio		1.12	0.18	1.20	0.69		0.93		0.16		0.24	1.38
Uniform Delay, d1		29.5	20.6	41.0	18.4		38.6		25.3		26.6	33.5
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		66.6	0.2	137.0	1.3		31.1		0.2		0.3	185.6
Delay (s)		96.1	20.8	178.0	19.6		69.7		25.4		26.8	219.1
Level of Service		F	C	F	B		E		C		C	F
Approach Delay (s)		83.4			41.6			49.7			187.2	
Approach LOS		F			D			D			F	

Intersection Summary

HCM Average Control Delay	82.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑↑	↑
Volume (vph)	155	111	149	914	1230	187
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1512
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1512
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	163	117	157	962	1295	197
RTOR Reduction (vph)	0	97	0	0	0	80
Lane Group Flow (vph)	163	20	157	962	1295	117
Confl. Peds. (#/hr)	30	30				30
Turn Type	Perm	Prot			Perm	
Protected Phases	4	5	2	6		
Permitted Phases	4				6	
Actuated Green, G (s)	19.7	19.7	15.6	88.3	68.7	68.7
Effective Green, g (s)	19.7	19.7	15.6	88.3	68.7	68.7
Actuated g/C Ratio	0.17	0.17	0.13	0.76	0.59	0.59
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)	301	255	238	2694	3012	895
v/s Ratio Prot	c0.09		c0.09	0.27	c0.25	
v/s Ratio Perm		0.01				0.08
v/c Ratio	0.54	0.08	0.66	0.36	0.43	0.13
Uniform Delay, d1	44.0	40.5	47.7	4.5	12.9	10.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	6.5	0.4	0.4	0.3
Delay (s)	46.0	40.6	54.1	4.9	13.4	10.8
Level of Service	D	D	D	A	B	B
Approach Delay (s)	43.8			11.8	13.0	
Approach LOS	D			B	B	

Intersection Summary

HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (vph)	31	0	99	15	0	5	91	872	5	40	1296	15
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.97	1.00		1.00	1.00		1.00	1.00	
Fit Protected	0.95	1.00		0.96	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1737	1770		3536	3536		1770	3533	
Fit Permitted	0.78	1.00		0.76	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1461	1583		1362	1770		3536	3536		1770	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	0	104	16	0	5	96	918	5	42	1364	16
RTOR Reduction (vph)	0	0	92	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	33	12	0	17	0	96	923	0	42	1379	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.1	5.1		5.1		4.1	26.1		2.6	24.6	
Effective Green, g (s)		5.1	5.1		5.1		4.1	26.1		2.6	24.6	
Actuated g/C Ratio		0.11	0.11		0.11		0.09	0.57		0.06	0.54	
Clearance Time (s)		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	
Lane Grp Cap (vph)	163	176		152	158		2015	100		1898		
v/s Ratio Prot							c0.05	0.26		0.02	c0.39	
v/s Ratio Perm	c0.02	0.01		0.01								
v/c Ratio	0.20	0.07		0.11			0.61	0.46		0.42	0.73	
Uniform Delay, d1	18.5	18.2		18.3			20.1	5.7		20.9	8.0	
Progression Factor	1.00	1.00		1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.2		0.3			6.5	0.2		2.8	2.5	
Delay (s)	19.1	18.4		18.6			26.5	5.9		23.7	10.5	
Level of Service	B	B		B			C	A		C	B	
Approach Delay (s)	18.6			18.6			7.8			10.9		
Approach LOS	B			B			A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay		10.2					HCM Level of Service			B		
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		45.8					Sum of lost time (s)			12.0		
Intersection Capacity Utilization		63.0%					ICU Level of Service			B		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (vph)	32	1	53	112	2	80	47	860	35	14	1221	5
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	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85	1.00	0.85	1.00		1.00	0.99		1.00	1.00	
Fit Protected	0.95	1.00	0.95	1.00	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1776	1583	1770	1590	1770		3518	3518		1770	3537	
Fit Permitted	0.71	1.00	0.73	1.00	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1320	1583	1368	1590	1770		3518	3518		1770	3537	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1	56	118	2	84	49	905	37	15	1285	5
RTOR Reduction (vph)	0	0	46	0	69	0	4	0	0	0	1	0
Lane Group Flow (vph)	0	35	10	118	17	0	49	938	0	15	1289	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7	
Effective Green, g (s)		8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7	
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.07	0.54		0.03	0.49	
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)	236	283	245	284	130		1888			46	1730	
v/s Ratio Prot					0.01		0.03	c0.27		0.01	c0.36	
v/s Ratio Perm	0.03	0.01	c0.09									
v/c Ratio	0.15	0.04	0.48	0.06			0.38	0.50		0.33	0.75	
Uniform Delay, d1	16.1	15.7	17.1	15.8			20.5	6.8		22.2	9.5	
Progression Factor	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1	1.5	0.1			1.8	0.2		4.1	3.0	
Delay (s)	16.4	15.8	18.6	15.9			22.3	7.0		26.3	12.5	
Level of Service	B	B	B	B			C	A		C	B	
Approach Delay (s)	16.0			17.5			7.8			12.7		
Approach LOS	B			B			A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay		11.3					HCM Level of Service			B		
HCM Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		46.4					Sum of lost time (s)			8.0		
Intersection Capacity Utilization		60.6%					ICU Level of Service			B		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔	↔	↔		↔	↔	
Volume (vph)	10	0	7	81	0	18	5	811	12	17	991	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	4.0
Lane Util. Factor	1.00		1.00		1.00	1.00	0.95	1.00	0.95	1.00	0.95	
Frt	0.95		1.00		0.85	1.00	1.00	1.00	1.00	1.00	1.00	
Fit Protected	0.97		0.95		1.00	0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1713		1770		1583	1770	3531	1770	3535	1770	3535	
Fit Permitted	0.97		0.75		1.00	0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	1713		1389		1583	1770	3531	1770	3535	1770	3535	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	0	7	85	0	19	5	854	13	18	1043	8
RTOR Reduction (vph)	0	6	0	0	0	16	0	1	0	0	0	0
Lane Group Flow (vph)	0	12	0	85	0	3	5	866	0	18	1051	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		6.0				6.0	1.1	21.1		1.1	21.1	
Effective Green, g (s)		6.0				6.0	1.1	21.1		1.1	21.1	
Actuated g/C Ratio		0.15				0.15	0.03	0.52		0.03	0.52	
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)		256		207		236	48	1853		48	1855	
v/s Ratio Prot							0.00	0.25		c0.01	c0.30	
v/s Ratio Perm	0.01		c0.06			0.00						
v/c Ratio	0.05		0.41			0.01	0.10	0.47		0.38	0.57	
Uniform Delay, d1	14.7		15.5			14.6	19.1	6.0		19.2	6.5	
Progression Factor	1.00		1.00			1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1		1.3			0.0	1.0	0.2		4.9	0.4	
Delay (s)	14.7		16.8			14.6	20.0	6.2		24.1	6.9	
Level of Service	B		B			B	C	A		C	A	
Approach Delay (s)	14.7				16.4			6.3			7.1	
Approach LOS	B				B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		7.3					HCM Level of Service			A		
HCM Volume to Capacity ratio		0.53										
Actuated Cycle Length (s)		40.2					Sum of lost time (s)			12.0		
Intersection Capacity Utilization		44.5%					ICU Level of Service			A		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔	↔	↔		↔	↔	
Volume (vph)	38	0	26	98	0	137	29	782	57	42	788	42
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	1.00		1.00		1.00	1.00	0.95	1.00	0.99	1.00	0.99	
Frt	0.95		1.00		0.85	1.00	1.00	1.00	1.00	1.00	0.99	
Fit Protected	0.97		0.95		1.00	0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1710		1770		1583	1770	3503	1770	3512	1770	3512	
Fit Permitted	0.97		0.71		1.00	0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	1710		1329		1583	1770	3503	1770	3512	1770	3512	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	0	27	103	0	144	31	823	60	44	829	44
RTOR Reduction (vph)	0	22	0	0	0	115	0	10	0	0	6	0
Lane Group Flow (vph)	0	45	0	103	0	29	31	873	0	44	867	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)		8.0				8.0	1.3	17.5		2.5	18.7	
Effective Green, g (s)		8.0				8.0	1.3	17.5		2.5	18.7	
Actuated g/C Ratio		0.20				0.20	0.03	0.44		0.06	0.47	
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)		342		266		317	58	1533		111	1642	
v/s Ratio Prot							0.02	c0.25		0.02	c0.25	
v/s Ratio Perm	0.03		c0.08			0.02						
v/c Ratio	0.13		0.39			0.09	0.53	0.57		0.40	0.53	
Uniform Delay, d1	13.1		13.9			13.0	19.1	8.4		18.0	7.5	
Progression Factor	1.00		1.00			1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2		0.9			0.1	9.1	0.5		2.3	0.3	
Delay (s)	13.3		14.8			13.2	28.2	8.9		20.3	7.8	
Level of Service	B		B			B	C	A		C	A	
Approach Delay (s)	13.3				13.8			9.6			8.4	
Approach LOS	B				B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		9.7					HCM Level of Service			A		
HCM Volume to Capacity ratio		0.54										
Actuated Cycle Length (s)		40.0					Sum of lost time (s)			12.0		
Intersection Capacity Utilization		50.2%					ICU Level of Service			A		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	150	168	912	122	190	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3457		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3457		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	177	960	128	200	738
RTOR Reduction (vph)	0	17	18	0	0	0
Lane Group Flow (vph)	158	160	1070	0	200	738
Confl. Peds. (#/hr)				25		
Turn Type	pm+ov		Prot			
Protected Phases	6	7	8	7		4
Permitted Phases	6					
Actuated Green, G (s)	7.3	13.5	18.8	6.2		29.0
Effective Green, g (s)	7.3	13.5	18.8	6.2		29.0
Actuated g/C Ratio	0.16	0.30	0.42	0.14		0.65
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	292	625	1467	248	2317	
v/s Ratio Prot	c0.09	0.04	c0.31	c0.11		0.21
v/s Ratio Perm	0.07					
v/c Ratio	0.54	0.26	0.73	0.81		0.32
Uniform Delay, d1	17.0	11.6	10.6	18.5		3.3
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	2.0	0.2	1.8	17.2		0.1
Delay (s)	19.0	11.8	12.5	35.6		3.4
Level of Service	B	B	B	D		A
Approach Delay (s)	15.2		12.5		10.3	
Approach LOS	B		B		B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	29	33	15	333	4	375	8	631	566	226	504	7
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Fit Protected	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1820	1448	1681	1687	1583	1770	3539	1479	1770	3530		
Fit Permitted	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1820	1448	1681	1687	1583	1770	3539	1479	1770	3530		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	35	16	351	4	395	8	664	596	238	531	7
RTOR Reduction (vph)	0	0	14	0	0	251	0	0	436	0	1	0
Lane Group Flow (vph)	0	66	2	179	176	144	8	664	160	238	537	0
Confl. Peds. (#/hr)				25							25	
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7	8	8	1	5	2	2	1	6		
Permitted Phases	7											
Actuated Green, G (s)	6.0	6.0	11.1	11.1	21.9	1.6	16.1	16.1	10.8	25.3		
Effective Green, g (s)	6.0	6.0	11.1	11.1	21.9	1.6	16.1	16.1	10.8	25.3		
Actuated g/C Ratio	0.10	0.10	0.18	0.18	0.36	0.03	0.27	0.27	0.18	0.42		
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	5.0	5.0	3.0	5.0		
Lane Grp Cap (vph)	182	145	311	312	683	47	950	397	319	1488		
v/s Ratio Prot	c0.04		c0.11	0.10	0.04	0.00	c0.19		c0.13	0.15		
v/s Ratio Perm	0.00											
v/c Ratio	0.36	0.01	0.58	0.56	0.21	0.17	0.70	0.40	0.75	0.36		
Uniform Delay, d1	25.2	24.3	22.3	22.2	13.1	28.6	19.8	18.0	23.3	11.8		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.63		
Incremental Delay, d2	1.2	0.0	2.6	2.3	0.2	1.7	4.3	3.0	8.3	0.6		
Delay (s)	26.4	24.4	24.9	24.6	13.3	30.3	24.0	21.0	31.6	8.0		
Level of Service	C	C	C	C	B	C	C	C	C	A		
Approach Delay (s)	26.0			18.7			22.7			15.3		
Approach LOS	C			B			C			B		

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	10	104	242	281	54	49	394	230	326	60	167	11
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	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frbp, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.94	1.00	0.99	1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.96	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1854	1583	1681	1640	3433	3539	1487	1770	3486			
Fit Permitted	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1854	1583	1681	1640	3433	3539	1487	1770	3486			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	109	255	296	57	52	415	242	343	63	176	12
RTOR Reduction (vph)	0	0	211	0	21	0	0	240	0	8	0	0
Lane Group Flow (vph)	0	120	44	204	180	0	415	242	103	63	180	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot			
Protected Phases	4	4		8	8	5	2		1	6		
Permitted Phases			4					2				
Actuated Green, G (s)		10.3	10.3	11.0	11.0		11.6	18.0	18.0	4.7	11.1	
Effective Green, g (s)		10.3	10.3	11.0	11.0		11.6	18.0	18.0	4.7	11.1	
Actuated g/C Ratio		0.17	0.17	0.18	0.18		0.19	0.30	0.30	0.08	0.18	
Clearance Time (s)		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		5.0	3.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		318	272	308	301		664	1062	446	139	645	
v/s Ratio Prot		c0.06		c0.12	0.11		c0.12	0.07		c0.04	c0.05	
v/s Ratio Perm			0.03					0.07				
v/c Ratio		0.38	0.16	0.66	0.60		0.62	0.23	0.23	0.45	0.28	
Uniform Delay, d1		22.0	21.2	22.8	22.5		22.2	15.8	15.8	26.4	21.0	
Progression Factor		1.00	1.00	1.00	1.00		0.72	0.55	1.04	1.00	1.00	
Incremental Delay, d2		0.8	0.3	5.3	3.2		2.0	0.4	0.9	2.3	1.1	
Delay (s)		22.8	21.4	28.0	25.6		18.0	9.1	17.4	28.8	22.1	
Level of Service		C	C	C	C		B	A	B	C	C	
Approach Delay (s)		21.9			26.9			15.6			23.8	
Approach LOS		C			C			B			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			20.0			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			60.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			52.2%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	26	152	307	235	17	2	357	70	368	10	98	18
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.85	0.98	1.00	0.98	0.98
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1835	1770	1863	1474	1819			
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1835	1770	1863	1474	1819			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	160	323	247	18	2	376	74	387	11	103	19
RTOR Reduction (vph)	0	0	187	0	1	0	0	0	291	0	10	0
Lane Group Flow (vph)	27	160	136	247	19	0	376	74	96	0	123	0
Confl. Peds. (#/hr)									25			
Turn Type	Prot		pm+ov	Prot		Split		Perm	Split			
Protected Phases	5	2	3	1	6	3	3		4	4		
Permitted Phases			2					3				
Actuated Green, G (s)	1.4	9.8	23.9	9.4	17.8	14.1	14.1	14.1		7.5		
Effective Green, g (s)	1.4	9.8	23.9	9.4	17.8	14.1	14.1	14.1		7.5		
Actuated g/C Ratio	0.02	0.17	0.42	0.17	0.31	0.25	0.25	0.25		0.13		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0		
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)	44	321	778	293	575	439	462	366		240		
v/s Ratio Prot	0.02	c0.09	0.04	c0.14	0.01	c0.21	0.04			c0.07		
v/s Ratio Perm			0.04					0.07				
v/c Ratio	0.61	0.50	0.17	0.84	0.03	0.86	0.16	0.26		0.51		
Uniform Delay, d1	27.4	21.3	10.3	23.0	13.5	20.4	16.7	17.2		22.9		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00		
Incremental Delay, d2	22.8	1.4	0.1	19.3	0.0	15.1	0.2	0.4		1.8		
Delay (s)	50.2	22.7	10.4	42.3	13.6	35.5	16.9	17.6		24.8		
Level of Service	D	C	B	D	B	D	B	B		C		
Approach Delay (s)		16.4			40.1		25.5				24.8	
Approach LOS		B			D		C				C	
<b>Intersection Summary</b>												
HCM Average Control Delay			25.0			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			56.8			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			57.8%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	66	853	56	68	1679	169	155	22	66	193	17	39
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.96	1.00	0.96	1.00	0.96	1.00	0.96
Satd. Flow (prot)	1770	3506	1770	3539	1583	1785	1583	1781	1583	1781	1583	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.51	1.00	0.56	1.00	0.56	1.00	0.56
Satd. Flow (perm)	1770	3506	1770	3539	1583	951	1583	1049	1583	1049	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	898	59	72	1767	178	163	23	69	203	18	41
RTOR Reduction (vph)	0	7	0	0	0	87	0	0	51	0	0	31
Lane Group Flow (vph)	69	950	0	72	1767	91	0	186	18	0	221	10
Turn Type	Prot		Prot		Perm	Perm	Perm	Perm	Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2		6	
Permitted Phases						8	2		2		6	6
Actuated Green, G (s)	2.8	31.6		3.4	32.2	32.2		16.1	16.1		16.1	16.1
Effective Green, g (s)	2.8	31.6		3.4	32.2	32.2		16.1	16.1		16.1	16.1
Actuated g/C Ratio	0.04	0.50		0.05	0.51	0.51		0.26	0.26		0.26	0.26
Clearance Time (s)	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
Lane Grp Cap (vph)	79	1756		95	1806	808		243	404		268	404
v/s Ratio Prot	0.04	0.27		c0.04	c0.50							
v/s Ratio Perm						0.06		0.20	0.01		c0.21	0.01
v/c Ratio	0.87	0.54		0.76	0.98	0.11		0.77	0.04		0.82	0.03
Uniform Delay, d1	30.0	10.8		29.4	15.1	8.0		21.8	17.7		22.2	17.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	60.4	0.3		28.6	16.1	0.1		20.3	0.2		24.2	0.1
Delay (s)	90.4	11.1		58.1	31.3	8.1		42.0	17.9		46.3	17.7
Level of Service	F	B		E	C	A		D	B		D	B
Approach Delay (s)		16.5			30.2			35.5			41.9	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

PM Peak Hour - Short Term Cumulative plus Project Conditions  
 Town Center Specific Plan  
 City of Scotts Valley

Level of Service Computation Report  
 2000 HCM Unsignalized Method (Future Volume Alternative)  
 \*\*\*\*\*  
 Intersection #18 Mt Hermon Road/Washington Mutual Access  
 \*\*\*\*\*  
 Average Delay (sec/veh): 1628.7 Worst Case Level Of Service: F[40412.2]  
 \*\*\*\*\*  
 Street Name: Washington Mutual Access Mt Hermon Road  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include  
 Lanes: 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  
 Volume Module:  
 Base Vol: 13 0 184 0 0 0 0 890 45 294 1567 0  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 13 0 184 0 0 0 0 890 45 294 1567 0  
 Added Vol: 0 0 0 111 0 7 15 204 0 0 222 76  
 PasserByVol: 0 0 0 14 0 10 14 -14 0 0 -10 10  
 Initial Fut: 13 0 184 125 0 17 29 1080 45 294 1779 86  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 14 0 194 132 0 18 31 1137 47 309 1873 91  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 FinalVolume: 14 0 194 132 0 18 31 1137 47 309 1873 91  
 Critical Gap Module:  
 Critical Gp: 7.5 6.5 6.9 7.5 6.5 6.9 4.1 xxxx xxxxx 4.1 xxxx xxxxx  
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx  
 Capacity Module:  
 Cnflct Vol: 2777 3804 592 3166 3782 982 1963 xxxx xxxxx 1184 xxxx xxxxx  
 Potent Cap.: 9 4 454 5 4 252 300 xxxx xxxxx 597 xxxx xxxxx  
 Move Cap.: 5 2 454 1 2 252 300 xxxx xxxxx 597 xxxx xxxxx  
 Volume/Cap: 2.93 0.00 0.43 92.06 0.00 0.07 0.10 xxxx xxxx 0.52 xxxx xxxxx  
 Level Of Service Module:  
 2Way95thQ: xxxx xxxx xxxxx 18.9 xxxx xxxxx 0.3 xxxx xxxxx 3.0 xxxx xxxxx  
 Control Del:xxxxx xxxx xxxxx 45906 xxxx xxxxx 18.3 xxxx xxxxx 17.3 xxxx xxxxx  
 LOS by Move: \* \* \* \* \* F \* \* \* \* \* C \* \* \* \* \* C \* \* \* \* \*  
 Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT  
 Shared Cap.: xxxx 69 xxxxx xxxx xxxxx 252 xxxx xxxxx xxxxx xxxx xxxxx  
 SharedQueue:xxxxx 21.0 xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shrd ConDel:xxxxx 1035 xxxxx xxxxx xxxxx 20.4 xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shared LOS: \* F \* \* \* \* \* C \* \* \* \* \* \* \* \* \* \*  
 ApproachDel: 1034.6 xxxxxx xxxxxx xxxxxx  
 ApproachLOS: F F \* \* \* \* \*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

PM Peak Hour - Short Term Cumulative plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.291
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.8
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0
Volume Module:
Base Vol: 44 0 108 0 0 0 0 31 97 107 25 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 44 0 108 0 0 0 0 31 97 107 25 1
Added Vol: 5 0 65 0 0 0 0 4 6 55 3 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 49 0 173 0 0 0 0 35 103 162 28 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 52 0 182 0 0 0 0 37 108 171 29 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 52 0 182 0 0 0 0 37 108 171 29 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 52 0 182 0 0 0 0 37 108 171 29 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.22 0.00 0.78 0.00 1.00 0.00 0.00 0.25 0.75 0.85 0.14 0.01
Final Sat.: 177 0 626 0 669 0 0 206 608 621 107 4
Capacity Analysis Module:
Vol/Sat: 0.29 xxxx 0.29 xxxx 0.00 xxxx xxxx 0.18 0.18 0.27 0.27 0.27
Crit Moves: \*\*\*\*
Delay/Veh: 8.8 0.0 8.8 0.0 0.0 0.0 0.0 8.0 8.0 9.4 9.4 9.4
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.8 0.0 8.8 0.0 0.0 0.0 0.0 8.0 8.0 9.4 9.4 9.4
LOS by Move: A \* A \* \* \* \* A A A A A
ApproachDel: 8.8 xxxxxx 8.0 9.4
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 8.8 xxxxxx 8.0 9.4
LOS by Appr: A \* A A A
AllWayAvgQ: 0.4 0.4 0.4 0.0 0.0 0.0 0.2 0.2 0.2 0.3 0.3 0.3

PM Peak Hour - Short Term Cumulative plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 7.6 Worst Case Level Of Service: C[ 15.0]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 124 40 3 0 41 23 29 3 139 2 6 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 124 40 3 0 41 23 29 3 139 2 6 0
Added Vol: 61 5 0 0 3 2 3 0 61 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 185 45 3 0 44 25 32 3 200 2 6 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 195 47 3 0 46 26 34 3 211 2 6 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 195 47 3 0 46 26 34 3 211 2 6 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx xxxx xxxx 7.1 6.5 6.2 7.1 6.5 xxxx
FollowUpTim: 2.2 xxxx xxxx xxxx xxxx 3.5 4.0 3.3 3.5 4.0 xxxx
Capacity Module:
Cnflct Vol: 73 xxxx xxxx xxxx xxxx 501 499 59 605 511 xxxx
Potent Cap.: 1540 xxxx xxxx xxxx xxxx 484 476 1012 413 469 xxxx
Move Cap.: 1540 xxxx xxxx xxxx xxxx 426 408 1012 290 402 xxxx
Volume/Cap: 0.13 xxxx xxxx xxxx xxxx 0.08 0.01 0.21 0.01 0.02 xxxx
Level Of Service Module:
2Way95thQ: 0.4 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 7.7 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx 839 xxxx 367 xxxx xxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 1.2 xxxxx 0.1 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 11.1 xxxxx 15.0 xxxx xxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 11.1 15.0
ApproachLOS: \* \* \* \* \* B C \* \* \*
Note: Queue reported is the number of cars per lane.



HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	576	1230	120	121	1364	397	159	80	109	428	70	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3367		1770	3438	1478	1681	1740	1478	3433	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3367		1770	3438	1478	1681	1740	1478	3433	1863	1550
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	594	1268	124	125	1406	409	164	82	112	441	72	599
RTOR Reduction (vph)	0	5	0	0	168	0	0	97	0	0	0	0
Lane Group Flow (vph)	594	1387	0	125	1406	241	121	125	15	441	72	599
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	25.5	61.7		14.3	50.5	50.5	17.1	17.1	17.1	20.4	20.4	130.0
Effective Green, g (s)	25.5	61.7		14.3	50.5	50.5	17.1	17.1	17.1	20.4	20.4	130.0
Actuated g/C Ratio	0.20	0.47		0.11	0.39	0.39	0.13	0.13	0.13	0.16	0.16	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	673	1598		195	1336	574	221	229	194	539	292	1550
v/s Ratio Prot	c0.17	0.41		0.07	c0.41		c0.07	0.07		c0.13	0.04	
v/s Ratio Perm						0.16			0.01			0.39
v/c Ratio	0.88	0.87		0.64	1.05	0.42	0.55	0.55	0.08	0.82	0.25	0.39
Uniform Delay, d1	50.8	30.5		55.4	39.8	29.0	52.8	52.8	49.5	53.0	48.1	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
Incremental Delay, d2	13.0	6.7		7.0	39.7	2.2	2.8	2.6	0.2	9.4	0.4	0.7
Delay (s)	63.8	37.2		62.4	79.4	31.3	55.6	55.5	49.7	62.4	48.5	0.7
Level of Service	E	D		E	E	C	E	E	D	E	D	A
Approach Delay (s)		45.2			68.2			53.7				28.3
Approach LOS		D			E			D				C
<b>Intersection Summary</b>												
HCM Average Control Delay	50.5			HCM Level of Service			D					
HCM Volume to Capacity ratio	0.90											
Actuated Cycle Length (s)	130.0			Sum of lost time (s)			16.5					
Intersection Capacity Utilization	83.4%			ICU Level of Service			E					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	0	1291	378	183	957	0	366	0	297	10	110	438
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		0.95	1.00	1.00	0.95		0.97		1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	1.00	1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583	1855	1538	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	1.00	1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2450		1583	1855	1538	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1331	390	189	987	0	377	0	306	10	113	452
RTOR Reduction (vph)	0	0	245	0	0	0	224	0	0	0	0	44
Lane Group Flow (vph)	0	1331	145	189	987	0	377	0	82	0	123	408
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%	2%	2%	5%
Turn Type			Perm	Prot			custom		custom	Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Effective Green, g (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Actuated g/C Ratio		0.34	0.34	0.09	0.48		0.13		0.27		0.26	0.26
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)		1184	545	157	1691		327		422		474	393
v/s Ratio Prot		c0.39		c0.11	0.28						0.07	
v/s Ratio Perm			0.09				c0.15		0.05			c0.27
v/c Ratio		1.12	0.27	1.20	0.58		1.15		0.19		0.26	1.04
Uniform Delay, d1		29.5	21.3	41.0	17.0		39.0		25.5		26.7	33.5
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		67.3	0.3	137.0	0.5		98.0		0.2		0.3	55.7
Delay (s)		96.8	21.6	178.0	17.5		137.0		25.7		27.0	89.2
Level of Service		F	C	F	B		F		C		C	F
Approach Delay (s)		79.7			43.3			87.1				75.9
Approach LOS		E			D			F				E
<b>Intersection Summary</b>												
HCM Average Control Delay	70.1			HCM Level of Service			E					
HCM Volume to Capacity ratio	1.11											
Actuated Cycle Length (s)	90.0			Sum of lost time (s)			16.0					
Intersection Capacity Utilization	74.0%			ICU Level of Service			D					
Analysis Period (min)	15											

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	15	1099	417	57	132	10
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1157	439	60	139	11
RTOR Reduction (vph)	0	0	0	35	0	8
Lane Group Flow (vph)	16	1157	439	25	139	3
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.2	22.4	17.2	17.2	11.2	11.2
Effective Green, g (s)	1.2	22.4	17.2	17.2	11.2	11.2
Actuated g/C Ratio	0.03	0.54	0.41	0.41	0.27	0.27
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)	51	1851	748	655	477	426
v/s Ratio Prot	0.01	c0.34	0.24		c0.08	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.31	0.63	0.59	0.04	0.29	0.01
Uniform Delay, d1	19.8	6.7	9.4	7.3	12.1	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.7	1.2	0.0	1.5	0.0
Delay (s)	23.3	7.3	10.6	7.3	13.6	11.2
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.6	10.2		13.4	
Approach LOS		A	B		B	

Intersection Summary	
HCM Average Control Delay	8.8
HCM Volume to Capacity ratio	0.51
Actuated Cycle Length (s)	41.6
Intersection Capacity Utilization	45.4%
Analysis Period (min)	15
HCM Level of Service	A
Sum of lost time (s)	8.0
ICU Level of Service	A

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

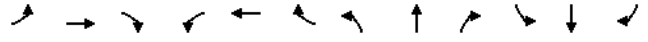
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	3	1152	27	106	451	28	16	6	168	95	6	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3429		1770	3414			1796	1583		1779	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81	1.00		0.72	1.00
Satd. Flow (perm)	1770	3429		1770	3414			1505	1583		1344	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	1213	28	112	475	29	17	6	177	100	6	3
RTOR Reduction (vph)	0	3	0	0	7	0	0	0	140	0	0	2
Lane Group Flow (vph)	3	1238	0	112	497	0	0	23	37	0	106	1
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4	8		8
Actuated Green, G (s)	1.3	21.2		5.9	25.8			10.5	10.5		10.5	10.5
Effective Green, g (s)	1.3	21.2		5.9	25.8			10.5	10.5		10.5	10.5
Actuated g/C Ratio	0.03	0.43		0.12	0.52			0.21	0.21		0.21	0.21
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)	46	1466		211	1776			319	335		285	335
v/s Ratio Prot	0.00	c0.36		c0.06	0.15						c0.08	0.00
v/s Ratio Perm							0.02	0.02				0.00
v/c Ratio	0.07	0.84		0.53	0.28			0.07	0.11		0.37	0.00
Uniform Delay, d1	23.6	12.7		20.5	6.7			15.7	15.8		16.7	15.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	4.7		2.6	0.1			0.1	0.1		0.8	0.0
Delay (s)	24.2	17.4		23.1	6.8			15.7	15.9		17.5	15.4
Level of Service	C	B		C	A			B	B		B	B
Approach Delay (s)		17.4			9.7			15.9			17.5	
Approach LOS		B			A			B			B	

Intersection Summary	
HCM Average Control Delay	15.1
HCM Volume to Capacity ratio	0.66
Actuated Cycle Length (s)	49.6
Intersection Capacity Utilization	61.4%
Analysis Period (min)	15
HCM Level of Service	B
Sum of lost time (s)	12.0
ICU Level of Service	B

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	129	1343	14	34	640	139	7	6	16	113	7	77
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1814	1583		1779	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.88	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		1642	1583		1357	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	1414	15	36	674	146	7	6	17	119	7	81
RTOR Reduction (vph)	0	0	0	0	0	56	0	0	14	0	0	68
Lane Group Flow (vph)	136	1429	0	36	674	90	0	13	3	0	126	13
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.2	80.1		5.4	71.3	71.3	18.5	18.5		18.5	18.5	
Effective Green, g (s)	14.2	80.1		5.4	71.3	71.3	18.5	18.5		18.5	18.5	
Actuated g/C Ratio	0.12	0.69		0.05	0.61	0.61	0.16	0.16		0.16	0.16	
Clearance Time (s)	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	
Lane Grp Cap (vph)	217	2371		82	2113	973	262	252		216	252	
v/s Ratio Prot	c0.08	c0.42		0.02	0.20					c0.09	0.01	
v/s Ratio Perm					0.06		0.01	0.00			c0.09	0.01
v/c Ratio	0.63	0.60		0.44	0.32	0.09	0.05	0.01		0.58	0.05	
Uniform Delay, d1	48.4	9.5		53.8	10.7	9.1	41.3	41.0		45.2	41.3	
Progression Factor	1.00	1.00		1.10	0.64	0.29	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.6	1.1		3.6	0.4	0.2	0.1	0.0		4.0	0.1	
Delay (s)	53.9	10.7		62.8	7.2	2.8	41.4	41.1		49.2	41.4	
Level of Service	D	B		E	A	A	D	D		D	D	
Approach Delay (s)	14.4			8.8			41.2			46.1		
Approach LOS	B			A			D			D		

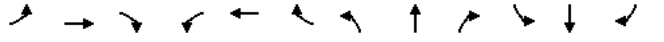
Intersection Summary

HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	32	1451	2	46	840	109	4	1	17	67	2	3
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3438		1770	3438	1583		1791	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.86	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3438	1583		1603	1583		1358	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1527	2	48	884	115	4	1	18	71	2	3
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	16	0	0	3
Lane Group Flow (vph)	34	1529	0	48	884	84	0	5	2	0	73	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases					6	4		4	4		4	4
Actuated Green, G (s)	5.3	82.6		7.4	84.7	84.7	14.0	14.0		14.0	14.0	
Effective Green, g (s)	5.3	82.6		7.4	84.7	84.7	14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.05	0.71		0.06	0.73	0.73	0.12	0.12		0.12	0.12	
Clearance Time (s)	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	
Lane Grp Cap (vph)	81	2448		113	2510	1156	193	191		164	191	
v/s Ratio Prot	0.02	c0.44		c0.03	0.26						c0.05	0.00
v/s Ratio Perm					0.05		0.00	0.00			c0.05	0.00
v/c Ratio	0.42	0.62		0.42	0.35	0.07	0.03	0.01		0.45	0.00	
Uniform Delay, d1	53.9	8.7		52.3	5.7	4.5	45.0	44.9		47.4	44.9	
Progression Factor	1.33	0.77		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	1.0		2.6	0.4	0.1	0.1	0.0		1.9	0.0	
Delay (s)	74.3	7.7		54.8	6.1	4.6	45.0	44.9		49.3	44.9	
Level of Service	E	A		D	A	A	D	D		D	D	
Approach Delay (s)	9.2			8.1			45.0			49.1		
Approach LOS	A			A			D			D		

Intersection Summary

HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕		
Volume (vph)	598	1075	30	107	547	601	65	148	168	654	108	265	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt	1.00	1.00		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	0.95	1.00	1.00	
Satd. Flow (prot)	3433	3419		1770	3438	1504	1681	1766	1504	3433	1863	1550	
Satd. Flow (perm)	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	610	1097	31	109	558	613	66	151	171	667	110	270	
RTOR Reduction (vph)	0	2	0	0	0	467	0	0	142	0	0	0	
Lane Group Flow (vph)	610	1126	0	109	558	146	59	158	29	667	110	270	
Confl. Peds. (#/hr)			30			30			30			30	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free	
Protected Phases	5	2		1	6		8	8		4	4		
Permitted Phases						6			8			Free	
Actuated Green, G (s)	15.8	28.1		9.2	21.5	21.5	15.3	15.3	15.3	20.9	20.9	90.0	
Effective Green, g (s)	15.8	28.1		9.2	21.5	21.5	15.3	15.3	15.3	20.9	20.9	90.0	
Actuated g/C Ratio	0.18	0.31		0.10	0.24	0.24	0.17	0.17	0.17	0.23	0.23	1.00	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	603	1067		181	821	359	286	300	256	797	433	1550	
v/s Ratio Prot	c0.18	c0.33		0.06	0.16		0.04	c0.09		c0.19	0.06		
v/s Ratio Perm						0.10			0.02			0.17	
v/c Ratio	1.01	1.06		0.60	0.68	0.41	0.21	0.53	0.11	0.84	0.25	0.17	
Uniform Delay, d1	37.1	30.9		38.6	31.1	28.9	32.1	34.0	31.6	32.9	28.2	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	39.6	43.3		5.5	4.5	3.4	0.4	1.7	0.2	7.6	0.3	0.2	
Delay (s)	76.7	74.3		44.2	35.6	32.3	32.5	35.7	31.8	40.6	28.5	0.2	
Level of Service	E	E		D	D	C	C	D	C	D	C	A	
Approach Delay (s)		75.1			34.8			33.5				28.9	
Approach LOS		E			C			C				C	
<b>Intersection Summary</b>													
HCM Average Control Delay			49.0									HCM Level of Service	D
HCM Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			90.0									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

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕		
Volume (vph)	117	1585	32	31	1316	160	13	3	36	140	2	115	
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00	
Flt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.96	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3430		1770	3438	1583	1790	1583	1681	1688	1583	1583	
Satd. Flow (perm)	0.95	1.00		0.95	1.00	1.00	0.82	1.00	0.75	0.72	1.00	1.00	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	119	1617	33	32	1343	163	13	3	37	143	2	117	
RTOR Reduction (vph)	0	1	0	0	0	58	0	0	32	0	0	100	
Lane Group Flow (vph)	119	1649	0	32	1343	105	0	16	5	73	72	17	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm	
Protected Phases	5	2		1	6		8	8		4	4		
Permitted Phases						6	8		8	4		4	
Actuated Green, G (s)	12.4	82.2		5.2	75.0	75.0	16.6	16.6	16.6	16.6	16.6	16.6	
Effective Green, g (s)	12.4	82.2		5.2	75.0	75.0	16.6	16.6	16.6	16.6	16.6	16.6	
Actuated g/C Ratio	0.11	0.71		0.04	0.65	0.65	0.14	0.14	0.14	0.14	0.14	0.14	
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)	189	2431		79	2223	1023	218	227	189	182	227	227	
v/s Ratio Prot	c0.07	c0.48		0.02	0.39								
v/s Ratio Perm						0.07	0.01	0.00	0.06	c0.06	0.01		
v/c Ratio	0.63	0.68		0.41	0.60	0.10	0.07	0.02	0.39	0.40	0.07	0.07	
Uniform Delay, d1	49.6	9.5		53.9	11.9	7.8	43.0	42.7	45.1	45.1	43.0	43.0	
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	6.4	1.5		3.4	1.2	0.2	0.1	0.0	1.3	1.4	0.1	0.1	
Delay (s)	56.0	11.0		57.3	13.1	8.0	43.2	42.8	46.4	46.6	43.2	43.2	
Level of Service	E	B		E	B	A	D	D	D	D	D	D	
Approach Delay (s)		14.1			13.5			42.9				45.0	
Approach LOS		B			B			D				D	
<b>Intersection Summary</b>													
HCM Average Control Delay			16.5									HCM Level of Service	B
HCM Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			116.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			71.5%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑
Volume (vph)	0	1634	107	121	1085	0	265	0	189	6	37	202
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1850	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.73		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2632		1583		1850	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1667	109	123	1107	0	270	0	193	6	38	206
RTOR Reduction (vph)	0	0	49	0	0	0	0	0	171	0	0	95
Lane Group Flow (vph)	0	1667	60	123	1107	0	270	0	22	0	44	111
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases			2				8		8			4
Actuated Green, G (s)		49.9	49.9	10.2	64.1		11.0		11.0		10.6	10.6
Effective Green, g (s)		49.9	49.9	10.2	64.1		11.0		11.0		10.6	10.6
Actuated g/C Ratio		0.51	0.51	0.10	0.66		0.11		0.11		0.11	0.11
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)		1756	809	185	2322		296		178		201	167
v/s Ratio Prot		c0.48		c0.07	0.31						0.02	
v/s Ratio Perm			0.04				c0.10		0.01			c0.07
v/c Ratio		0.95	0.07	0.66	0.48		0.91		0.12		0.22	0.66
Uniform Delay, d1		22.7	12.2	42.1	8.4		42.9		39.0		39.8	41.8
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		11.5	0.0	8.7	0.2		30.5		0.3		0.6	9.5
Delay (s)		34.2	12.2	50.8	8.6		73.4		39.3		40.3	51.3
Level of Service		C	B	D	A		E		D		D	D
Approach Delay (s)		32.9			12.8		59.2				49.4	
Approach LOS		C			B		E				D	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑	↑
Volume (vph)	201	192	156	1107	620	134
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.95
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1511
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1511
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	202	164	1165	653	141
RTOR Reduction (vph)	0	165	0	0	0	60
Lane Group Flow (vph)	212	37	164	1165	653	81
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot		Perm	
Protected Phases		4	5	2	6	
Permitted Phases			4			6
Actuated Green, G (s)		21.1	21.1	16.1	86.9	66.8
Effective Green, g (s)		21.1	21.1	16.1	86.9	66.8
Actuated g/C Ratio		0.18	0.18	0.14	0.75	0.58
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		322	273	246	2651	2928
v/s Ratio Prot		c0.12		c0.09	c0.33	0.13
v/s Ratio Perm			0.02			0.05
v/c Ratio		0.66	0.13	0.67	0.44	0.22
Uniform Delay, d1		44.1	39.8	47.4	5.4	12.0
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		4.8	0.2	6.7	0.5	0.2
Delay (s)		48.9	40.0	54.1	6.0	12.1
Level of Service		D	D	D	A	B
Approach Delay (s)		44.6			11.9	12.0
Approach LOS		D			B	B

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	8	0	14	16	0	37	103	1318	13	5	778	16
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.91	1.00		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.99	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1662	1770		3534	3528		1770	3528	
Flt Permitted	0.77	1.00		0.89	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1433	1583		1510	1770		3534	3528		1770	3528	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	0	15	17	0	39	108	1387	14	5	819	17
RTOR Reduction (vph)	0	0	14	0	35	0	1	0	0	2	0	0
Lane Group Flow (vph)	0	8	1	0	21	0	108	1400	0	5	834	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.2	5.2		5.2		4.2	33.8		1.2	30.8	
Effective Green, g (s)		5.2	5.2		5.2		4.2	33.8		1.2	30.8	
Actuated g/C Ratio		0.10	0.10		0.10		0.08	0.65		0.02	0.59	
Clearance Time (s)		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	
Lane Grp Cap (vph)	143	158		150		142	2288	41		2082		
v/s Ratio Prot							c0.06	c0.40		0.00	0.24	
v/s Ratio Perm	0.01	0.00			c0.01							
v/c Ratio	0.06	0.01		0.14		0.76	0.61			0.12	0.40	
Uniform Delay, d1	21.3	21.2		21.5		23.5	5.4			25.0	5.7	
Progression Factor	1.00	1.00		1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.2	0.0		0.4		21.0	0.5			1.3	0.6	
Delay (s)	21.4	21.2		21.9		44.5	5.9			26.3	6.3	
Level of Service	C	C		C		D	A			C	A	
Approach Delay (s)	21.3			21.9			8.6			6.4		
Approach LOS	C			C			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay		8.3				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		52.2				Sum of lost time (s)		12.0				
Intersection Capacity Utilization		62.5%				ICU Level of Service		B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	16	2	45	17	1	11	61	1114	133	97	855	30
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	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85	1.00	0.86	1.00		1.00	0.98		1.00	0.99	
Flt Protected	0.96	1.00	0.95	1.00	0.86		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1783	1583	1770	1605	1770		3483	3483		1770	3521	
Flt Permitted	0.74	1.00	0.77	1.00	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1377	1583	1433	1605	1770		3483	3483		1770	3521	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	2	47	18	1	12	64	1173	140	102	900	32
RTOR Reduction (vph)	0	0	42	0	11	0	14	0	0	4	0	0
Lane Group Flow (vph)	0	19	5	18	2	0	64	1299	0	102	928	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.2	5.2	5.2	5.2		4.2	24.7		4.2	24.7	
Effective Green, g (s)		5.2	5.2	5.2	5.2		4.2	24.7		4.2	24.7	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.09	0.54		0.09	0.54	
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)	155	179	162	181	181		161	1866		161	1887	
v/s Ratio Prot					0.00		0.04	c0.37		0.06	c0.26	
v/s Ratio Perm	c0.01	0.00	0.01									
v/c Ratio	0.12	0.03	0.11	0.01			0.40	0.70		0.63	0.49	
Uniform Delay, d1	18.4	18.2	18.4	18.2			19.8	7.9		20.2	6.7	
Progression Factor	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.1	0.3	0.0			1.6	1.1		7.9	0.9	
Delay (s)	18.8	18.3	18.7	18.2			21.4	9.1		28.1	7.7	
Level of Service	B	B	B	B			C	A		C	A	
Approach Delay (s)	18.4			18.5				9.6		9.7		
Approach LOS	B			B				A		A		
<b>Intersection Summary</b>												
HCM Average Control Delay		10.0				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.61										
Actuated Cycle Length (s)		46.1				Sum of lost time (s)		12.0				
Intersection Capacity Utilization		59.2%				ICU Level of Service		B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	3	0	2	28	0	5	3	973	86	40	872	4
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	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Frt	0.95	1.00	0.85	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1711	1770	1583	1770	3496	1770	3537	1770	3537	1770	3537	1770
Flt Permitted	0.97	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1711	1863	1583	1770	3496	1770	3537	1770	3537	1770	3537	1770
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	0	2	29	0	5	3	1024	91	42	918	4
RTOR Reduction (vph)	0	2	0	0	0	5	0	7	0	0	0	0
Lane Group Flow (vph)	0	3	0	29	0	0	3	1108	0	42	922	0
Turn Type	Perm		custom		custom		Prot			Prot		
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8			8					
Actuated Green, G (s)	1.6			1.6			1.6	1.1	24.6	2.9	26.4	
Effective Green, g (s)	1.6			1.6			1.6	1.1	24.6	2.9	26.4	
Actuated g/C Ratio	0.04			0.04			0.03	0.60	0.07	0.64		
Clearance Time (s)	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	
Lane Grp Cap (vph)	67			73			62	47	2092	125	2272	
v/s Ratio Prot							0.00	c0.32		c0.02	0.26	
v/s Ratio Perm	0.00			c0.02			0.00			0.34	0.41	
v/c Ratio	0.05			0.40			0.06	0.53		0.34	0.41	
Uniform Delay, d1	19.0			19.3			19.0	19.5	4.8	18.2	3.6	
Progression Factor	1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3			3.5			0.0	0.6	0.2	1.6	0.1	
Delay (s)	19.3			22.8			19.0	20.1	5.1	19.8	3.7	
Level of Service	B			C			B	C	A	B	A	
Approach Delay (s)	19.3			22.2			5.1			4.4		
Approach LOS	B			C			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay	5.1			HCM Level of Service				A				
HCM Volume to Capacity ratio	0.50											
Actuated Cycle Length (s)	41.1			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	51.3%			ICU Level of Service				A				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	28	0	19	46	0	40	11	965	108	72	821	16
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	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Frt	0.94	1.00	1.00	0.85	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1710	1770	1583	1770	3486	1770	3529	1770	3529	1770	3529	1770
Flt Permitted	0.97	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1710	1380	1583	1770	3486	1770	3529	1770	3529	1770	3529	1770
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	0	20	48	0	42	12	1016	114	76	864	17
RTOR Reduction (vph)	0	18	0	0	0	37	0	14	0	0	2	0
Lane Group Flow (vph)	0	31	0	48	0	5	12	1116	0	76	879	0
Turn Type	Perm		custom		custom		Prot			Prot		
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8			8					
Actuated Green, G (s)	5.4			5.4			5.4	1.4	22.8	4.2	25.6	
Effective Green, g (s)	5.4			5.4			5.4	1.4	22.8	4.2	25.6	
Actuated g/C Ratio	0.12			0.12			0.12	0.03	0.51	0.09	0.58	
Clearance Time (s)	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	
Lane Grp Cap (vph)	208			168			193	56	1790	167	2035	
v/s Ratio Prot							0.01	c0.32		0.04	c0.25	
v/s Ratio Perm	0.02			c0.03			0.00					
v/c Ratio	0.15			0.29			0.03	0.21	0.62	0.46	0.43	
Uniform Delay, d1	17.4			17.7			17.2	21.0	7.7	19.0	5.3	
Progression Factor	1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3			0.9			0.1	1.9	0.7	2.0	0.1	
Delay (s)	17.8			18.7			17.2	22.9	8.4	21.0	5.4	
Level of Service	B			B			B	C	A	C	A	
Approach Delay (s)	17.8			18.0			8.6			6.7		
Approach LOS	B			B			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay	8.3			HCM Level of Service				A				
HCM Volume to Capacity ratio	0.56											
Actuated Cycle Length (s)	44.4			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	56.8%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	32	54	861	60	259	932
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3493		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3493		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	57	906	63	273	981
RTOR Reduction (vph)	0	22	10	0	0	0
Lane Group Flow (vph)	34	35	959	0	273	981
Confl. Peds. (#/hr)				25		
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	1.4	10.6	15.2	9.2	28.4	
Effective Green, g (s)	1.4	10.6	15.2	9.2	28.4	
Actuated g/C Ratio	0.04	0.28	0.40	0.24	0.75	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	66	611	1405	431	2659	
v/s Ratio Prot	c0.02	0.01	c0.27	c0.15	0.28	
v/s Ratio Perm		0.01				
v/c Ratio	0.52	0.06	0.68	0.63	0.37	
Uniform Delay, d1	17.9	9.9	9.3	12.8	1.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.6	0.0	1.4	3.0	0.1	
Delay (s)	24.5	10.0	10.7	15.8	1.7	
Level of Service	C	A	B	B	A	
Approach Delay (s)	15.4		10.7		4.8	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	37.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	4	10	4	479	39	502	17	512	352	279	696	18
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frbp, ped/bikes	1.00	0.77	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1838	1215	1681	1697	1583	1770	3539	1461	1770	3522		
Fit Permitted	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1838	1215	1681	1697	1583	1770	3539	1461	1770	3522		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	11	4	504	41	528	18	539	371	294	733	19
RTOR Reduction (vph)	0	0	4	0	0	272	0	0	291	0	2	0
Lane Group Flow (vph)	0	15	0	272	273	256	18	539	80	294	750	0
Confl. Peds. (#/hr)				25					25			25
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		2.0	2.0	14.4	14.4	29.1	1.6	12.9	12.9	14.7	26.0	
Effective Green, g (s)		2.0	2.0	14.4	14.4	29.1	1.6	12.9	12.9	14.7	26.0	
Actuated g/C Ratio		0.03	0.03	0.24	0.24	0.49	0.03	0.22	0.22	0.24	0.43	
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	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		61	41	403	407	873	47	761	314	434	1526	
v/s Ratio Prot		c0.01		c0.16	0.16	0.07	0.01	c0.15		c0.17	0.21	
v/s Ratio Perm			0.00			0.09			0.05			
v/c Ratio		0.25	0.00	0.67	0.67	0.29	0.38	0.71	0.25	0.68	0.49	
Uniform Delay, d1		28.3	28.0	20.7	20.7	9.3	28.7	21.8	19.6	20.5	12.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.19	0.71	
Incremental Delay, d2		2.1	0.0	4.4	4.3	0.2	5.1	5.5	1.9	3.7	1.0	
Delay (s)		30.4	28.1	25.1	25.0	9.5	33.8	27.3	21.5	28.2	9.7	
Level of Service		C	C	C	C	A	C	C	C	C	A	
Approach Delay (s)		29.9			17.4			25.1			14.9	
Approach LOS		C			B			C			B	

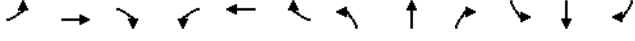
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

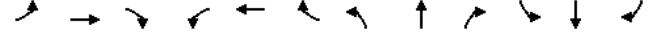


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	19	192	311	295	17	18	445	299	227	101	321	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	0.97	0.95	0.97	0.95	1.00	1.00	0.95	0.95
Frbp, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.94	1.00	0.99	1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.98	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.96	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1854	1583	1681	1665	3433	3539	1481	1770	3483	1770	1863	1450
Fit Permitted	1.00	1.00	0.95	0.96	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1854	1583	1681	1665	3433	3539	1481	1770	3483	1770	1863	1450
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	202	327	311	18	19	468	315	239	106	338	25
RTOR Reduction (vph)	0	0	258	0	7	0	0	174	0	9	0	0
Lane Group Flow (vph)	0	222	69	174	167	0	468	315	65	106	354	0
Confl. Peds. (#/hr)	25				25				25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Perm	Split
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)		10.7	10.7	10.6	10.6		10.8	16.4	16.4	6.3	11.9	
Effective Green, g (s)		10.7	12.7	10.6	10.6		10.8	16.4	16.4	6.3	11.9	
Actuated g/C Ratio		0.18	0.21	0.18	0.18		0.18	0.27	0.27	0.10	0.20	
Clearance Time (s)		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		5.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		331	335	297	294		618	967	405	186	691	
v/s Ratio Prot		c0.12		c0.10	0.10		c0.14	0.09		0.06	c0.10	
v/s Ratio Perm			0.04					0.04				
v/c Ratio		0.67	0.21	0.59	0.57		0.76	0.33	0.16	0.57	0.51	
Uniform Delay, d1		23.0	19.5	22.7	22.6		23.4	17.4	16.6	25.6	21.5	
Progression Factor		1.00	1.00	1.00	1.00		0.78	0.68	0.81	1.00	1.00	
Incremental Delay, d2		5.3	0.3	2.9	2.5		5.0	0.7	0.7	4.0	2.7	
Delay (s)		28.3	19.8	25.6	25.1		23.1	12.6	14.2	29.5	24.2	
Level of Service		C	B	C	C		C	B	B	C	C	
Approach Delay (s)		23.2			25.4			17.8			25.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis  
16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	161	84	370	481	95	22	229	218	186	14	93	22
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97	1.00	1.00	0.85	0.98	1.00	0.99	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.99
Satd. Flow (prot)	1770	1863	1583	1770	1810	1770	1863	1450	1810	1770	1863	1450
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.99
Satd. Flow (perm)	1770	1863	1583	1770	1810	1770	1863	1450	1810	1770	1863	1450
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	169	88	389	506	100	23	241	229	196	15	98	23
RTOR Reduction (vph)	0	0	179	0	11	0	0	0	159	0	11	0
Lane Group Flow (vph)	169	88	210	506	112	0	241	229	37	0	125	0
Confl. Peds. (#/hr)									25			
Turn Type		Prot	pm+ov		Prot		Split		Perm		Split	
Protected Phases		5	2	3	1	6		3	3		4	4
Permitted Phases				2					3			
Actuated Green, G (s)		6.5	7.7	19.8	20.2	21.4		12.1	12.1		12.1	7.6
Effective Green, g (s)		6.5	7.7	19.8	20.2	21.4		12.1	12.1		12.1	7.6
Actuated g/C Ratio		0.10	0.12	0.31	0.32	0.34		0.19	0.19		0.19	0.12
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.5	3.0	3.0	3.5		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		181	226	592	562	609		337	354		276	216
v/s Ratio Prot		0.10	0.05	c0.07	c0.29	0.06		c0.14	0.12			c0.07
v/s Ratio Perm				0.07					0.03			
v/c Ratio		0.93	0.39	0.35	0.90	0.18		0.72	0.65		0.14	0.58
Uniform Delay, d1		28.3	25.8	17.0	20.7	14.9		24.1	23.8		21.4	26.5
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		47.8	1.3	0.4	17.5	0.2		7.0	4.0		0.2	3.9
Delay (s)		76.1	27.1	17.3	38.2	15.1		31.2	27.8		21.6	30.4
Level of Service		E	C	B	D	B		C	C		C	C
Approach Delay (s)			34.0			33.7			27.2			30.4
Approach LOS			C			C			C			C

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis  
 17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Volume (vph)	33	1414	61	56	703	56	54	9	69	41	7	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
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Flt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3517		1770	3539	1583		1786	1583		1786	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.77	1.00		0.78	1.00
Satd. Flow (perm)	1770	3517		1770	3539	1583		1430	1583		1450	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	1488	64	59	740	59	57	9	73	43	7	1
RTOR Reduction (vph)	0	4	0	0	0	26	0	0	54	0	0	1
Lane Group Flow (vph)	35	1548	0	59	740	33	0	66	19	0	50	0
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	3.8	44.1		5.2	45.5	45.5		20.9	20.9		20.9	20.9
Effective Green, g (s)	3.8	44.1		5.2	45.5	45.5		20.9	20.9		20.9	20.9
Actuated g/C Ratio	0.05	0.54		0.06	0.55	0.55		0.25	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
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)	82	1887		112	1959	876		364	402		369	402
v/s Ratio Prot	0.02	c0.44		c0.03	0.21							
v/s Ratio Perm						0.02	c0.05	0.01			0.03	0.00
v/c Ratio	0.43	0.82		0.53	0.38	0.04		0.18	0.05		0.14	0.00
Uniform Delay, d1	38.1	15.8		37.3	10.4	8.4		24.0	23.1		23.7	22.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	3.0		4.4	0.1	0.0		1.1	0.2		0.8	0.0
Delay (s)	41.7	18.8		41.7	10.5	8.4		25.1	23.3		24.4	22.9
Level of Service	D	B		D	B	A		C	C		C	C
Approach Delay (s)		19.3			12.5			24.2			24.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

AM Peak Hour - Buildout Conditions  
 Town Center Specific Plan  
 City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #18 Mt Hermon Road/Washington Mutual Access  
 \*\*\*\*\*  
 Average Delay (sec/veh): 2.3 Worst Case Level Of Service: C[ 21.8]  
 \*\*\*\*\*  
 Street Name: Washington Mutual Access Mt Hermon Road  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include  
 Lanes: 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0  
 \*\*\*\*\*  
 Volume Module:  
 Base Vol: 2 0 111 0 0 0 0 1475 22 162 683 0  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 2 0 111 0 0 0 0 1475 22 162 683 0  
 Added Vol: 0 0 0 0 0 0 0 49 0 0 41 0  
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Initial Fut: 2 0 111 0 0 0 0 1524 22 162 724 0  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 2 0 117 0 0 0 0 1604 23 171 762 0  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 FinalVolume: 2 0 117 0 0 0 0 1604 23 171 762 0  
 \*\*\*\*\*  
 Critical Gap Module:  
 Critical Gp: 6.8 6.5 6.9 7.5 6.5 6.9 xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx  
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx  
 \*\*\*\*\*  
 Capacity Module:  
 Cnflct Vol: 2338 2719 814 1905 2731 381 xxxxx xxxxx xxxxx 1627 xxxxx xxxxx  
 Potent Cap.: 31 21 325 43 21 623 xxxxx xxxxx xxxxx 405 xxxxx xxxxx  
 Move Cap.: 21 12 325 18 12 623 xxxxx xxxxx xxxxx 405 xxxxx xxxxx  
 Volume/Cap: 0.10 0.00 0.36 0.00 0.00 0.00 xxxxx xxxxx xxxxx 0.42 xxxxx xxxxx  
 \*\*\*\*\*  
 Level Of Service Module:  
 2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 2.0 xxxxx xxxxx  
 Control Del: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 20.2 xxxxx xxxxx  
 LOS by Move: \*  
 Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT  
 Shared Cap.: xxxxx 331 xxxxx xxxxx xxxxx 0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
 SharedQueue: xxxxx 1.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shrd ConDel: xxxxx 21.8 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shared LOS: C \*  
 ApproachDel: 21.8 xxxxxx xxxxxx xxxxxx  
 ApproachLOS: C \*

AM Peak Hour - Buildout Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.186
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 57 1 92 0 1 0 0 7 10 99 21 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 57 1 92 0 1 0 0 7 10 99 21 1
Added Vol: 2 0 3 0 0 0 0 1 2 12 1 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 59 1 95 0 1 0 0 8 12 111 22 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 62 1 100 0 1 0 0 8 13 117 23 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 62 1 100 0 1 0 0 8 13 117 23 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 62 1 100 0 1 0 0 8 13 117 23 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.38 0.01 0.61 0.00 1.00 0.00 0.00 0.40 0.60 0.83 0.16 0.01
Final Sat.: 335 6 539 0 781 0 0 342 514 656 130 6
Capacity Analysis Module:
Vol/Sat: 0.19 0.19 0.19 xxxx 0.00 xxxx xxxx 0.02 0.02 0.18 0.18 0.18
Crit Moves: \*\*\*\*
Delay/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
LOS by Move: A A A \* A \* A A A A A
ApproachDel: 7.8 7.4 7.1 8.3
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 7.8 7.4 7.1 8.3
LOS by Appr: A A A A
AllWayAvgQ: 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.2 0.2

AM Peak Hour - Buildout Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 6.0 Worst Case Level Of Service: B[ 12.3]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 105 27 2 0 49 14 14 0 78 10 1 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 105 27 2 0 49 14 14 0 78 10 1 0
Added Vol: 3 1 0 0 4 3 1 0 10 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 108 28 2 0 53 17 15 0 88 10 1 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 114 29 2 0 56 18 16 0 93 11 1 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 114 29 2 0 56 18 16 0 93 11 1 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx xxxx xxxx 7.1 6.5 6.2 7.1 6.5 xxxx
FollowUpTim: 2.2 xxxx xxxx xxxx xxxx 3.5 4.0 3.3 3.5 4.0 xxxx
Capacity Module:
Cnflct Vol: 74 xxxx xxxx xxxx xxxx 323 324 65 369 332 xxxx
Potent Cap.: 1539 xxxx xxxx xxxx xxxx 634 597 1005 591 591 xxxx
Move Cap.: 1539 xxxx xxxx xxxx xxxx 595 550 1005 504 545 xxxx
Volume/Cap: 0.07 xxxx xxxx xxxx xxxx 0.03 0.00 0.09 0.02 0.00 xxxx
Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 7.5 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx 913 xxxx 508 xxxx xxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 0.4 xxxxx 0.1 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 9.5 xxxxx 12.3 xxxx xxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 9.5 12.3
ApproachLOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Note: Queue reported is the number of cars per lane.

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	12	545	1198	0	68	9
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	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3438	1810	1770	1583	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3438	1810	1770	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	574	1261	0	72	9
RTOR Reduction (vph)	0	0	0	0	0	8
Lane Group Flow (vph)	13	574	1261	0	72	1
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8	6	6	
Permitted Phases				8	6	
Actuated Green, G (s)	1.3	64.5	59.2	11.0	11.0	
Effective Green, g (s)	1.3	64.5	59.2	11.0	11.0	
Actuated g/C Ratio	0.02	0.77	0.71	0.13	0.13	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	28	2656	1283	233	209	
v/s Ratio Prot	c0.01	0.17	c0.70	c0.04		
v/s Ratio Perm					0.00	
v/c Ratio	0.46	0.22	0.98	0.31	0.01	
Uniform Delay, d1	40.8	2.6	11.7	32.8	31.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.7	0.0	21.0	3.4	0.0	
Delay (s)	52.4	2.6	32.6	36.2	31.5	
Level of Service	D	A	C	D	C	
Approach Delay (s)		3.7	32.6		35.7	
Approach LOS		A	C		D	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	13	593	19	229	1324	83	38	6	151	44	13	9
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.96	1.00	0.96	1.00	0.96	1.00
Satd. Flow (prot)	1770	3425	1770	3414	1785	1583	1794	1583	1794	1583	1794	1583
Flt Permitted	0.95	1.00	0.95	1.00	0.76	1.00	0.78	1.00	0.78	1.00	0.78	1.00
Satd. Flow (perm)	1770	3425	1770	3414	1409	1583	1449	1583	1449	1583	1449	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	624	20	241	1394	87	40	6	159	46	14	9
RTOR Reduction (vph)	0	4	0	0	7	0	0	0	128	0	0	7
Lane Group Flow (vph)	14	640	0	241	1474	0	0	46	31	0	60	2
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6		4	4	8	8	8	8
Permitted Phases							4	4	8	8	8	8
Actuated Green, G (s)	1.2	18.5		11.3	28.6		10.3	10.3	10.3	10.3	10.3	10.3
Effective Green, g (s)	1.2	18.5		11.3	28.6		10.3	10.3	10.3	10.3	10.3	10.3
Actuated g/C Ratio	0.02	0.36		0.22	0.55		0.20	0.20	0.20	0.20	0.20	0.20
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)	41	1216		384	1874		279	313	286	313	286	313
v/s Ratio Prot	0.01	0.19		c0.14	c0.43							
v/s Ratio Perm							0.03	0.02	c0.04	0.00		
v/c Ratio	0.34	0.53		0.63	0.79		0.16	0.10	0.21	0.01		
Uniform Delay, d1	25.1	13.3		18.5	9.3		17.3	17.1	17.5	16.8		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	4.9	0.4		3.2	2.3		0.3	0.1	0.4	0.0		
Delay (s)	30.0	13.7		21.7	11.6		17.6	17.2	17.9	16.8		
Level of Service	C	B		C	B		B	B	B	B		
Approach Delay (s)		14.1			13.0		17.3		17.7			
Approach LOS		B			B		B		B			

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Volume (vph)	141	793	4	125	1423	145	39	23	84	196	24	277
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3436		1770	3438	1583		1806	1583		1783	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.64	1.00		0.70	1.00
Satd. Flow (perm)	1770	3436		1770	3438	1583		1195	1583		1309	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	835	4	132	1498	153	41	24	88	206	25	292
RTOR Reduction (vph)	0	0	0	0	0	55	0	0	68	0	0	164
Lane Group Flow (vph)	148	839	0	132	1498	98	0	65	20	0	231	128
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm	Perm	Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.0	65.1		12.9	64.0	64.0	26.0	26.0		26.0	26.0	
Effective Green, g (s)	14.0	65.1		12.9	64.0	64.0	26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.12	0.56		0.11	0.55	0.55	0.22	0.22		0.22	0.22	
Clearance Time (s)	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	
Lane Grp Cap (vph)	214	1928		197	1897	873	268	355		293	355	
v/s Ratio Prot	c0.08	0.24		0.07	c0.44		0.05	0.01		c0.18	0.08	
v/s Ratio Perm					0.06		0.05	0.01		c0.18	0.08	
v/c Ratio	0.69	0.43		0.67	0.79	0.11	0.24	0.06		0.79	0.36	
Uniform Delay, d1	48.9	14.8		49.5	20.7	12.4	36.9	35.4		42.4	38.0	
Progression Factor	1.00	1.00		1.20	0.58	0.88	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.3	0.7		6.0	2.4	0.2	0.5	0.1		13.1	0.6	
Delay (s)	58.2	15.5		65.6	14.4	11.1	37.4	35.4		55.5	38.6	
Level of Service	E	B		E	B	B	D	D		E	D	
Approach Delay (s)	21.9			17.9			36.3			46.1		
Approach LOS	C			B			D			D		

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Volume (vph)	50	1002	14	41	1602	294	8	0	13	173	4	55
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3432		1770	3438	1583		1770	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.43	1.00		0.73	1.00
Satd. Flow (perm)	1770	3432		1770	3438	1583		801	1583		1351	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1055	15	43	1686	309	8	0	14	182	4	58
RTOR Reduction (vph)	0	1	0	0	0	91	0	0	11	0	0	47
Lane Group Flow (vph)	53	1069	0	43	1686	218	0	8	3	0	186	11
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm	Perm	Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases					6	4		4	4			4
Actuated Green, G (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Effective Green, g (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Actuated g/C Ratio	0.07	0.65		0.06	0.65	0.65	0.18	0.18		0.18	0.18	
Clearance Time (s)	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	
Lane Grp Cap (vph)	117	2240		110	2229	1026	146	288		246	288	
v/s Ratio Prot	c0.03	0.31		0.02	c0.49		0.01	0.00		c0.14	0.01	
v/s Ratio Perm					0.14		0.01	0.00		c0.14	0.01	
v/c Ratio	0.45	0.48		0.39	0.76	0.21	0.05	0.01		0.76	0.04	
Uniform Delay, d1	52.1	10.2		52.3	14.1	8.3	39.2	38.9		45.0	39.1	
Progression Factor	1.40	0.70		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	0.7		2.3	2.5	0.5	0.2	0.0		12.4	0.1	
Delay (s)	75.4	7.8		54.6	16.5	8.8	39.4	38.9		57.4	39.1	
Level of Service	E	A		D	B	A	D	D		E	D	
Approach Delay (s)	11.0			16.2			39.1			53.1		
Approach LOS	B			B			D			D		

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↔	↔	↕	↕	
Volume (vph)	496	818	83	241	1293	491	136	109	143	574	119	563	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frft	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3433	3365		1770	3438	1478	1681	1758	1478	3433	1863	1550	
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3433	3365		1770	3438	1478	1681	1758	1478	3433	1863	1550	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	506	835	85	246	1319	501	139	111	146	586	121	574	
RTOR Reduction (vph)	0	5	0	0	219	0	0	127	0	0	0	0	
Lane Group Flow (vph)	506	915	0	246	1319	282	122	128	19	586	121	574	
Confl. Peds. (#/hr)			30			30			30			30	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free	
Protected Phases	5	2		1	6		8	8		4	4		
Permitted Phases						6			8			Free	
Actuated Green, G (s)	22.6	53.1		21.3	51.8	51.8	17.1	17.1	17.1	22.0	22.0	130.0	
Effective Green, g (s)	22.6	53.1		21.3	51.8	51.8	17.1	17.1	17.1	22.0	22.0	130.0	
Actuated g/C Ratio	0.17	0.41		0.16	0.40	0.40	0.13	0.13	0.13	0.17	0.17	1.00	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	597	1374		290	1370	589	221	231	194	581	315	1550	
v/s Ratio Prot	c0.15	0.27		0.14	c0.38		0.07	c0.07		c0.17	0.06		
v/s Ratio Perm					0.19				0.01			c0.37	
v/c Ratio	0.85	0.67		0.85	0.96	0.48	0.55	0.55	0.10	1.01	0.38	0.37	
Uniform Delay, d1	52.0	31.2		52.8	38.2	29.1	52.9	52.9	49.7	54.0	48.0	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	10.8	2.6		20.0	16.9	2.8	3.0	2.9	0.2	39.5	0.8	0.7	
Delay (s)	62.8	33.8		72.8	55.1	31.8	55.8	55.7	49.9	93.5	48.8	0.7	
Level of Service	E	C		E	E	C	E	E	D	F	D	A	
Approach Delay (s)	44.1			51.5			53.6			47.7			
Approach LOS	D			D			D			D			
<b>Intersection Summary</b>													
HCM Average Control Delay	48.7		HCM Level of Service					D					
HCM Volume to Capacity ratio	0.89												
Actuated Cycle Length (s)	130.0			Sum of lost time (s)						16.5			
Intersection Capacity Utilization	83.4%		ICU Level of Service					E					
Analysis Period (min)	15												
c Critical Lane Group													

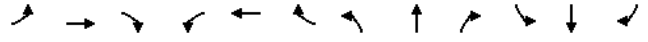
HCM Signalized Intersection Capacity Analysis  
6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↔	↔	↕	↕	
Volume (vph)	186	1312	16	8	1716	147	5	3	20	138	0	146	
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00	
Frft	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.97	1.00	0.95	0.95	0.95	1.00	
Satd. Flow (prot)	1770	3433		1770	3438	1583	1806	1583	1681	1681	1681	1583	
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.89	1.00	0.75	0.75	0.75	1.00	
Satd. Flow (perm)	1770	3433		1770	3438	1583	1653	1583	1332	1332	1332	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	190	1339	16	8	1751	150	5	3	20	141	0	149	
RTOR Reduction (vph)	0	1	0	0	49	0	0	17	0	0	0	128	
Lane Group Flow (vph)	190	1354	0	8	1751	101	8	3	70	71	21	21	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Perm		Perm			Perm	
Protected Phases	5	2		1	6		8	8		4	4		
Permitted Phases						6	8		8	4		4	
Actuated Green, G (s)	16.3	86.0		1.4	71.1	71.1	16.6	16.6	16.6	16.6	16.6	16.6	
Effective Green, g (s)	16.3	86.0		1.4	71.1	71.1	16.6	16.6	16.6	16.6	16.6	16.6	
Actuated g/C Ratio	0.14	0.74		0.01	0.61	0.61	0.14	0.14	0.14	0.14	0.14	0.14	
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)	249	2545		21	2107	970	237	227	191	191	227		
v/s Ratio Prot	c0.11	0.39		0.00	c0.51								
v/s Ratio Perm					0.06		0.00	0.00	0.05	c0.05	0.01		
v/c Ratio	0.76	0.53		0.38	0.83	0.10	0.03	0.01	0.37	0.37	0.09		
Uniform Delay, d1	48.0	6.4		56.9	17.7	9.3	42.8	42.7	44.9	45.0	43.2		
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	13.0	0.8		11.2	4.0	0.2	0.1	0.0	1.2	1.2	0.2		
Delay (s)	60.9	7.2		68.0	21.7	9.5	42.9	42.7	46.1	46.2	43.3		
Level of Service	E	A		E	C	A	D	D	D	D	D		
Approach Delay (s)	13.8			20.9			42.7				44.7		
Approach LOS	B			C			D				D		
<b>Intersection Summary</b>													
HCM Average Control Delay	20.0		HCM Level of Service					C					
HCM Volume to Capacity ratio	0.75												
Actuated Cycle Length (s)	116.0			Sum of lost time (s)						12.0			
Intersection Capacity Utilization	78.2%		ICU Level of Service					D					
Analysis Period (min)	15												
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis  
 7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑
Volume (vph)	0	1151	269	187	1043	0	300	0	246	7	107	541
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1857	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2466		1583		1857	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1174	274	191	1064	0	306	0	251	7	109	552
RTOR Reduction (vph)	0	0	180	0	0	0	0	0	184	0	0	40
Lane Group Flow (vph)	0	1174	94	191	1064	0	306	0	67	0	116	512
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		18					4
Actuated Green, G (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Effective Green, g (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Actuated g/C Ratio		0.34	0.34	0.09	0.48		0.13		0.27		0.26	0.26
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
Lane Grp Cap (vph)		1184	545	157	1691		329		422		475	393
v/s Ratio Prot		c0.34		c0.11	0.30						0.06	
v/s Ratio Perm			0.06				c0.12		0.04			c0.33
v/c Ratio		0.99	0.17	1.22	0.63		0.93		0.16		0.24	1.30
Uniform Delay, d1		29.4	20.6	41.0	17.5		38.6		25.3		26.6	33.5
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		24.0	0.2	141.7	0.7		32.0		0.2		0.3	153.5
Delay (s)		53.4	20.7	182.7	18.3		70.6		25.4		26.9	187.0
Level of Service		D	C	F	B		E		C		C	F
Approach Delay (s)		47.2			43.3		50.3				159.2	
Approach LOS		D			D		D				F	

Intersection Summary			
HCM Average Control Delay	65.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 8: Bean Creek Road & Scotts Valley Drive

8/4/2008



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑	↑
Volume (vph)	130	115	153	863	1201	169
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1512
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1512
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	137	121	161	908	1264	178
RTOR Reduction (vph)	0	101	0	0	0	73
Lane Group Flow (vph)	137	20	161	908	1264	105
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot			Perm
Protected Phases		4	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	19.4	19.4	15.9	88.6	68.7	68.7
Effective Green, g (s)	19.4	19.4	15.9	88.6	68.7	68.7
Actuated g/C Ratio	0.17	0.17	0.14	0.76	0.59	0.59
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)	296	251	243	2703	3012	895
v/s Ratio Prot	c0.08		c0.09	0.26	c0.25	
v/s Ratio Perm		0.01				0.07
v/c Ratio	0.46	0.08	0.66	0.34	0.42	0.12
Uniform Delay, d1	43.6	40.8	47.5	4.4	12.8	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	6.6	0.3	0.4	0.3
Delay (s)	44.7	40.9	54.1	4.7	13.3	10.6
Level of Service	D	D	D	A	B	B
Approach Delay (s)	42.9			12.1	12.9	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	34	0	105	15	0	5	98	802	5	40	1263	18
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.97	1.00		1.00	1.00		1.00	1.00	
Fit Protected	0.95	1.00		0.96	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1735	1770		3536	1770		3532	3532	
Fit Permitted	0.78	1.00		0.76	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1461	1583		1363	1770		3536	1770		3532	3532	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	35	0	108	15	0	5	101	827	5	41	1302	19
RTOR Reduction (vph)	0	0	96	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	35	12	0	16	0	101	832	0	41	1320	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.1	5.1		5.1		4.1	26.2		2.6	24.7	
Effective Green, g (s)		5.1	5.1		5.1		4.1	26.2		2.6	24.7	
Actuated g/C Ratio		0.11	0.11		0.11		0.09	0.57		0.06	0.54	
Clearance Time (s)		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	
Lane Grp Cap (vph)	162	176		151	158		2018	100		1901		
v/s Ratio Prot							c0.06	0.24		0.02	c0.37	
v/s Ratio Perm	c0.02	0.01		0.01								
v/c Ratio	0.22	0.07		0.10			0.64	0.41		0.41	0.69	
Uniform Delay, d1	18.6	18.3		18.3			20.2	5.5		20.9	7.8	
Progression Factor	1.00	1.00		1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.2		0.3			8.2	0.1		2.7	2.1	
Delay (s)	19.3	18.4		18.6			28.4	5.7		23.6	9.9	
Level of Service	B	B		B			C	A		C	A	
Approach Delay (s)	18.6			18.6			8.1			10.3		
Approach LOS	B			B			A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay		10.1					HCM Level of Service			B		
HCM Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		45.9					Sum of lost time (s)			12.0		
Intersection Capacity Utilization		62.2%					ICU Level of Service			B		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	32	1	53	112	2	80	47	794	35	14	1191	5
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	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85	1.00	0.85	1.00		1.00	0.99		1.00	1.00	
Fit Protected	0.95	1.00	0.95	1.00	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1776	1583	1770	1590	1770		3517	3517		1770	3537	
Fit Permitted	0.71	1.00	0.73	1.00	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1320	1583	1368	1590	1770		3517	3517		1770	3537	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1	56	118	2	84	49	836	37	15	1254	5
RTOR Reduction (vph)	0	0	46	0	69	0	5	0	0	0	1	0
Lane Group Flow (vph)	0	35	10	118	17	0	49	868	0	15	1258	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7	
Effective Green, g (s)		8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7	
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.07	0.54		0.03	0.49	
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)	236	283	245	284	130		1887	46		1730		
v/s Ratio Prot					0.01		0.03	c0.25		0.01	c0.36	
v/s Ratio Perm	0.03	0.01		c0.09								
v/c Ratio	0.15	0.04		0.48	0.06		0.38	0.46		0.33	0.73	
Uniform Delay, d1	16.1	15.7		17.1	15.8		20.5	6.6		22.2	9.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1		1.5	0.1		1.8	0.2		4.1	2.7	
Delay (s)	16.4	15.8		18.6	15.9		22.3	6.8		26.3	12.1	
Level of Service	B	B		B	B		C	A		C	B	
Approach Delay (s)	16.0			17.5			7.6			12.3		
Approach LOS	B			B			A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay		11.1					HCM Level of Service			B		
HCM Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		46.4					Sum of lost time (s)			8.0		
Intersection Capacity Utilization		59.7%					ICU Level of Service			B		
Analysis Period (min)		15										
c Critical Lane Group												



HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	10	0	7	81	0	18	5	768	12	17	985	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	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Frt	0.95	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1713	1770	1583	1770	3531	1770	3535	1770	3535	1770	3535	1770
Flt Permitted	0.97	0.75	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1713	1389	1583	1770	3531	1770	3535	1770	3535	1770	3535	1770
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	0	7	85	0	19	5	808	13	18	1037	8
RTOR Reduction (vph)	0	6	0	0	0	16	0	1	0	0	0	0
Lane Group Flow (vph)	0	12	0	85	0	3	5	820	0	18	1045	0
Turn Type	Perm		custom	custom	Prot		Prot		Prot		Prot	
Protected Phases		4				5	2			1	6	
Permitted Phases	4			8		8				1.1	21.1	
Actuated Green, G (s)	6.0			6.0		6.0	1.1	21.1		1.1	21.1	
Effective Green, g (s)	6.0			6.0		6.0	1.1	21.1		1.1	21.1	
Actuated g/C Ratio	0.15			0.15		0.15	0.03	0.52		0.03	0.52	
Clearance Time (s)	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	
Lane Grp Cap (vph)	256			207		236	48	1853		48	1855	
v/s Ratio Prot						0.00	0.23			c0.01	c0.30	
v/s Ratio Perm	0.01			c0.06		0.00						
v/c Ratio	0.05			0.41		0.01	0.10	0.44		0.38	0.56	
Uniform Delay, d1	14.7			15.5		14.6	19.1	5.9		19.2	6.4	
Progression Factor	1.00			1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1			1.3		0.0	1.0	0.2		4.9	0.4	
Delay (s)	14.7			16.8		14.6	20.0	6.1		24.1	6.8	
Level of Service	B			B		B	C	A		C	A	
Approach Delay (s)	14.7			16.4		6.2		7.1				
Approach LOS	B			B		A		A				
<b>Intersection Summary</b>												
HCM Average Control Delay		7.3				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.52										
Actuated Cycle Length (s)		40.2				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  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	38	0	26	98	0	137	29	731	57	42	774	42
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	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Frt	0.95	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00	0.99	1.00	0.99
Flt Protected	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1710	1770	1583	1770	3501	1770	3512	1770	3512	1770	3512	1770
Flt Permitted	0.97	0.71	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1710	1329	1583	1770	3501	1770	3512	1770	3512	1770	3512	1770
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	0	27	103	0	144	31	769	60	44	815	44
RTOR Reduction (vph)	0	22	0	0	0	115	0	11	0	0	7	0
Lane Group Flow (vph)	0	45	0	103	0	29	31	818	0	44	852	0
Turn Type	Perm		custom	custom	Prot		Prot		Prot		Prot	
Protected Phases		4				5	2			1	6	
Permitted Phases	4			8		8				1.3	17.4	
Actuated Green, G (s)	8.0			8.0		8.0	1.3	17.4		2.5	18.6	
Effective Green, g (s)	8.0			8.0		8.0	1.3	17.4		2.5	18.6	
Actuated g/C Ratio	0.20			0.20		0.20	0.03	0.44		0.06	0.47	
Clearance Time (s)	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	
Lane Grp Cap (vph)	343			266		317	58	1527		111	1637	
v/s Ratio Prot						0.02	c0.23			0.02	c0.24	
v/s Ratio Perm	0.03			c0.08		0.02						
v/c Ratio	0.13			0.39		0.09	0.53	0.54		0.40	0.52	
Uniform Delay, d1	13.1			13.8		13.0	19.0	8.3		18.0	7.5	
Progression Factor	1.00			1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2			0.9		0.1	9.1	0.4		2.3	0.3	
Delay (s)	13.3			14.8		13.1	28.2	8.6		20.3	7.8	
Level of Service	B			B		B	C	A		C	A	
Approach Delay (s)	13.3			13.8		9.3		8.4				
Approach LOS	B			B		A		A				
<b>Intersection Summary</b>												
HCM Average Control Delay		9.6				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.46										
Actuated Cycle Length (s)		39.9				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		48.9%				ICU Level of Service		A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗
Volume (vph)	130	171	904	99	196	728
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frft	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3469		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3469		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	137	180	952	104	206	766
RTOR Reduction (vph)	0	16	16	0	0	0
Lane Group Flow (vph)	137	164	1040	0	206	766
Confl. Peds. (#/hr)			25			
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	7.5	16.4	17.2	8.9	30.1	
Effective Green, g (s)	7.5	16.4	17.2	8.9	30.1	
Actuated g/C Ratio	0.16	0.36	0.38	0.20	0.66	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	291	708	1308	345	2336	
v/s Ratio Prot	c0.08	0.05	c0.30	c0.12	0.22	
v/s Ratio Perm		0.06				
v/c Ratio	0.47	0.23	0.79	0.60	0.33	
Uniform Delay, d1	17.3	10.2	12.6	16.7	3.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.2	3.4	2.8	0.1	
Delay (s)	18.5	10.4	16.1	19.5	3.4	
Level of Service	B	B	B	B	A	
Approach Delay (s)	13.9		16.1		6.8	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↖	↗	↖	↗
Volume (vph)	29	33	15	378	4	415	8	616	574	230	492	7
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frft	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1820	1448	1681	1687	1583	1770	3539	1479	1770	3539	1479	1770
Fit Permitted	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1820	1448	1681	1687	1583	1770	3539	1479	1770	3539	1479	1770
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	35	16	398	4	437	8	648	604	242	518	7
RTOR Reduction (vph)	0	0	14	0	0	277	0	0	443	0	1	0
Lane Group Flow (vph)	0	66	2	199	203	160	8	648	161	242	524	0
Confl. Peds. (#/hr)			25				25			25		25
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		6.0	6.0	11.3	11.3	22.0	1.6	16.0	16.0	10.7	25.1	
Effective Green, g (s)		6.0	6.0	11.3	11.3	22.0	1.6	16.0	16.0	10.7	25.1	
Actuated g/C Ratio		0.10	0.10	0.19	0.19	0.37	0.03	0.27	0.27	0.18	0.42	
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	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		182	145	317	318	686	47	944	394	316	1477	
v/s Ratio Prot		c0.04		0.12	c0.12	0.04	0.00	c0.18		c0.14	0.15	
v/s Ratio Perm			0.00			0.06			0.11			
v/c Ratio		0.36	0.01	0.63	0.64	0.23	0.17	0.69	0.41	0.77	0.35	
Uniform Delay, d1		25.2	24.3	22.4	22.5	13.2	28.6	19.7	18.1	23.5	11.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01	0.62	
Incremental Delay, d2		1.2	0.0	3.9	4.2	0.2	1.7	4.1	3.1	9.6	0.6	
Delay (s)		26.4	24.4	26.3	26.6	13.3	30.3	23.8	21.2	33.4	8.0	
Level of Service		C	C	C	C	B	C	C	C	C	A	
Approach Delay (s)		26.0			19.6			22.6			16.0	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	10	105	223	286	54	51	372	242	362	63	172	11
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	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.94	1.00	0.99	1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.96	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1854	1583	1681	1639	3433	3539	1487	1770	3487	1770	1863	1468
Fit Permitted	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1854	1583	1681	1639	3433	3539	1487	1770	3487	1770	1863	1468
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	111	235	301	57	54	392	255	381	66	181	12
RTOR Reduction (vph)	0	0	195	0	21	0	0	0	267	0	8	0
Lane Group Flow (vph)	0	122	40	208	183	0	392	255	114	66	185	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Perm	Split
Protected Phases	4	4		8	8	5	2		1	6		
Permitted Phases			4				2					
Actuated Green, G (s)	10.3	10.3	11.1	11.1	11.6	17.9	17.9	4.7	11.0			
Effective Green, g (s)	10.3	10.3	11.1	11.1	11.6	17.9	17.9	4.7	11.0			
Actuated g/C Ratio	0.17	0.17	0.18	0.18	0.19	0.30	0.30	0.08	0.18			
Clearance Time (s)	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	5.0	3.0	3.0	3.0	5.0			
Lane Grp Cap (vph)	318	272	311	303	664	1056	444	139	639			
v/s Ratio Prot	c0.07		c0.12	0.11	c0.11	0.07		c0.04	c0.05			
v/s Ratio Perm		0.03				0.08						
v/c Ratio	0.38	0.15	0.67	0.60	0.59	0.24	0.26	0.47	0.29			
Uniform Delay, d1	22.0	21.1	22.7	22.4	22.0	15.9	16.0	26.5	21.1			
Progression Factor	1.00	1.00	1.00	1.00	0.73	0.58	1.09	1.00	1.00			
Incremental Delay, d2	0.8	0.3	5.4	3.4	1.6	0.4	1.1	2.5	1.1			
Delay (s)	22.8	21.4	28.1	25.8	17.7	9.6	18.5	29.0	22.3			
Level of Service	C	C	C	C	B	A	B	C	C			
Approach Delay (s)	21.9			27.0		16.0		24.0				
Approach LOS	C			C		B		C				

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	32	152	314	233	17	2	361	81	365	10	179	32
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.85	0.98	1.00	0.98	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1835	1770	1863	1468	1822	1770	1863	1468
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1835	1770	1863	1468	1822	1770	1863	1468
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	160	331	245	18	2	380	85	384	11	188	34
RTOR Reduction (vph)	0	0	123	0	1	0	0	0	295	0	11	0
Lane Group Flow (vph)	34	160	208	245	19	0	380	85	89	0	222	0
Confl. Peds. (#/hr)									25			
Turn Type	Prot	pm+ov	Prot		Split	Perm	Split					
Protected Phases	5	2	3	1	6	3	3		4	4		
Permitted Phases			2				3					
Actuated Green, G (s)	1.5	10.4	24.3	8.6	17.5	13.9	13.9	13.9	10.8			
Effective Green, g (s)	1.5	10.4	24.3	8.6	17.5	13.9	13.9	13.9	10.8			
Actuated g/C Ratio	0.03	0.17	0.41	0.14	0.29	0.23	0.23	0.23	0.18			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	44	325	750	255	538	412	434	342	330			
v/s Ratio Prot	0.02	c0.09	0.06	c0.14	0.01	c0.21	0.05		c0.12			
v/s Ratio Perm			0.07				0.06					
v/c Ratio	0.77	0.49	0.28	0.96	0.03	0.92	0.20	0.26	0.67			
Uniform Delay, d1	28.9	22.3	11.8	25.4	15.1	22.4	18.4	18.7	22.8			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	57.0	1.4	0.2	45.3	0.0	26.0	0.2	0.4	5.3			
Delay (s)	85.9	23.7	12.0	70.7	15.1	48.3	18.6	19.1	28.2			
Level of Service	F	C	B	E	B	D	B	B	C			
Approach Delay (s)	20.4			66.5		32.1		28.2				
Approach LOS	C			E		C		C				

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	788	56	78	1625	124	155	22	73	110	17	20
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	0.99	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	0.95	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.96	1.00
Satd. Flow (prot)	1770	3504	1770	3539	1583	1785	1583	1785	1583	1785	1583	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.66	1.00	1.00	0.59	1.00	0.59	1.00
Satd. Flow (perm)	1770	3504	1770	3539	1583	1231	1583	1096	1583	1096	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	829	59	82	1711	131	163	23	77	116	18	21
RTOR Reduction (vph)	0	7	0	0	64	0	0	57	0	0	0	16
Lane Group Flow (vph)	57	881	0	82	1711	67	0	186	20	0	134	5
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	2.8	31.6		3.4	32.2	32.2	16.1	16.1		16.1		16.1
Effective Green, g (s)	2.8	31.6		3.4	32.2	32.2	16.1	16.1		16.1		16.1
Actuated g/C Ratio	0.04	0.50		0.05	0.51	0.51	0.26	0.26		0.26		0.26
Clearance Time (s)	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
Lane Grp Cap (vph)	79	1755		95	1806	808	314	404		280		404
v/s Ratio Prot	0.03	0.25		c0.05	c0.48							
v/s Ratio Perm					0.04		c0.15	0.04		0.12		0.00
v/c Ratio	0.72	0.50		0.86	0.95	0.08	0.59	0.05		0.48		0.01
Uniform Delay, d1	29.8	10.5		29.6	14.6	7.9	20.6	17.7		19.9		17.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	27.5	0.2		50.8	11.1	0.0	8.0	0.2		5.8		0.1
Delay (s)	57.3	10.7		80.4	25.7	7.9	28.6	18.0		25.7		17.6
Level of Service	E	B		F	C	A	C	B		C		B
Approach Delay (s)	13.5			26.8			25.5			24.6		
Approach LOS	B			C			C			C		

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

PM Peak Hour - Buildout Conditions  
Town Center Specific Plan  
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

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*****
Intersection #18 Mt Hermon Road/Washington Mutual Access
*****
Average Delay (sec/veh):      5.9      Worst Case Level Of Service: F[ 72.7]
*****
Street Name:    Washington Mutual Access      Mt Hermon Road
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Stop Sign      Stop Sign      Uncontrolled      Uncontrolled
Rights:      Include      Include      Include      Include
Lanes:      0 0 1 1 0 0      1 0 0 1 0      1 0 1 1 0      1 0 1 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:      13      0      184      0      0      0      0      45      294      1567      0
Growth Adj:    1.00      1.00      1.00      1.00      1.00      1.00      1.00      1.00      1.00      1.00
Initial Bse:   13      0      184      0      0      0      0      45      294      1567      0
Added Vol:     0      0      0      0      0      0      0      81      0      88      0
PasserByVol:   0      0      0      0      0      0      0      0      0      0      0
Initial Fut:   13      0      184      0      0      0      0      971      45      1655      0
User Adj:      1.00      1.00      1.00      1.00      1.00      1.00      1.00      1.00      1.00      1.00
PHF Adj:       0.95      0.95      0.95      0.95      0.95      0.95      0.95      0.95      0.95      0.95
PHF Volume:    14      0      194      0      0      0      0      1022      47      309      1742      0
Reduct Vol:    0      0      0      0      0      0      0      0      0      0      0
FinalVolume:   14      0      194      0      0      0      0      1022      47      309      1742      0
-----|-----|-----|-----|
Critical Gap Module:
Critical Gp:   6.8      6.5      6.9      7.5      6.5      6.9      xxxxx      xxxxx      xxxxx      4.1      xxxxx      xxxxx
FollowUpTim:  3.5      4.0      3.3      3.5      4.0      3.3      xxxxx      xxxxx      xxxxx      2.2      xxxxx      xxxxx
-----|-----|-----|-----|
Capacity Module:
Cnflct Vol:   2536      3407      535      2872      3431      871      xxxxx      xxxxx      xxxxx      1069      xxxxx      xxxxx
Potent Cap.:  23      7      495      8      7      298      xxxxx      xxxxx      xxxxx      659      xxxxx      xxxxx
Move Cap.:    15      4      495      3      4      298      xxxxx      xxxxx      xxxxx      659      xxxxx      xxxxx
Volume/Cap.:  0.94      0.00      0.39      0.00      0.00      0.00      xxxxx      xxxxx      xxxxx      0.47      xxxxx      xxxxx
-----|-----|-----|-----|
Level Of Service Module:
2Way95thQ:   xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      2.5      xxxxx      xxxxx
Control Del: xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      15.2      xxxxx      xxxxx
LOS by Move:  *      *      *      *      *      *      *      *      *      C      *      *
Movement:    LT - LTR - RT      LT - LTR - RT      LT - LTR - RT      LT - LTR - RT
Shared Cap.: xxxxx      239      xxxxx      xxxxx      xxxxx      0      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx
SharedQueue: xxxxx      7.1      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx
Shrd ConDel: xxxxx      72.7      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx      xxxxx
Shared LOS:  *      F      *      *      *      *      *      *      *      *      *      *
ApproachDel: 72.7      *      xxxxxx      *      xxxxxx      *      xxxxxx
ApproachLOS: F      *      *      *      *      *      *
*****
Note: Queue reported is the number of cars per lane.
*****

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PM Peak Hour - Buildout Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.216
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 44 0 108 0 0 0 0 31 97 107 25 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 44 0 108 0 0 0 0 31 97 107 25 1
Added Vol: 5 0 12 0 0 0 0 4 6 6 3 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 49 0 120 0 0 0 0 35 103 113 28 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 52 0 126 0 0 0 0 37 108 119 29 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 52 0 126 0 0 0 0 37 108 119 29 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 52 0 126 0 0 0 0 37 108 119 29 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.28 0.01 0.71 0.00 1.00 0.00 0.00 0.25 0.75 0.79 0.20 0.01
Final Sat.: 239 0 584 0 710 0 0 219 645 605 150 5
Capacity Analysis Module:
Vol/Sat: 0.22 0.00 0.22 xxxx 0.00 xxxx xxxx 0.17 0.17 0.20 0.20 0.20
Crit Moves: \*\*\*\*
Delay/Veh: 8.2 8.2 8.2 0.0 0.0 0.0 0.0 7.8 7.8 8.6 8.6 8.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.2 8.2 8.2 0.0 0.0 0.0 0.0 7.8 7.8 8.6 8.6 8.6
LOS by Move: A A A \* \* \* \* A A A A A
ApproachDel: 8.2 xxxx 7.8 8.6
Delay Adj: 1.00 xxxx 1.00 1.00
ApprAdjDel: 8.2 xxxx 7.8 8.6
LOS by Appr: A \* A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.2 0.2 0.2 0.2 0.2 0.2

PM Peak Hour - Buildout Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 6.8 Worst Case Level Of Service: B[ 13.0]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1! 0 0 0 1 0 0 0 0
Volume Module:
Base Vol: 124 40 3 0 41 23 29 3 139 2 6 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 124 40 3 0 41 23 29 3 139 2 6 0
Added Vol: 12 5 0 0 3 2 3 0 8 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 136 45 3 0 44 25 32 3 147 2 6 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 143 47 3 0 46 26 34 3 155 2 6 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 143 47 3 0 46 26 34 3 155 2 6 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx xxxx xxxx 7.1 6.5 6.2 7.1 6.5 xxxx
FollowUpTim: 2.2 xxxx xxxx xxxx xxxx 3.5 4.0 3.3 3.5 4.0 xxxx
Capacity Module:
Cnflct Vol: 73 xxxx xxxx xxxx xxxx 398 396 59 474 408 xxxx
Potent Cap.: 1540 xxxx xxxx xxxx xxxx 566 544 1012 504 536 xxxx
Move Cap.: 1540 xxxx xxxx xxxx xxxx 517 489 1012 392 482 xxxx
Volume/Cap: 0.09 xxxx xxxx xxxx xxxx 0.07 0.01 0.15 0.01 0.01 xxxx
Level Of Service Module:
2Way95thQ: 0.3 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 7.6 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx 853 xxxx 456 xxxx xxxx
SharedQueue:xxxx xxxx xxxx xxxx xxxx xxxx 0.9 xxxx 0.1 xxxx xxxx
Shrd ConDel:xxxx xxxx xxxx xxxx xxxx xxxx 10.4 xxxx 13.0 xxxx xxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 10.4 13.0
ApproachLOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Note: Queue reported is the number of cars per lane.

### HCM Signalized Intersection Capacity Analysis

#### 5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔	
Volume (vph)	461	965	90	156	1002	431	117	102	142	461	92	421	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00	
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		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	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3433	3370		1770	3438	1478	1681	1761	1478	3433	1863	1550	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3433	3370		1770	3438	1478	1681	1761	1478	3433	1863	1550	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	470	985	92	159	1022	440	119	104	145	470	94	430	
RTOR Reduction (vph)	0	4	0	0	0	239	0	0	126	0	0	0	
Lane Group Flow (vph)	470	1073	0	159	1022	201	107	116	19	470	94	430	
Confl. Peds. (#/hr)			30			30			30			30	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free	
Protected Phases	5	2		1	6		8	8		4	4		
Permitted Phases						6			8			Free	
Actuated Green, G (s)	20.7	58.5		16.9	54.7	54.7	16.9	16.9	16.9	21.2	21.2	130.0	
Effective Green, g (s)	20.7	58.5		16.9	54.7	54.7	16.9	16.9	16.9	21.2	21.2	130.0	
Actuated g/C Ratio	0.16	0.45		0.13	0.42	0.42	0.13	0.13	0.13	0.16	0.16	1.00	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	547	1517		230	1447	622	219	229	192	560	304	1550	
v/s Ratio Prot	c0.14	c0.32		0.09	0.30		0.06	c0.07		c0.14	0.05		
v/s Ratio Perm						0.14			0.01			c0.28	
v/c Ratio	0.86	0.71		0.69	0.71	0.32	0.49	0.51	0.10	0.84	0.31	0.28	
Uniform Delay, d1	53.2	28.8		54.1	31.0	25.2	52.5	52.7	49.8	52.7	47.9	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	
Incremental Delay, d2	12.7	2.8		8.6	2.9	1.4	1.7	1.8	0.2	10.7	0.6	0.4	
Delay (s)	65.9	31.6		62.7	34.0	26.6	54.3	54.4	50.1	63.4	48.5	0.4	
Level of Service	E	C		E	C	C	D	D	D	E	D	A	
Approach Delay (s)		42.1			34.8			52.7			34.8		
Approach LOS		D			C			D			C		
<b>Intersection Summary</b>													
HCM Average Control Delay	38.7		HCM Level of Service					D					
HCM Volume to Capacity ratio	0.71												
Actuated Cycle Length (s)	130.0		Sum of lost time (s)					12.0					
Intersection Capacity Utilization	71.4%		ICU Level of Service					C					
Analysis Period (min)	15												
c Critical Lane Group													

### HCM Signalized Intersection Capacity Analysis

#### 7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	
Volume (vph)	0	1123	384	186	764	0	371	0	301	10	112	393	
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	
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00	
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	1538	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00	
Satd. Flow (perm)		3438	1583	1770	3539		2448		1583		1855	1538	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	0	1146	392	190	780	0	379	0	307	10	114	401	
RTOR Reduction (vph)	0	0	253	0	0	0	0	0	223	0	0	78	
Lane Group Flow (vph)	0	1146	139	190	780	0	379	0	84	0	124	323	
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%	
Turn Type		Perm		Prot		custom		custom		Split		Perm	
Protected Phases		2		1		6				4		4	
Permitted Phases			2				8		18			4	
Actuated Green, G (s)		31.1	31.1	8.0	43.1		12.0		24.0		20.9	20.9	
Effective Green, g (s)		31.1	31.1	8.0	43.1		12.0		24.0		20.9	20.9	
Actuated g/C Ratio		0.35	0.35	0.09	0.49		0.14		0.27		0.24	0.24	
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)		1215	559	161	1733		334		432		441	365	
v/s Ratio Prot		c0.33		c0.11	0.22						0.07		
v/s Ratio Perm			0.09				c0.15		0.05			c0.21	
v/c Ratio		0.94	0.25	1.18	0.45		1.13		0.19		0.28	0.89	
Uniform Delay, d1		27.6	20.2	40.0	14.7		38.0		24.6		27.4	32.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2		14.3	0.2	127.6	0.2		90.9		0.2		0.4	21.7	
Delay (s)		41.9	20.4	167.6	14.9		128.9		24.8		27.8	54.1	
Level of Service		D	C	F	B		F		C		C	D	
Approach Delay (s)		36.4			44.8			82.3			47.9		
Approach LOS		D			D			F			D		
<b>Intersection Summary</b>													
HCM Average Control Delay	48.7		HCM Level of Service					D					
HCM Volume to Capacity ratio	0.98												
Actuated Cycle Length (s)	88.0		Sum of lost time (s)					16.0					
Intersection Capacity Utilization	68.6%		ICU Level of Service					C					
Analysis Period (min)	15												

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	15	1115	432	57	132	10
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1174	455	60	139	11
RTOR Reduction (vph)	0	0	0	35	0	8
Lane Group Flow (vph)	16	1174	455	25	139	3
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.2	22.6	17.4	17.4	11.2	11.2
Effective Green, g (s)	1.2	22.6	17.4	17.4	11.2	11.2
Actuated g/C Ratio	0.03	0.54	0.42	0.42	0.27	0.27
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)	51	1859	753	659	474	424
v/s Ratio Prot	0.01	c0.34	0.25		c0.08	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.31	0.63	0.60	0.04	0.29	0.01
Uniform Delay, d1	19.9	6.7	9.5	7.2	12.2	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.7	1.4	0.0	1.6	0.0
Delay (s)	23.4	7.4	10.9	7.3	13.7	11.3
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.6	10.5		13.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	41.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	5	1166	27	106	465	46	16	6	168	113	6	5
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	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.96	1.00		0.96	1.00	0.95
Satd. Flow (prot)	1770	3429		1770	3401		1796	1583		1778	1583	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.80	1.00		0.72	1.00	1.00
Satd. Flow (perm)	1770	3429		1770	3401		1491	1583		1340	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1227	28	112	489	48	17	6	177	119	6	5
RTOR Reduction (vph)	0	3	0	0	11	0	0	0	140	0	0	4
Lane Group Flow (vph)	5	1252	0	112	526	0	0	23	37	0	125	1
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6		4	4		8	8	8
Permitted Phases							4	4		8	8	8
Actuated Green, G (s)	1.3	21.4		5.9	26.0		10.5	10.5		10.5	10.5	10.5
Effective Green, g (s)	1.3	21.4		5.9	26.0		10.5	10.5		10.5	10.5	10.5
Actuated g/C Ratio	0.03	0.43		0.12	0.52		0.21	0.21		0.21	0.21	0.21
Clearance Time (s)	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
Lane Grp Cap (vph)	46	1474		210	1776		314	334		283	334	334
v/s Ratio Prot	0.00	c0.37		c0.06	0.15							
v/s Ratio Perm							0.02	0.02		c0.09	0.00	0.00
v/c Ratio	0.11	0.85		0.53	0.30		0.07	0.11		0.44	0.00	0.00
Uniform Delay, d1	23.7	12.8		20.7	6.7		15.8	15.9		17.1	15.5	15.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	4.8		2.6	0.1		0.1	0.1		1.1	0.0	0.0
Delay (s)	24.7	17.5		23.2	6.8		15.8	16.0		18.2	15.5	15.5
Level of Service	C	B		C	A		B	B		B	B	B
Approach Delay (s)		17.6			9.7		16.0			18.1		
Approach LOS		B			A		B			B		

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	140	1421	14	34	724	183	7	6	16	159	7	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
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1814	1583		1777	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.87	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		1627	1583		1351	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	1496	15	36	762	193	7	6	17	167	7	89
RTOR Reduction (vph)	0	0	0	0	0	78	0	0	14	0	0	74
Lane Group Flow (vph)	147	1511	0	36	762	115	0	13	3	0	174	15
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8		8		4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	14.9	78.7		5.4	69.2	69.2		19.9	19.9		19.9	19.9
Effective Green, g (s)	14.9	78.7		5.4	69.2	69.2		19.9	19.9		19.9	19.9
Actuated g/C Ratio	0.13	0.68		0.05	0.60	0.60		0.17	0.17		0.17	0.17
Clearance Time (s)	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
Lane Grp Cap (vph)	227	2330		82	2051	944		279	272		232	272
v/s Ratio Prot	c0.08	c0.44		0.02	0.22			0.01	0.00		c0.13	0.01
v/s Ratio Perm					0.07			0.01	0.00		c0.13	0.01
v/c Ratio	0.65	0.65		0.44	0.37	0.12		0.05	0.01		0.75	0.06
Uniform Delay, d1	48.1	10.7		53.8	12.1	10.2		40.1	39.9		45.7	40.2
Progression Factor	1.00	1.00		1.08	0.63	0.25		1.00	1.00		1.00	1.00
Incremental Delay, d2	6.2	1.4		3.5	0.5	0.2		0.1	0.0		12.8	0.1
Delay (s)	54.3	12.1		61.9	8.1	2.8		40.2	39.9		58.4	40.3
Level of Service	D	B		E	A	A		D	D		E	D
Approach Delay (s)		15.9			9.1			40.0			52.3	
Approach LOS		B			A			D			D	

Intersection Summary

HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	32	1575	2	46	968	109	4	1	17	67	2	3
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3438		1770	3438	1583		1791	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.86	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3438	1583		1603	1583		1358	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1658	2	48	1019	115	4	1	18	71	2	3
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	16	0	0	3
Lane Group Flow (vph)	34	1660	0	48	1019	84	0	5	2	0	73	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4		4		4	
Permitted Phases						6	4		4	4		4
Actuated Green, G (s)	5.3	82.6		7.4	84.7	84.7		14.0	14.0		14.0	14.0
Effective Green, g (s)	5.3	82.6		7.4	84.7	84.7		14.0	14.0		14.0	14.0
Actuated g/C Ratio	0.05	0.71		0.06	0.73	0.73		0.12	0.12		0.12	0.12
Clearance Time (s)	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
Lane Grp Cap (vph)	81	2448		113	2510	1156		193	191		164	191
v/s Ratio Prot	0.02	c0.48		c0.03	0.30			0.00	0.00		c0.05	0.00
v/s Ratio Perm					0.05			0.00	0.00		c0.05	0.00
v/c Ratio	0.42	0.68		0.42	0.41	0.07		0.03	0.01		0.45	0.00
Uniform Delay, d1	53.9	9.3		52.3	6.0	4.5		45.0	44.9		47.4	44.9
Progression Factor	1.28	0.85		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	1.2		2.6	0.5	0.1		0.1	0.0		1.9	0.0
Delay (s)	71.7	9.1		54.8	6.5	4.6		45.0	44.9		49.3	44.9
Level of Service	E	A		D	A	A		D	D		D	D
Approach Delay (s)		10.3			8.3			45.0			49.1	
Approach LOS		B			A			D			D	

Intersection Summary

HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	635	1153	40	107	627	601	74	148	168	654	108	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3414		1770	3438	1504	1681	1765	1504	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3414		1770	3438	1504	1681	1765	1504	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	648	1177	41	109	640	613	76	151	171	667	110	309
RTOR Reduction (vph)	0	3	0	0	0	465	0	0	142	0	0	0
Lane Group Flow (vph)	648	1215	0	109	640	148	68	159	29	667	110	309
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	15.7	28.1		9.2	21.6	21.6	15.3	15.3	15.3	20.9	20.9	90.0
Effective Green, g (s)	15.7	28.1		9.2	21.6	21.6	15.3	15.3	15.3	20.9	20.9	90.0
Actuated g/C Ratio	0.17	0.31		0.10	0.24	0.24	0.17	0.17	0.17	0.23	0.23	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	599	1066		181	825	361	286	300	256	797	433	1550
v/s Ratio Prot	c0.19	c0.36		0.06	0.19		0.04	c0.09		c0.19	0.06	
v/s Ratio Perm						0.10			0.02			0.20
v/c Ratio	1.08	1.14		0.60	0.78	0.41	0.24	0.53	0.11	0.84	0.25	0.20
Uniform Delay, d1	37.1	30.9		38.6	31.9	28.8	32.3	34.1	31.6	32.9	28.2	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	60.9	74.6		5.5	7.1	3.4	0.4	1.8	0.2	7.6	0.3	0.3
Delay (s)	98.0	105.6		44.2	39.0	32.2	32.7	35.9	31.8	40.6	28.5	0.3
Level of Service	F	F		D	D	C	C	D	C	D	C	A
Approach Delay (s)		102.9			36.4			33.6			27.9	
Approach LOS		F			D			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay	60.5		HCM Level of Service				E					
HCM Volume to Capacity ratio	0.90											
Actuated Cycle Length (s)	90.0		Sum of lost time (s)				12.0					
Intersection Capacity Utilization	85.7%		ICU Level of Service				E					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	123	1657	32	31	1390	160	13	3	36	140	2	121
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.96	1.00	0.95	0.95	0.95	1.00
Satd. Flow (prot)	1770	3430		1770	3438	1583	1790	1583	1681	1688	1583	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.82	1.00	0.75	0.72	1.00	1.00
Satd. Flow (perm)	1770	3430		1770	3438	1583	1526	1583	1322	1275	1583	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	126	1691	33	32	1418	163	13	3	37	143	2	123
RTOR Reduction (vph)	0	1	0	0	0	58	0	0	32	0	0	105
Lane Group Flow (vph)	126	1723	0	32	1418	105	0	16	5	73	72	18
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	12.9	82.2		5.2	74.5	74.5	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	12.9	82.2		5.2	74.5	74.5	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.11	0.71		0.04	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
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)	197	2431		79	2208	1017	218	227	189	182	227	227
v/s Ratio Prot	c0.07	c0.50		0.02	0.41		0.01	0.00	0.06	c0.06	0.01	
v/s Ratio Perm						0.07						0.01
v/c Ratio	0.64	0.71		0.41	0.64	0.10	0.07	0.02	0.39	0.40	0.08	0.08
Uniform Delay, d1	49.3	9.9		53.9	12.6	7.9	43.0	42.7	45.1	45.1	43.1	43.1
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	6.7	1.8		3.4	1.5	0.2	0.1	0.0	1.3	1.4	0.1	0.1
Delay (s)	56.0	11.7		57.3	14.1	8.2	43.2	42.8	46.4	46.6	43.2	43.2
Level of Service	E	B		E	B	A	D	D	D	D	D	D
Approach Delay (s)		14.7			14.3		42.9			45.0		
Approach LOS		B			B		D			D		
<b>Intersection Summary</b>												
HCM Average Control Delay	17.1		HCM Level of Service				B					
HCM Volume to Capacity ratio	0.64											
Actuated Cycle Length (s)	116.0		Sum of lost time (s)				8.0					
Intersection Capacity Utilization	73.5%		ICU Level of Service				D					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑
Volume (vph)	0	1698	107	121	1136	0	265	0	189	6	37	216
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1850	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.73		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2632		1583		1850	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1733	109	123	1159	0	270	0	193	6	38	220
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	172	0	0	86
Lane Group Flow (vph)	0	1733	62	123	1159	0	270	0	21	0	44	134
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		8					4
Actuated Green, G (s)		51.0	51.0	10.2	65.2		11.0		11.0		10.8	10.8
Effective Green, g (s)		51.0	51.0	10.2	65.2		11.0		11.0		10.8	10.8
Actuated g/C Ratio		0.52	0.52	0.10	0.66		0.11		0.11		0.11	0.11
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)		1771	815	182	2331		292		176		202	168
v/s Ratio Prot		c0.50		c0.07	0.33						0.02	
v/s Ratio Perm			0.04				c0.10		0.01			c0.09
v/c Ratio		0.98	0.08	0.68	0.50		0.92		0.12		0.22	0.80
Uniform Delay, d1		23.5	12.1	42.8	8.6		43.6		39.6		40.2	43.0
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		16.4	0.0	9.5	0.2		33.3		0.3		0.5	22.3
Delay (s)		39.8	12.2	52.3	8.7		76.9		40.0		40.8	65.3
Level of Service		D	B	D	A		E		D		D	E
Approach Delay (s)		38.2			12.9		61.5				61.2	
Approach LOS		D			B		E				E	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑	↑
Volume (vph)	211	192	156	1144	658	144
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.95
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1511
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1511
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	222	202	164	1204	693	152
RTOR Reduction (vph)	0	165	0	0	0	65
Lane Group Flow (vph)	222	37	164	1204	693	87
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot		Perm	
Protected Phases		4	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	21.5	21.5	16.1	86.5	66.4	66.4
Effective Green, g (s)	21.5	21.5	16.1	86.5	66.4	66.4
Actuated g/C Ratio	0.19	0.19	0.14	0.75	0.57	0.57
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)	328	278	246	2639	2911	865
v/s Ratio Prot	c0.13		c0.09	c0.34	0.14	
v/s Ratio Perm		0.02				0.06
v/c Ratio	0.68	0.13	0.67	0.46	0.24	0.10
Uniform Delay, d1	44.0	39.5	47.4	5.7	12.3	11.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	0.2	6.7	0.6	0.2	0.2
Delay (s)	49.5	39.7	54.1	6.3	12.5	11.5
Level of Service	D	D	D	A	B	B
Approach Delay (s)	44.8			12.0	12.3	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	8	0	14	16	0	37	103	1357	13	5	817	16
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.91	1.00		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.99	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1662	1770		3534	3534		1770	3529	
Flt Permitted	0.77	1.00		0.89	0.95		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1433	1583		1510	1770		3534	3534		1770	3529	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	0	15	17	0	39	108	1428	14	5	860	17
RTOR Reduction (vph)	0	0	14	0	35	0	1	0	0	2	0	0
Lane Group Flow (vph)	0	8	1	0	21	0	108	1441	0	5	875	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.2	5.2		5.2		4.2	33.8		1.2	30.8	
Effective Green, g (s)		5.2	5.2		5.2		4.2	33.8		1.2	30.8	
Actuated g/C Ratio		0.10	0.10		0.10		0.08	0.65		0.02	0.59	
Clearance Time (s)		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	
Lane Grp Cap (vph)	143	158		150		142	2288	2288		41	2082	
v/s Ratio Prot							c0.06	c0.41		0.00	0.25	
v/s Ratio Perm	0.01	0.00		c0.01								
v/c Ratio	0.06	0.01		0.14		0.76	0.63			0.12	0.42	
Uniform Delay, d1	21.3	21.2		21.5		23.5	5.5			25.0	5.8	
Progression Factor	1.00	1.00		1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.2	0.0		0.4		21.0	0.5			1.3	0.6	
Delay (s)	21.4	21.2		21.9		44.5	6.0			26.3	6.5	
Level of Service	C	C		C		D	A			C	A	
Approach Delay (s)	21.3			21.9			8.7			6.6		
Approach LOS	C			C			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay		8.4				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		52.2				Sum of lost time (s)		12.0				
Intersection Capacity Utilization		63.6%				ICU Level of Service		B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	16	2	45	17	1	11	61	1152	133	97	894	30
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt	1.00	0.85	1.00	0.86	1.00	0.98	1.00	0.98	1.00	1.00	1.00	1.00
Flt Protected	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1783	1583	1770	1605	1770	3484	1770	3484	1770	3522	1770	3522
Flt Permitted	0.74	1.00	0.77	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1377	1583	1433	1605	1770	3484	1770	3484	1770	3522	1770	3522
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	2	47	18	1	12	64	1213	140	102	941	32
RTOR Reduction (vph)	0	0	42	0	11	0	13	0	0	4	0	0
Lane Group Flow (vph)	0	19	5	18	2	0	64	1340	0	102	969	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		5.2	5.2	5.2	5.2		4.2	24.7		4.2	24.7	
Effective Green, g (s)		5.2	5.2	5.2	5.2		4.2	24.7		4.2	24.7	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.09	0.54		0.09	0.54	
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)	155	179	162	181		161	1867	1867		161	1887	
v/s Ratio Prot							0.00	0.04	c0.38	0.06	c0.28	
v/s Ratio Perm	c0.01	0.00	0.01									
v/c Ratio	0.12	0.03	0.11	0.01		0.40	0.72			0.63	0.51	
Uniform Delay, d1	18.4	18.2	18.4	18.2		19.8	8.1			20.2	6.9	
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.4	0.1	0.3	0.0		1.6	1.3			7.9	1.0	
Delay (s)	18.8	18.3	18.7	18.2		21.4	9.4			28.1	7.9	
Level of Service	B	B	B	B		C	A			C	A	
Approach Delay (s)	18.4			18.5			10.0			9.8		
Approach LOS	B			B			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay		10.2				HCM Level of Service		B				
HCM Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		46.1				Sum of lost time (s)		12.0				
Intersection Capacity Utilization		60.2%				ICU Level of Service		B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔	↔	↔	↔	↔
Volume (vph)	3	0	2	28	0	5	3	1001	86	40	902	4
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	1.00		1.00		1.00		1.00	0.95	1.00	0.95	1.00	0.95
Frt	0.95		1.00		0.85		1.00	0.99	1.00	1.00	1.00	1.00
Fit Protected	0.97		0.95		1.00		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1711		1770		1583		1770	3497	1770	3537	1770	3537
Fit Permitted	0.97		1.00		1.00		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1711		1863		1583		1770	3497	1770	3537	1770	3537
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	0	2	29	0	5	3	1054	91	42	949	4
RTOR Reduction (vph)	0	2	0	0	0	5	0	7	0	0	0	0
Lane Group Flow (vph)	0	3	0	29	0	0	3	1138	0	42	953	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	1.6			1.6		1.6	1.1	24.6		2.9	26.4	
Effective Green, g (s)	1.6			1.6		1.6	1.1	24.6		2.9	26.4	
Actuated g/C Ratio	0.04			0.04		0.04	0.03	0.60		0.07	0.64	
Clearance Time (s)	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	
Lane Grp Cap (vph)	67			73		62	47	2093		125	2272	
v/s Ratio Prot							0.00	c0.33		c0.02	0.27	
v/s Ratio Perm	0.00			c0.02		0.00						
v/c Ratio	0.05			0.40		0.00	0.06	0.54		0.34	0.42	
Uniform Delay, d1	19.0			19.3		19.0	19.5	4.9		18.2	3.6	
Progression Factor	1.00			1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3			3.5		0.0	0.6	0.3		1.6	0.1	
Delay (s)	19.3			22.8		19.0	20.1	5.2		19.8	3.7	
Level of Service	B			C		B	C	A		B	A	
Approach Delay (s)	19.3			22.2		22.2		5.2		4.4	4.4	
Approach LOS	B			C		C		A		A	A	
<b>Intersection Summary</b>												
HCM Average Control Delay				5.2			HCM Level of Service				A	
HCM Volume to Capacity ratio				0.51								
Actuated Cycle Length (s)				41.1			Sum of lost time (s)				12.0	
Intersection Capacity Utilization				52.1%			ICU Level of Service				A	
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔	↔	↔	↔	↔
Volume (vph)	28	0	19	46	0	40	11	994	108	72	850	16
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	1.00		1.00		1.00		1.00	0.95	1.00	0.95	1.00	0.95
Frt	0.94		1.00		0.85		1.00	0.99	1.00	1.00	1.00	1.00
Fit Protected	0.97		0.95		1.00		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1710		1770		1583		1770	3487	1770	3529	1770	3529
Fit Permitted	0.97		0.74		1.00		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1710		1380		1583		1770	3487	1770	3529	1770	3529
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	0	20	48	0	42	12	1046	114	76	895	17
RTOR Reduction (vph)	0	18	0	0	0	37	0	13	0	0	2	0
Lane Group Flow (vph)	0	31	0	48	0	5	12	1147	0	76	910	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	5.4			5.4		5.4	1.4	22.8		4.2	25.6	
Effective Green, g (s)	5.4			5.4		5.4	1.4	22.8		4.2	25.6	
Actuated g/C Ratio	0.12			0.12		0.12	0.03	0.51		0.09	0.58	
Clearance Time (s)	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	
Lane Grp Cap (vph)	208			168		193	56	1791		167	2035	
v/s Ratio Prot							0.01	c0.33		0.04	c0.26	
v/s Ratio Perm	0.02			c0.03		0.00						
v/c Ratio	0.15			0.29		0.03	0.21	0.64		0.46	0.45	
Uniform Delay, d1	17.4			17.7		17.2	21.0	7.8		19.0	5.4	
Progression Factor	1.00			1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3			0.9		0.1	1.9	0.8		2.0	0.2	
Delay (s)	17.8			18.7		17.2	22.9	8.6		21.0	5.5	
Level of Service	B			B		B	C	A		C	A	
Approach Delay (s)	17.8			18.0		18.0		8.8		6.7	6.7	
Approach LOS	B			B		B		A		A	A	
<b>Intersection Summary</b>												
HCM Average Control Delay				8.4			HCM Level of Service				A	
HCM Volume to Capacity ratio				0.58								
Actuated Cycle Length (s)				44.4			Sum of lost time (s)				12.0	
Intersection Capacity Utilization				57.6%			ICU Level of Service				B	
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	42	54	872	70	259	943
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3486		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3486		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	57	918	74	273	993
RTOR Reduction (vph)	0	20	12	0	0	0
Lane Group Flow (vph)	44	37	980	0	273	993
Confl. Peds. (#/hr)				25		
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	3.1	12.5	15.8	9.4	29.2	
Effective Green, g (s)	3.1	12.5	15.8	9.4	29.2	
Actuated g/C Ratio	0.08	0.31	0.39	0.23	0.72	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	136	648	1367	413	2564	
v/s Ratio Prot	c0.02	0.01	c0.28	c0.15	0.28	
v/s Ratio Perm		0.01				
v/c Ratio	0.32	0.06	0.72	0.66	0.39	
Uniform Delay, d1	17.6	9.8	10.4	14.0	2.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.0	1.8	3.9	0.1	
Delay (s)	19.0	9.8	12.2	17.9	2.2	
Level of Service	B	A	B	B	A	
Approach Delay (s)	13.8		12.2		5.6	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	4	10	4	481	39	502	17	522	354	279	706	18
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frbp, ped/bikes	1.00	0.77	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1838	1215	1681	1697	1583	1770	3539	1461	1770	3522		
Fit Permitted	0.99	1.00	0.95	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1838	1215	1681	1697	1583	1770	3539	1461	1770	3522		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	11	4	506	41	528	18	549	373	294	743	19
RTOR Reduction (vph)	0	0	4	0	0	272	0	0	293	0	2	0
Lane Group Flow (vph)	0	15	0	273	274	256	18	549	80	294	760	0
Confl. Peds. (#/hr)				25					25			25
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		2.0	2.0	14.4	14.4	29.1	1.6	12.9	12.9	14.7	26.0	
Effective Green, g (s)		2.0	2.0	14.4	14.4	29.1	1.6	12.9	12.9	14.7	26.0	
Actuated g/C Ratio		0.03	0.03	0.24	0.24	0.49	0.03	0.22	0.22	0.24	0.43	
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	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		61	41	403	407	873	47	761	314	434	1526	
v/s Ratio Prot		c0.01		c0.16	0.16	0.07	0.01	c0.16		c0.17	0.22	
v/s Ratio Perm			0.00			0.09			0.05			
v/c Ratio		0.25	0.00	0.68	0.67	0.29	0.38	0.72	0.26	0.68	0.50	
Uniform Delay, d1		28.3	28.0	20.7	20.7	9.3	28.7	21.9	19.6	20.5	12.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.12	0.70	
Incremental Delay, d2		2.1	0.0	4.5	4.4	0.2	5.1	5.9	2.0	3.6	1.0	
Delay (s)		30.4	28.1	25.2	25.0	9.5	33.8	27.7	21.5	26.6	9.6	
Level of Service		C	C	C	C	A	C	C	C	C	A	
Approach Delay (s)		29.9			17.4			25.4			14.3	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	19	192	321	295	17	18	454	299	227	101	321	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	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	0.95	0.95	0.97	0.95	0.97	0.95	1.00	1.00	0.95	0.95
Frbp, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.93	1.00	0.99	1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.98	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.96	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1854	1583	1681	1665	3433	3539	1478	1770	3482	1770	1863	1450
Fit Permitted	1.00	1.00	0.95	0.96	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1854	1583	1681	1665	3433	3539	1478	1770	3482	1770	1863	1450
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	202	338	311	18	19	478	315	239	106	338	25
RTOR Reduction (vph)	0	0	266	0	7	0	0	0	176	0	9	0
Lane Group Flow (vph)	0	222	72	174	167	0	478	315	63	106	354	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Perm	Split
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)		10.7	10.7	10.6	10.6		11.8	15.8	15.8	6.9	10.9	
Effective Green, g (s)		10.7	12.7	10.6	10.6		11.8	15.8	15.8	6.9	10.9	
Actuated g/C Ratio		0.18	0.21	0.18	0.18		0.20	0.26	0.26	0.12	0.18	
Clearance Time (s)		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		5.0	3.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		331	335	297	294		675	932	389	204	633	
v/s Ratio Prot		c0.12		c0.10	0.10		c0.14	c0.09		0.06	c0.10	
v/s Ratio Perm			0.05					0.04				
v/c Ratio		0.67	0.21	0.59	0.57		0.71	0.34	0.16	0.52	0.56	
Uniform Delay, d1		23.0	19.5	22.7	22.6		22.5	17.9	17.0	25.0	22.4	
Progression Factor		1.00	1.00	1.00	1.00		0.74	0.66	0.76	1.00	1.00	
Incremental Delay, d2		5.3	0.3	2.9	2.5		3.3	0.8	0.7	2.2	3.5	
Delay (s)		28.3	19.8	25.6	25.1		20.0	12.6	13.6	27.2	25.9	
Level of Service		C	B	C	C		B	B	B	C	C	
Approach Delay (s)		23.2			25.4			16.3			26.2	
Approach LOS		C			C			B			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			21.1			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.67									
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  
 16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	161	84	370	483	95	22	229	218	188	14	93	22
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97	1.00	1.00	0.85	0.98	1.00	0.99	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.99	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1810	1770	1863	1450	1810	1770	1863	1450
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.99	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1810	1770	1863	1450	1810	1770	1863	1450
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	169	88	389	508	100	23	241	229	198	15	98	23
RTOR Reduction (vph)	0	0	179	0	11	0	0	0	160	0	11	0
Lane Group Flow (vph)	169	88	210	508	112	0	241	229	38	0	125	0
Confl. Peds. (#/hr)									25			
Turn Type	Prot		pm+ov	Prot		Split		Perm	Split		Perm	Split
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2					3				
Actuated Green, G (s)	6.5	7.7	19.8	20.2	21.4		12.1	12.1	12.1		7.6	
Effective Green, g (s)	6.5	7.7	19.8	20.2	21.4		12.1	12.1	12.1		7.6	
Actuated g/C Ratio	0.10	0.12	0.31	0.32	0.34		0.19	0.19	0.19		0.12	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	181	226	592	562	609		337	354	276		216	
v/s Ratio Prot	0.10	0.05	c0.07	c0.29	0.06		c0.14	0.12			c0.07	
v/s Ratio Perm			0.07					0.03				
v/c Ratio	0.93	0.39	0.35	0.90	0.18		0.72	0.65	0.14		0.58	
Uniform Delay, d1	28.3	25.8	17.0	20.8	14.9		24.1	23.8	21.4		26.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	47.8	1.3	0.4	17.9	0.2		7.0	4.0	0.2		3.9	
Delay (s)	76.1	27.1	17.3	38.7	15.1		31.2	27.8	21.6		30.4	
Level of Service	E	C	B	D	B		C	C	C		C	
Approach Delay (s)		34.0			34.1			27.2			30.4	
Approach LOS		C			C			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			31.6			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			63.6			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			68.0%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	39	1441	61	56	731	70	54	9	69	72	7	5
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Flt	1.00	0.99	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.96	1.00	0.96	1.00	0.96	1.00	1.00
Satd. Flow (prot)	1770	3518	1770	3539	1583	1786	1583	1781	1583	1781	1583	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.75	1.00	0.73	1.00	0.73	1.00	1.00
Satd. Flow (perm)	1770	3518	1770	3539	1583	1394	1583	1355	1583	1355	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	1517	64	59	769	74	57	9	73	76	7	5
RTOR Reduction (vph)	0	4	0	0	0	33	0	0	55	0	0	4
Lane Group Flow (vph)	41	1577	0	59	769	41	0	66	18	0	83	1
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	3.8	45.2		5.2	46.6	46.6		20.9	20.9		20.9	20.9
Effective Green, g (s)	3.8	45.2		5.2	46.6	46.6		20.9	20.9		20.9	20.9
Actuated g/C Ratio	0.05	0.54		0.06	0.56	0.56		0.25	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
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)	81	1909		110	1980	886		350	397		340	397
v/s Ratio Prot	0.02	c0.45		c0.03	0.22							
v/s Ratio Perm						0.03		0.05	0.01		c0.06	0.00
v/c Ratio	0.51	0.83		0.54	0.39	0.05		0.19	0.05		0.24	0.00
Uniform Delay, d1	38.8	15.8		37.9	10.3	8.3		24.5	23.6		24.9	23.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.9	3.1		5.0	0.1	0.0		1.2	0.2		1.7	0.0
Delay (s)	43.7	18.9		42.8	10.5	8.3		25.7	23.9		26.6	23.4
Level of Service	D	B		D	B	A		C	C		C	C
Approach Delay (s)	19.5			12.4			24.7			26.4		
Approach LOS	B			B			C			C		

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

AM Peak Hour - Buildout plus Project  
 Town Center Specific Plan  
 City of Scotts Valley

Level of Service Computation Report  
 2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #18 Mt Hermon Road/Washington Mutual Access  
 \*\*\*\*\*

Average Delay (sec/veh): 30.2 Worst Case Level Of Service: F[1473.9]  
 \*\*\*\*\*

Street Name: Washington Mutual Access Mt Hermon Road  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include  
 Lanes: 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0

Volume Module:  
 Base Vol: 2 0 111 0 0 0 0 1475 22 162 683 0  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 2 0 111 0 0 0 0 1475 22 162 683 0  
 Added Vol: 0 0 0 40 0 3 6 99 0 0 102 31  
 PasserByVol: 0 0 0 6 0 3 6 -6 0 0 -3 3  
 Initial Fut: 2 0 111 46 0 6 12 1568 22 162 782 34  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 2 0 117 48 0 6 13 1651 23 171 823 36  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 FinalVolume: 2 0 117 48 0 6 13 1651 23 171 823 36

Critical Gap Module:  
 Critical Gp: 7.5 6.5 6.9 7.5 6.5 6.9 4.1 xxxx xxxxx 4.1 xxxx xxxxx  
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx

Capacity Module:  
 Cnflct Vol: 2440 2887 837 2033 2881 429 859 xxxx xxxxx 1674 xxxx xxxxx  
 Potent Cap.: 17 16 314 34 17 579 791 xxxx xxxxx 388 xxxx xxxxx  
 Move Cap.: 11 9 314 14 9 579 791 xxxx xxxxx 388 xxxx xxxxx  
 Volume/Cap: 0.20 0.00 0.37 3.47 0.00 0.01 0.02 xxxx xxxx 0.44 xxxx xxxx

Level Of Service Module:  
 2Way95thQ: xxxx xxxx xxxxx 6.9 xxxx xxxxx 0.0 xxxx xxxxx 2.2 xxxx xxxxx  
 Control Del:xxxxx xxxx xxxxx 1665 xxxx xxxxx 9.6 xxxx xxxxx 21.3 xxxx xxxxx  
 LOS by Move: \* \* \* F \* \* A \* \* C \* \*  
 Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT  
 Shared Cap.: xxxx 320 xxxxx xxxx xxxxx 579 xxxx xxxxx xxxxx xxxx xxxxx  
 SharedQueue:xxxxx 1.7 xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shrd ConDel:xxxxx 22.8 xxxxx xxxxx xxxxx 11.3 xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shared LOS: \* C \* \* \* B \* \* \* \* \* \* \* \* \* \*  
 ApproachDel: 22.8 1473.9 xxxxxx xxxxxx  
 ApproachLOS: C F \* \* \* \* \* \* \* \* \* \*  
 \*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

AM Peak Hour - Buildout plus Project
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.210
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 0 Level Of Service: A

Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 57 1 92 0 1 0 0 7 10 99 21 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 57 1 92 0 1 0 0 7 10 99 21 1
Added Vol: 2 0 22 0 0 0 0 1 2 32 1 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 59 1 114 0 1 0 0 8 12 131 22 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 62 1 120 0 1 0 0 8 13 138 23 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 62 1 120 0 1 0 0 8 13 138 23 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 62 1 120 0 1 0 0 8 13 138 23 1

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.34 0.01 0.65 0.00 1.00 0.00 0.00 0.40 0.60 0.85 0.14 0.01
Final Sat.: 296 5 571 0 765 0 0 335 503 665 112 5

Capacity Analysis Module:
Vol/Sat: 0.21 0.21 0.21 xxxx 0.00 xxxx xxxx 0.03 0.03 0.21 0.21 0.21
Crit Moves: \*\*\*\*
Delay/Veh: 8.0 8.0 8.0 0.0 7.5 0.0 0.0 7.2 7.2 8.6 8.6 8.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.0 8.0 8.0 0.0 7.5 0.0 0.0 7.2 7.2 8.6 8.6 8.6
LOS by Move: A A A \* A \* \* A A A A
ApproachDel: 8.0 7.5 7.2 8.6
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 8.0 7.5 7.2 8.6
LOS by Appr: A A A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.2 0.2

AM Peak Hour - Buildout plus Project
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road

Average Delay (sec/veh): 6.3 Worst Case Level Of Service: B[ 13.1]

Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1! 0 0 0

Volume Module:
Base Vol: 105 27 2 0 49 14 14 0 78 10 1 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 105 27 2 0 49 14 14 0 78 10 1 0
Added Vol: 23 1 0 0 4 3 1 0 29 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 128 28 2 0 53 17 15 0 107 10 1 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 135 29 2 0 56 18 16 0 113 11 1 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 135 29 2 0 56 18 16 0 113 11 1 0

Capacity Module:
Cnflct Vol: 74 xxxx xxxx xxxx xxxx 365 366 65 421 374 xxxx
Potent Cap.: 1539 xxxx xxxx xxxx xxxx 595 566 1005 546 560 xxxx
Move Cap.: 1539 xxxx xxxx xxxx xxxx 551 512 1005 450 507 xxxx
Volume/Cap: 0.09 xxxx xxxx xxxx xxxx 0.03 0.00 0.11 0.02 0.00 xxxx

Level Of Service Module:
2Way95thQ: 0.3 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 7.6 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx 912 xxxx 455 xxxx
SharedQueue:xxxx xxxx xxxx xxxx xxxx xxxx 0.5 xxxx 0.1 xxxx
Shrd ConDel:xxxx xxxx xxxx xxxx xxxx 9.6 xxxx 13.1 xxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 9.6 13.1
ApproachLOS: \* \* A B
Note: Queue reported is the number of cars per lane.



HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	12	586	1242	145	68	9
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	617	1307	153	72	9
RTOR Reduction (vph)	0	0	0	44	0	8
Lane Group Flow (vph)	13	617	1307	109	72	1
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.3	64.5	59.2	59.2	11.0	11.0
Effective Green, g (s)	1.3	64.5	59.2	59.2	11.0	11.0
Actuated g/C Ratio	0.02	0.77	0.71	0.71	0.13	0.13
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)	28	2656	1283	1122	233	209
v/s Ratio Prot	0.01	c0.18	c0.72		c0.04	
v/s Ratio Perm				0.07		0.00
v/c Ratio	0.46	0.23	1.02	0.10	0.31	0.01
Uniform Delay, d1	40.8	2.6	12.1	3.8	32.8	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.0	29.9	0.0	3.4	0.0
Delay (s)	52.4	2.7	42.1	3.8	36.2	31.5
Level of Service	D	A	D	A	D	C
Approach Delay (s)		3.7	38.1		35.7	
Approach LOS		A	D		D	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	19	628	19	229	1362	128	38	6	151	94	13	15
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3426		1770	3402			1785	1583		1785	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.73	1.00		0.72	1.00
Satd. Flow (perm)	1770	3426		1770	3402			1353	1583		1341	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	661	20	241	1434	135	40	6	159	99	14	16
RTOR Reduction (vph)	0	4	0	0	10	0	0	0	128	0	0	13
Lane Group Flow (vph)	20	677	0	241	1559	0	0	46	31	0	113	3
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4		8	8
Actuated Green, G (s)	1.3	20.3		11.3	30.3			10.5	10.5		10.5	10.5
Effective Green, g (s)	1.3	20.3		11.3	30.3			10.5	10.5		10.5	10.5
Actuated g/C Ratio	0.02	0.38		0.21	0.56			0.19	0.19		0.19	0.19
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)	43	1286		370	1905			263	307		260	307
v/s Ratio Prot	0.01	0.20		c0.14	c0.46						c0.08	0.00
v/s Ratio Perm							0.03	0.02				
v/c Ratio	0.47	0.53		0.65	0.82			0.17	0.10		0.43	0.01
Uniform Delay, d1	26.1	13.2		19.6	9.7			18.2	17.9		19.2	17.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	7.8	0.4		4.1	2.9			0.3	0.1		1.2	0.0
Delay (s)	33.8	13.6		23.7	12.5			18.5	18.1		20.4	17.6
Level of Service	C	B		C	B			B	B		C	B
Approach Delay (s)		14.1			14.0			18.2			20.0	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	167	1016	4	125	1616	269	39	23	84	319	24	315
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3437		1770	3438	1583		1806	1583		1780	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.56	1.00		0.69	1.00
Satd. Flow (perm)	1770	3437		1770	3438	1583		1050	1583		1292	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	1069	4	132	1701	283	41	24	88	336	25	332
RTOR Reduction (vph)	0	0	0	0	0	104	0	0	62	0	0	145
Lane Group Flow (vph)	176	1073	0	132	1701	179	0	65	26	0	361	187
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.2	58.0		11.5	55.3	55.3	34.5	34.5		34.5	34.5	
Effective Green, g (s)	14.2	58.0		11.5	55.3	55.3	34.5	34.5		34.5	34.5	
Actuated g/C Ratio	0.12	0.50		0.10	0.48	0.48	0.30	0.30		0.30	0.30	
Clearance Time (s)	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	
Lane Grp Cap (vph)	217	1719		175	1639	755	312	471		384	471	
v/s Ratio Prot	c0.10	c0.31		0.07	c0.49					c0.28	0.12	
v/s Ratio Perm					0.11		0.06	0.02				0.12
v/c Ratio	0.81	0.62		0.75	1.04	0.24	0.21	0.06		0.94	0.40	
Uniform Delay, d1	49.6	21.1		50.9	30.4	17.9	30.5	29.1		39.7	32.5	
Progression Factor	1.00	1.00		1.21	0.72	0.89	1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.1	1.7		8.6	26.4	0.4	0.3	0.0		31.0	0.6	
Delay (s)	69.6	22.8		70.0	48.2	16.3	30.9	29.2		70.7	33.0	
Level of Service	E	C		E	D	B	C	C		E	C	
Approach Delay (s)	29.4			45.3			29.9			52.6		
Approach LOS	C			D			C			D		

Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	50	1348	14	41	1919	294	8	0	13	173	4	55
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1770	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.43	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		801	1583		1351	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1419	15	43	2020	309	8	0	14	182	4	58
RTOR Reduction (vph)	0	0	0	0	0	76	0	0	11	0	0	47
Lane Group Flow (vph)	53	1434	0	43	2020	233	0	8	3	0	186	11
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases					6	4		4	4			4
Actuated Green, G (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Effective Green, g (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Actuated g/C Ratio	0.07	0.65		0.06	0.65	0.65	0.18	0.18		0.18	0.18	
Clearance Time (s)	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	
Lane Grp Cap (vph)	117	2241		110	2229	1026	146	288		246	288	
v/s Ratio Prot	c0.03	0.42		0.02	c0.59							
v/s Ratio Perm					0.15		0.01	0.00		c0.14	0.01	
v/c Ratio	0.45	0.64		0.39	0.91	0.23	0.05	0.01		0.76	0.04	
Uniform Delay, d1	52.1	12.0		52.3	17.4	8.4	39.2	38.9		45.0	39.1	
Progression Factor	1.33	0.71		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	1.1		2.3	6.7	0.5	0.2	0.0		12.4	0.1	
Delay (s)	71.2	9.6		54.6	24.1	8.9	39.4	38.9		57.4	39.1	
Level of Service	E	A		D	C	A	D	D		E	D	
Approach Delay (s)	11.8			22.7			39.1			53.1		
Approach LOS	B			C			D			D		

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	598	1036	110	241	1493	491	161	109	143	574	119	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3362		1770	3438	1478	1681	1751	1478	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3362		1770	3438	1478	1681	1751	1478	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	610	1057	112	246	1523	501	164	111	146	586	121	669
RTOR Reduction (vph)	0	6	0	0	0	190	0	0	126	0	0	0
Lane Group Flow (vph)	610	1163	0	246	1523	311	134	141	20	586	121	669
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	24.5	53.0		21.0	49.5	49.5	17.5	17.5	17.5	22.0	22.0	130.0
Effective Green, g (s)	24.5	53.0		21.0	49.5	49.5	17.5	17.5	17.5	22.0	22.0	130.0
Actuated g/C Ratio	0.19	0.41		0.16	0.38	0.38	0.13	0.13	0.13	0.17	0.17	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	647	1371		286	1309	563	226	236	199	581	315	1550
v/s Ratio Prot	c0.18	0.35		0.14	c0.44		0.08	c0.08		c0.17	0.06	
v/s Ratio Perm						0.21			0.01			c0.43
v/c Ratio	0.94	0.85		0.86	1.16	0.55	0.59	0.60	0.10	1.01	0.38	0.43
Uniform Delay, d1	52.1	34.9		53.1	40.2	31.6	52.9	52.9	49.3	54.0	48.0	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	22.2	6.7		22.2	82.3	3.9	4.1	4.0	0.2	39.5	0.8	0.9
Delay (s)	74.3	41.5		75.3	122.6	35.4	57.0	57.0	49.6	93.5	48.8	0.9
Level of Service	E	D		E	F	D	E	E	D	F	D	A
Approach Delay (s)		52.8			98.2			54.4				44.5
Approach LOS		D			F			D				D

Intersection Summary		
HCM Average Control Delay	68.6	HCM Level of Service E
HCM Volume to Capacity ratio	1.00	
Actuated Cycle Length (s)	130.0	Sum of lost time (s) 16.5
Intersection Capacity Utilization	91.8%	ICU Level of Service F
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	203	1511	16	8	1899	147	5	3	20	138	0	162
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	0.85	1.00
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.97	1.00	0.95	0.95	0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583	1806	1583	1681	1681	1583	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.89	1.00	0.75	0.75	0.75	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583	1653	1583	1332	1332	1583	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	207	1542	16	8	1938	150	5	3	20	141	0	165
RTOR Reduction (vph)	0	1	0	0	0	45	0	0	17	0	0	141
Lane Group Flow (vph)	207	1557	0	8	1938	105	0	8	3	70	71	24
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	16.8	86.0		1.4	70.6	70.6	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	16.8	86.0		1.4	70.6	70.6	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.14	0.74		0.01	0.61	0.61	0.14	0.14	0.14	0.14	0.14	0.14
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)	256	2546		21	2092	963	237	227	191	191	227	227
v/s Ratio Prot	c0.12	0.45		0.00	c0.56							
v/s Ratio Perm						0.07	0.00	0.00	0.05	c0.05	0.01	
v/c Ratio	0.81	0.61		0.38	0.93	0.11	0.03	0.01	0.37	0.37	0.10	0.10
Uniform Delay, d1	48.0	7.1		56.9	20.4	9.5	42.8	42.7	44.9	45.0	43.2	43.2
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	16.9	1.1		11.2	8.6	0.2	0.1	0.0	1.2	1.2	0.2	0.2
Delay (s)	64.9	8.2		68.0	29.0	9.7	42.9	42.7	46.1	46.2	43.4	43.4
Level of Service	E	A		E	C	A	D	D	D	D	D	D
Approach Delay (s)		14.9			27.7			42.7				44.7
Approach LOS		B			C			D				D

Intersection Summary		
HCM Average Control Delay	23.7	HCM Level of Service C
HCM Volume to Capacity ratio	0.82	
Actuated Cycle Length (s)	116.0	Sum of lost time (s) 12.0
Intersection Capacity Utilization	84.2%	ICU Level of Service E
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis  
 7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑↑
Volume (vph)	0	1328	269	187	1171	0	300	0	246	7	107	576
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Flt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1857	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2466		1583		1857	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1355	274	191	1195	0	306	0	251	7	109	588
RTOR Reduction (vph)	0	0	169	0	0	0	0	0	184	0	0	31
Lane Group Flow (vph)	0	1355	105	191	1195	0	306	0	67	0	116	557
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		18					4
Actuated Green, G (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Effective Green, g (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Actuated g/C Ratio		0.34	0.34	0.09	0.48		0.13		0.27		0.26	0.26
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)		1184	545	157	1691		329		422		475	393
v/s Ratio Prot		c0.39		c0.11	0.34						0.06	
v/s Ratio Perm			0.07				c0.12		0.04			c0.36
v/c Ratio		1.14	0.19	1.22	0.71		0.93		0.16		0.24	1.42
Uniform Delay, d1		29.5	20.7	41.0	18.5		38.6		25.3		26.6	33.5
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		75.4	0.2	141.7	1.4		32.0		0.2		0.3	202.8
Delay (s)		104.9	20.9	182.7	19.9		70.6		25.4		26.9	236.3
Level of Service		F	C	F	B		E		C		C	F
Approach Delay (s)		90.8			42.3		50.3				201.8	
Approach LOS		F			D		D				F	

Intersection Summary			
HCM Average Control Delay	88.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑↑	↑
Volume (vph)	157	115	153	965	1294	193
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	1.00	1.00	1.00	0.95	0.91	1.00
Flrb, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1512
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1512
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	165	121	161	1016	1362	203
RTOR Reduction (vph)	0	100	0	0	0	83
Lane Group Flow (vph)	165	21	161	1016	1362	120
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot		Perm	
Protected Phases		4	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	19.8	19.8	15.9	88.2	68.3	68.3
Effective Green, g (s)	19.8	19.8	15.9	88.2	68.3	68.3
Actuated g/C Ratio	0.17	0.17	0.14	0.76	0.59	0.59
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)	302	256	243	2691	2994	890
v/s Ratio Prot	c0.09		c0.09	0.29	c0.27	
v/s Ratio Perm		0.01				0.08
v/c Ratio	0.55	0.08	0.66	0.38	0.45	0.13
Uniform Delay, d1	44.0	40.4	47.5	4.7	13.4	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	6.6	0.4	0.5	0.3
Delay (s)	46.0	40.6	54.1	5.1	13.9	11.0
Level of Service	D	D	D	A	B	B
Approach Delay (s)	43.7			11.8	13.5	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	34	0	105	15	0	5	98	909	5	40	1361	18
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.97	1.00		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.96	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1737	1770		3536	1770		3532	3532	
Flt Permitted	0.74	1.00		0.81	0.95		1.00	0.95		1.00	1.00	
Satd. Flow (perm)	1385	1583		1452	1770		3536	1770		3532	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	0	111	16	0	5	103	957	5	42	1433	19
RTOR Reduction (vph)	0	0	93	0	4	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	36	18	0	17	0	103	962	0	42	1450	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	7.8	7.8		7.8		4.3	25.1		2.8	23.6		
Effective Green, g (s)	7.8	7.8		7.8		4.3	25.1		2.8	23.6		
Actuated g/C Ratio	0.16	0.16		0.16		0.09	0.53		0.06	0.49		
Clearance Time (s)	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		
Lane Grp Cap (vph)	226	259		237		160	1861		104	1747		
v/s Ratio Prot						c0.06	0.27		0.02	c0.41		
v/s Ratio Perm	c0.03	0.01		0.01								
v/c Ratio	0.16	0.07		0.07		0.64	0.52		0.40	0.83		
Uniform Delay, d1	17.1	16.9		16.9		21.0	7.4		21.6	10.3		
Progression Factor	1.00	1.00		1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2	0.3	0.1		0.1		8.6	0.2		2.6	4.7		
Delay (s)	17.5	17.0		17.0		29.5	7.6		24.2	15.1		
Level of Service	B	B		B		C	A		C	B		
Approach Delay (s)	17.1			17.0			9.7			15.3		
Approach LOS	B			B			A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay	13.2			HCM Level of Service				B				
HCM Volume to Capacity ratio	0.66											
Actuated Cycle Length (s)	47.7			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	64.9%			ICU Level of Service				C				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	32	1	53	112	2	80	47	900	35	14	1288	5
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1776	1583	1770	1590	1770	3519	1770	3519	1770	3537	1770	3537
Flt Permitted	0.71	1.00	0.73	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1320	1583	1368	1590	1770	3519	1770	3519	1770	3537	1770	3537
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1	56	118	2	84	49	947	37	15	1356	5
RTOR Reduction (vph)	0	0	46	0	69	0	4	0	0	0	1	0
Lane Group Flow (vph)	0	35	10	118	17	0	49	980	0	15	1360	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7		
Effective Green, g (s)	8.3	8.3	8.3	8.3		3.4	24.9		1.2	22.7		
Actuated g/C Ratio	0.18	0.18	0.18	0.18		0.07	0.54		0.03	0.49		
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)	236	283	245	284		130	1888		46	1730		
v/s Ratio Prot						0.03	c0.28		0.01	c0.38		
v/s Ratio Perm	0.03	0.01		c0.09								
v/c Ratio	0.15	0.04		0.48		0.38	0.52		0.33	0.79		
Uniform Delay, d1	16.1	15.7		17.1		20.5	6.9		22.2	9.8		
Progression Factor	1.00	1.00		1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2	0.3	0.1		1.5		1.8	0.2		4.1	3.7		
Delay (s)	16.4	15.8		18.6		22.3	7.1		26.3	13.5		
Level of Service	B	B		B		C	A		C	B		
Approach Delay (s)	16.0			17.5			7.9			13.7		
Approach LOS	B			B			A			B		
<b>Intersection Summary</b>												
HCM Average Control Delay	11.8			HCM Level of Service				B				
HCM Volume to Capacity ratio	0.65											
Actuated Cycle Length (s)	46.4			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	62.4%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	10	0	7	81	0	18	5	848	12	17	1059	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	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Frt	0.95	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1713	1770	1583	1770	3532	1770	3532	1770	3535	1770	3535	3535
Flt Permitted	0.97	0.75	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1713	1389	1583	1770	3532	1770	3532	1770	3535	1770	3535	3535
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	0	7	85	0	19	5	893	13	18	1115	8
RTOR Reduction (vph)	0	6	0	0	0	16	0	1	0	0	0	0
Lane Group Flow (vph)	0	12	0	85	0	3	5	905	0	18	1123	0
Turn Type	Perm		custom	custom	Prot		Prot		Prot		Prot	
Protected Phases		4				5	2			1	6	
Permitted Phases	4			8		8				1.1	21.1	
Actuated Green, G (s)		6.0		6.0		6.0	1.1	21.1		1.1	21.1	
Effective Green, g (s)		6.0		6.0		6.0	1.1	21.1		1.1	21.1	
Actuated g/C Ratio		0.15		0.15		0.15	0.03	0.52		0.03	0.52	
Clearance Time (s)		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	
Lane Grp Cap (vph)	256		207		236	48	1854	48	1855			
v/s Ratio Prot						0.00	0.26			c0.01	c0.32	
v/s Ratio Perm	0.01		c0.06		0.00							
v/c Ratio	0.05		0.41		0.01	0.10	0.49			0.38	0.61	
Uniform Delay, d1	14.7		15.5		14.6	19.1	6.1			19.2	6.6	
Progression Factor	1.00		1.00		1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.1		1.3		0.0	1.0	0.2			4.9	0.6	
Delay (s)	14.7		16.8		14.6	20.0	6.3			24.1	7.2	
Level of Service	B		B		B	C	A			C	A	
Approach Delay (s)	14.7			16.4			6.4				7.5	
Approach LOS	B			B			A				A	
<b>Intersection Summary</b>												
HCM Average Control Delay		7.5							A			
HCM Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		40.2					12.0					
Intersection Capacity Utilization		45.5%							A			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	38	0	26	98	0	137	29	811	57	42	848	42
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	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Frt	0.95	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00	0.95	1.00	0.99
Flt Protected	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1710	1770	1583	1770	3504	1770	3514	1770	3514	1770	3514	3514
Flt Permitted	0.97	0.71	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1710	1329	1583	1770	3504	1770	3514	1770	3514	1770	3514	3514
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	0	27	103	0	144	31	854	60	44	893	44
RTOR Reduction (vph)	0	22	0	0	0	115	0	10	0	0	6	0
Lane Group Flow (vph)	0	45	0	103	0	29	31	904	0	44	931	0
Turn Type	Perm		custom	custom	Prot		Prot		Prot		Prot	
Protected Phases		4				5	2			1	6	
Permitted Phases	4			8		8				1.3	17.7	
Actuated Green, G (s)		8.0		8.0		8.0	1.3	17.7		2.5	18.9	
Effective Green, g (s)		8.0		8.0		8.0	1.3	17.7		2.5	18.9	
Actuated g/C Ratio		0.20		0.20		0.20	0.03	0.44		0.06	0.47	
Clearance Time (s)		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	
Lane Grp Cap (vph)	340		264		315	57	1543	110	1652			
v/s Ratio Prot						0.02	c0.26			0.02	c0.26	
v/s Ratio Perm	0.03		c0.08		0.02							
v/c Ratio	0.13		0.39		0.09	0.54	0.59			0.40	0.56	
Uniform Delay, d1	13.2		14.0		13.1	19.2	8.5			18.1	7.7	
Progression Factor	1.00		1.00		1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.2		1.0		0.1	10.2	0.6			2.4	0.4	
Delay (s)	13.4		14.9		13.3	29.3	9.1			20.5	8.1	
Level of Service	B		B		B	C	A			C	A	
Approach Delay (s)	13.4			14.0			9.7				8.7	
Approach LOS	B			B			A				A	
<b>Intersection Summary</b>												
HCM Average Control Delay		9.8							A			
HCM Volume to Capacity ratio		0.50										
Actuated Cycle Length (s)		40.2					8.0					
Intersection Capacity Utilization		51.0%							A			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	154	171	935	126	198	757
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frft	1.00	0.85	0.98		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3454		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3454		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	162	180	984	133	208	797
RTOR Reduction (vph)	0	14	21	0	0	0
Lane Group Flow (vph)	162	166	1096	0	208	797
Confl. Peds. (#/hr)				25		
Turn Type	pm+ov		Prot			
Protected Phases	6	7	8	7		4
Permitted Phases	6					
Actuated Green, G (s)	7.7	16.6	17.4	8.9		30.3
Effective Green, g (s)	7.7	16.6	17.4	8.9		30.3
Actuated g/C Ratio	0.17	0.36	0.38	0.19		0.66
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	296	709	1307	342		2331
v/s Ratio Prot	c0.09	0.05	c0.32	c0.12		0.23
v/s Ratio Perm	0.06					
v/c Ratio	0.55	0.23	0.84	0.61		0.34
Uniform Delay, d1	17.6	10.3	13.0	17.0		3.5
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	2.1	0.2	4.9	3.1		0.1
Delay (s)	19.6	10.4	17.9	20.0		3.5
Level of Service	B	B	B	C		A
Approach Delay (s)	14.8		17.9	7.0		
Approach LOS	B		B	A		

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	29	33	15	383	4	415	8	643	579	230	516	7
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frft	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Fit Protected	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1820	1448	1681	1687	1583	1770	3539	1479	1770	3530		
Fit Permitted	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1820	1448	1681	1687	1583	1770	3539	1479	1770	3530		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	35	16	403	4	437	8	677	609	242	543	7
RTOR Reduction (vph)	0	0	14	0	0	277	0	0	447	0	1	0
Lane Group Flow (vph)	0	66	2	201	206	160	8	677	162	242	549	0
Confl. Peds. (#/hr)				25							25	
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7	8	8	1	5	2	2	1	6		
Permitted Phases	8											
Actuated Green, G (s)	6.0	6.0	11.3	11.3	22.0	1.6	16.0	16.0	10.7	25.1		
Effective Green, g (s)	6.0	6.0	11.3	11.3	22.0	1.6	16.0	16.0	10.7	25.1		
Actuated g/C Ratio	0.10	0.10	0.19	0.19	0.37	0.03	0.27	0.27	0.18	0.42		
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	5.0	5.0	3.0	5.0		
Lane Grp Cap (vph)	182	145	317	318	686	47	944	394	316	1477		
v/s Ratio Prot	c0.04		0.12	c0.12	0.04	0.00	c0.19		c0.14	0.16		
v/s Ratio Perm	0.06											
v/c Ratio	0.36	0.01	0.63	0.65	0.23	0.17	0.72	0.41	0.77	0.37		
Uniform Delay, d1	25.2	24.3	22.4	22.5	13.2	28.6	19.9	18.1	23.5	12.0		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01	0.63		
Incremental Delay, d2	1.2	0.0	4.1	4.5	0.2	1.7	4.7	3.2	9.5	0.6		
Delay (s)	26.4	24.4	26.6	27.0	13.3	30.3	24.6	21.3	33.3	8.2		
Level of Service	C	C	C	C	B	C	C	C	C	A		
Approach Delay (s)	26.0			19.8			23.1			15.9		
Approach LOS	C			B			C			B		

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔		↔	↔	↔	↔	↔	
Volume (vph)	10	105	247	286	54	51	399	242	362	63	172	11
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	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.94	1.00	0.99	1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.96	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1854	1583	1681	1639	3433	3539	1487	1770	3487	1770	1835	1468
Fit Permitted	1.00	1.00	0.95	0.98	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1854	1583	1681	1639	3433	3539	1487	1770	3487	1770	1835	1468
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	111	260	301	57	54	420	255	381	66	181	12
RTOR Reduction (vph)	0	0	215	0	21	0	0	0	267	0	8	0
Lane Group Flow (vph)	0	122	45	208	183	0	420	255	114	66	185	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot			
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)	10.3	10.3	11.1	11.1	11.6	17.9	17.9	4.7	11.0			
Effective Green, g (s)	10.3	10.3	11.1	11.1	11.6	17.9	17.9	4.7	11.0			
Actuated g/C Ratio	0.17	0.17	0.18	0.18	0.19	0.30	0.30	0.08	0.18			
Clearance Time (s)	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	5.0	3.0	3.0	3.0	5.0			
Lane Grp Cap (vph)	318	272	311	303	664	1056	444	139	639			
v/s Ratio Prot	c0.07		c0.12	0.11	c0.12	0.07		c0.04	c0.05			
v/s Ratio Perm		0.03				0.08						
v/c Ratio	0.38	0.16	0.67	0.60	0.63	0.24	0.26	0.47	0.29			
Uniform Delay, d1	22.0	21.2	22.7	22.4	22.2	15.9	16.0	26.5	21.1			
Progression Factor	1.00	1.00	1.00	1.00	0.73	0.57	1.11	1.00	1.00			
Incremental Delay, d2	0.8	0.3	5.4	3.4	2.1	0.4	1.0	2.5	1.1			
Delay (s)	22.8	21.5	28.1	25.8	18.3	9.4	18.8	29.0	22.3			
Level of Service	C	C	C	C	B	A	B	C	C			
Approach Delay (s)	21.9			27.0			16.3		24.0			
Approach LOS	C			C			B		C			

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis  
 16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔		↔	↔	↔	↔	↔	
Volume (vph)	32	152	314	237	17	2	361	81	370	10	179	32
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.85	0.98	1.00	0.98	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1835	1770	1863	1468	1822	1770	1835	1468
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1835	1770	1863	1468	1822	1770	1835	1468
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	160	331	249	18	2	380	85	389	11	188	34
RTOR Reduction (vph)	0	0	122	0	1	0	0	0	298	0	11	0
Lane Group Flow (vph)	34	160	209	249	19	0	380	85	91	0	222	0
Confl. Peds. (#/hr)									25			
Turn Type	Prot		pm+ov	Prot		Split		Perm	Split			
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2					3				
Actuated Green, G (s)	1.5	10.4	24.3	8.6	17.5		13.9	13.9	13.9		10.8	
Effective Green, g (s)	1.5	10.4	24.3	8.6	17.5		13.9	13.9	13.9		10.8	
Actuated g/C Ratio	0.03	0.17	0.41	0.14	0.29		0.23	0.23	0.23		0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	44	325	750	255	538		412	434	342		330	
v/s Ratio Prot	0.02	c0.09	0.06	c0.14	0.01		c0.21	0.05			c0.12	
v/s Ratio Perm			0.07					0.06				
v/c Ratio	0.77	0.49	0.28	0.98	0.03		0.92	0.20	0.26		0.67	
Uniform Delay, d1	28.9	22.3	11.8	25.4	15.1		22.4	18.4	18.7		22.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	57.0	1.4	0.2	49.3	0.0		26.0	0.2	0.4		5.3	
Delay (s)	85.9	23.7	12.0	74.8	15.1		48.3	18.6	19.1		28.2	
Level of Service	F	C	B	E	B		D	B	B		C	
Approach Delay (s)	20.4			70.3			32.1		28.2			
Approach LOS	C			E			C		C			

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		



HCM Signalized Intersection Capacity Analysis  
 17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	66	860	56	78	1689	169	155	22	73	193	17	39
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.96	1.00
Satd. Flow (prot)	1770	3507	1770	3539	1583	1785	1583	1781	1583	1781	1583	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.51	1.00	0.56	1.00	0.56	1.00	1.00
Satd. Flow (perm)	1770	3507	1770	3539	1583	951	1583	1049	1583	1049	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	905	59	82	1778	178	163	23	77	203	18	41
RTOR Reduction (vph)	0	7	0	0	87	0	0	57	0	0	0	31
Lane Group Flow (vph)	69	957	0	82	1778	91	0	186	20	0	221	10
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	2.8	31.6		3.4	32.2	32.2		16.1	16.1		16.1	16.1
Effective Green, g (s)	2.8	31.6		3.4	32.2	32.2		16.1	16.1		16.1	16.1
Actuated g/C Ratio	0.04	0.50		0.05	0.51	0.51		0.26	0.26		0.26	0.26
Clearance Time (s)	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
Lane Grp Cap (vph)	79	1756		95	1806	808		243	404		268	404
v/s Ratio Prot	0.04	0.27		c0.05	c0.50							
v/s Ratio Perm						0.06		0.20	0.01		c0.21	0.01
v/c Ratio	0.87	0.54		0.86	0.98	0.11		0.77	0.05		0.82	0.03
Uniform Delay, d1	30.0	10.8		29.6	15.2	8.0		21.8	17.7		22.2	17.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	60.4	0.3		50.8	17.5	0.1		20.3	0.2		24.2	0.1
Delay (s)	90.4	11.2		80.4	32.7	8.1		42.0	18.0		46.3	17.7
Level of Service	F	B		F	C	A		D	B		D	B
Approach Delay (s)	16.5			32.5			35.0			41.9		
Approach LOS	B			C			C			D		

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

PM Peak Hour - Buildout plus Project Conditions  
 Town Center Specific Plan  
 City of Scotts Valley

Level of Service Computation Report  
 2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #18 Mt Hermon Road/Washington Mutual Access  
 \*\*\*\*\*  
 Average Delay (sec/veh): 1733.1 Worst Case Level Of Service: F[43399.1]  
 \*\*\*\*\*

Street Name: Washington Mutual Access Mt Hermon Road  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include  
 Lanes: 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0

Volume Module:  
 Base Vol: 13 0 184 0 0 0 0 890 45 294 1567 0  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 13 0 184 0 0 0 0 890 45 294 1567 0  
 Added Vol: 0 0 0 111 0 7 15 218 0 0 242 76  
 PasserByVol: 0 0 0 14 0 10 14 -14 0 0 -10 10  
 Initial Fut: 13 0 184 125 0 17 29 1094 45 294 1799 86  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 14 0 194 132 0 18 31 1152 47 309 1894 91  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 FinalVolume: 14 0 194 132 0 18 31 1152 47 309 1894 91

Critical Gap Module:  
 Critical Gp: 7.5 6.5 6.9 7.5 6.5 6.9 4.1 xxxx xxxxx 4.1 xxxx xxxxx  
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx

Capacity Module:  
 Cnflct Vol: 2802 3839 599 3195 3818 992 1984 xxxx xxxxx 1199 xxxx xxxxx  
 Potent Cap.: 9 4 449 4 4 248 295 xxxx xxxxx 589 xxxx xxxxx  
 Move Cap.: 4 2 449 1 2 248 295 xxxx xxxxx 589 xxxx xxxxx  
 Volume/Cap: 3.10 0.00 0.43 98.80 0.00 0.07 0.10 xxxx xxxx 0.53 xxxx xxxx

Level Of Service Module:  
 2Way95thQ: xxxx xxxx xxxxx 18.9 xxxx xxxxx 0.3 xxxx xxxxx 3.1 xxxx xxxxx  
 Control Del:xxxxx xxxx xxxxx 49299 xxxx xxxxx 18.6 xxxx xxxxx 17.7 xxxx xxxxx  
 LOS by Move: \* \* \* F \* \* C \* \* C \* \*  
 Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT  
 Shared Cap.: xxxx 65 xxxxx xxxx xxxxx 248 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  
 SharedQueue:xxxxx 21.4 xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shrd ConDel:xxxxx 1115 xxxxx xxxxx xxxxx 20.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shared LOS: \* F \* \* \* \* C \* \* \* \* \* \* \* \* \* \*  
 ApproachDel: 1115.5 xxxxxx xxxxxx xxxxxx  
 ApproachLOS: F F \* \* \* \* \* \* \* \* \* \*  
 \*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

PM Peak Hour - Buildout plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.291
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.8
Optimal Cycle: 0 Level Of Service: A

Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 44 0 108 0 0 0 0 31 97 107 25 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 44 0 108 0 0 0 0 31 97 107 25 1
Added Vol: 5 0 65 0 0 0 0 4 6 55 3 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 49 0 173 0 0 0 0 35 103 162 28 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 52 0 182 0 0 0 0 37 108 171 29 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 52 0 182 0 0 0 0 37 108 171 29 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 52 0 182 0 0 0 0 37 108 171 29 1

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.22 0.00 0.78 0.00 1.00 0.00 0.00 0.25 0.75 0.85 0.14 0.01
Final Sat.: 177 0 626 0 669 0 0 206 608 621 107 4

Capacity Analysis Module:
Vol/Sat: 0.29 xxxxx 0.29 xxxxx 0.00 xxxxx xxxxx 0.18 0.18 0.27 0.27 0.27
Crit Moves: \*\*\*\*
Delay/Veh: 8.8 0.0 8.8 0.0 0.0 0.0 0.0 8.0 8.0 9.4 9.4 9.4
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.8 0.0 8.8 0.0 0.0 0.0 0.0 8.0 8.0 9.4 9.4 9.4
LOS by Move: A \* A \* \* \* \* A A A A A
ApproachDel: 8.8 xxxxxx 8.0 9.4
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 8.8 xxxxxx 8.0 9.4
LOS by Appr: A \* A A A
AllWayAvgQ: 0.4 0.4 0.4 0.0 0.0 0.0 0.2 0.2 0.2 0.3 0.3 0.3

PM Peak Hour - Buildout plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road

Average Delay (sec/veh): 7.6 Worst Case Level Of Service: C[ 15.0]

Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1! 0 0 0 1 0 0 0

Volume Module:
Base Vol: 124 40 3 0 41 23 29 3 139 2 6 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 124 40 3 0 41 23 29 3 139 2 6 0
Added Vol: 61 5 0 0 3 2 3 0 61 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 185 45 3 0 44 25 32 3 200 2 6 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 195 47 3 0 46 26 34 3 211 2 6 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 195 47 3 0 46 26 34 3 211 2 6 0

Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 7.1 6.5 6.2 7.1 6.5 xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 xxxxx

Capacity Module:
Cnflct Vol: 73 xxxxx xxxxx xxxxx xxxxx xxxxx 501 499 59 605 511 xxxxx
Potent Cap.: 1540 xxxxx xxxxx xxxxx xxxxx xxxxx 484 476 1012 413 469 xxxxx
Move Cap.: 1540 xxxxx xxxxx xxxxx xxxxx xxxxx 426 408 1012 290 402 xxxxx
Volume/Cap: 0.13 xxxxx xxxxx xxxxx xxxxx xxxxx 0.08 0.01 0.21 0.01 0.02 xxxxx

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	589	1237	123	156	1369	431	162	102	142	461	92	593
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		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	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3366		1770	3438	1478	1681	1749	1478	3433	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3366		1770	3438	1478	1681	1749	1478	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	601	1262	126	159	1397	440	165	104	145	470	94	605
RTOR Reduction (vph)	0	5	0	0	0	182	0	0	126	0	0	0
Lane Group Flow (vph)	601	1383	0	159	1397	258	132	137	19	470	94	605
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	25.6	59.3		15.8	49.5	49.5	17.4	17.4	17.4	21.0	21.0	130.0
Effective Green, g (s)	25.6	59.3		15.8	49.5	49.5	17.4	17.4	17.4	21.0	21.0	130.0
Actuated g/C Ratio	0.20	0.46		0.12	0.38	0.38	0.13	0.13	0.13	0.16	0.16	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	676	1535		215	1309	563	225	234	198	555	301	1550
v/s Ratio Prot	c0.18	0.41		0.09	c0.41		c0.08	0.08		c0.14	0.05	
v/s Ratio Perm						0.17			0.01			0.39
v/c Ratio	0.89	0.90		0.74	1.07	0.46	0.59	0.59	0.10	0.85	0.31	0.39
Uniform Delay, d1	50.8	32.6		55.1	40.2	30.2	52.9	52.9	49.4	52.9	48.1	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
Incremental Delay, d2	13.6	8.9		12.5	44.9	2.7	3.9	3.7	0.2	11.4	0.6	0.7
Delay (s)	64.4	41.5		67.6	85.2	32.9	56.8	56.6	49.6	64.4	48.7	0.7
Level of Service	E	D		E	F	C	E	E	D	E	D	A
Approach Delay (s)		48.4			72.3			54.2				30.2
Approach LOS		D			E			D				C
<b>Intersection Summary</b>												
HCM Average Control Delay			53.6			HCM Level of Service			D			
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)			16.5			
Intersection Capacity Utilization			84.9%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	0	1346	384	186	999	0	371	0	301	10	112	457
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2448		1583		1855	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1373	392	190	1019	0	379	0	307	10	114	466
RTOR Reduction (vph)	0	0	239	0	0	0	0	0	225	0	0	40
Lane Group Flow (vph)	0	1373	153	190	1019	0	379	0	82	0	124	426
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2		1	6				4		4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Effective Green, g (s)		31.0	31.0	8.0	43.0		12.0		24.0		23.0	23.0
Actuated g/C Ratio		0.34	0.34	0.09	0.48		0.13		0.27		0.26	0.26
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)		1184	545	157	1691		326		422		474	393
v/s Ratio Prot		c0.40		c0.11	0.29						0.07	
v/s Ratio Perm			0.10				c0.15		0.05			c0.28
v/c Ratio		1.16	0.28	1.21	0.60		1.16		0.19		0.26	1.08
Uniform Delay, d1		29.5	21.4	41.0	17.2		39.0		25.5		26.7	33.5
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		81.6	0.3	139.4	0.6		101.6		0.2		0.3	69.6
Delay (s)		111.1	21.7	180.4	17.8		140.6		25.7		27.0	103.1
Level of Service		F	C	F	B		F		C		C	F
Approach Delay (s)		91.2			43.4		89.2				87.1	
Approach LOS		F			D		F				F	
<b>Intersection Summary</b>												
HCM Average Control Delay			76.7			HCM Level of Service			E			
HCM Volume to Capacity ratio			1.14									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			76.5%			ICU Level of Service			D			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕	↕	↔	↔
Volume (vph)	15	1099	417	57	132	10
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1157	439	60	139	11
RTOR Reduction (vph)	0	0	0	35	0	8
Lane Group Flow (vph)	16	1157	439	25	139	3
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.2	22.4	17.2	17.2	11.2	11.2
Effective Green, g (s)	1.2	22.4	17.2	17.2	11.2	11.2
Actuated g/C Ratio	0.03	0.54	0.41	0.41	0.27	0.27
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)	51	1851	748	655	477	426
v/s Ratio Prot	0.01	c0.34	0.24		c0.08	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.31	0.63	0.59	0.04	0.29	0.01
Uniform Delay, d1	19.8	6.7	9.4	7.3	12.1	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.7	1.2	0.0	1.5	0.0
Delay (s)	23.3	7.3	10.6	7.3	13.6	11.2
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.6	10.2		13.4	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↕		↔	↕↕				↕↕	↔	↔	↔
Volume (vph)	3	1152	27	106	451	28	16	6	168	95	6	3
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3429		1770	3414			1796	1583		1779	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81	1.00		0.72	1.00
Satd. Flow (perm)	1770	3429		1770	3414			1505	1583		1344	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	1213	28	112	475	29	17	6	177	100	6	3
RTOR Reduction (vph)	0	3	0	0	7	0	0	0	140	0	0	2
Lane Group Flow (vph)	3	1238	0	112	497	0	0	23	37	0	106	1
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4	8		8
Actuated Green, G (s)	1.3	21.2		5.9	25.8			10.5	10.5		10.5	10.5
Effective Green, g (s)	1.3	21.2		5.9	25.8			10.5	10.5		10.5	10.5
Actuated g/C Ratio	0.03	0.43		0.12	0.52			0.21	0.21		0.21	0.21
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)	46	1466		211	1776			319	335		285	335
v/s Ratio Prot	0.00	c0.36		c0.06	0.15						c0.08	0.00
v/s Ratio Perm							0.02	0.02				
v/c Ratio	0.07	0.84		0.53	0.28			0.07	0.11		0.37	0.00
Uniform Delay, d1	23.6	12.7		20.5	6.7			15.7	15.8		16.7	15.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	4.7		2.6	0.1			0.1	0.1		0.8	0.0
Delay (s)	24.2	17.4		23.1	6.8			15.7	15.9		17.5	15.4
Level of Service	C	B		C	A			B	B		B	B
Approach Delay (s)		17.4			9.7			15.9			17.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	129	1343	14	34	640	138	7	6	16	111	7	77
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1814	1583		1779	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.88	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		1643	1583		1358	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	1414	15	36	674	145	7	6	17	117	7	81
RTOR Reduction (vph)	0	0	0	0	0	56	0	0	14	0	0	68
Lane Group Flow (vph)	136	1429	0	36	674	89	0	13	3	0	124	13
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	14.2	80.2		5.4	71.4	71.4	18.4	18.4		18.4	18.4	
Effective Green, g (s)	14.2	80.2		5.4	71.4	71.4	18.4	18.4		18.4	18.4	
Actuated g/C Ratio	0.12	0.69		0.05	0.62	0.62	0.16	0.16		0.16	0.16	
Clearance Time (s)	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	
Lane Grp Cap (vph)	217	2374		82	2116	974	261	251		215	251	
v/s Ratio Prot	c0.08	c0.42		0.02	0.20					c0.09	0.01	
v/s Ratio Perm					0.06		0.01	0.00			c0.09	0.01
v/c Ratio	0.63	0.60		0.44	0.32	0.09	0.05	0.01		0.58	0.05	
Uniform Delay, d1	48.4	9.5		53.8	10.7	9.1	41.4	41.1		45.2	41.4	
Progression Factor	1.00	1.00		1.10	0.63	0.29	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.6	1.1		3.6	0.4	0.2	0.1	0.0		3.7	0.1	
Delay (s)	53.9	10.6		62.9	7.1	2.8	41.5	41.1		48.9	41.5	
Level of Service	D	B		E	A	A	D	D		D	D	
Approach Delay (s)	14.4			8.8			41.3			46.0		
Approach LOS	B			A			D			D		

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	32	1448	2	46	839	109	4	1	17	67	2	3
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3438		1770	3438	1583		1791	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.86	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3438	1583		1603	1583		1358	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1524	2	48	883	115	4	1	18	71	2	3
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	16	0	0	3
Lane Group Flow (vph)	34	1526	0	48	883	84	0	5	2	0	73	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases						6	4		4	4		4
Actuated Green, G (s)	5.3	82.6		7.4	84.7	84.7	14.0	14.0		14.0	14.0	
Effective Green, g (s)	5.3	82.6		7.4	84.7	84.7	14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.05	0.71		0.06	0.73	0.73	0.12	0.12		0.12	0.12	
Clearance Time (s)	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	
Lane Grp Cap (vph)	81	2448		113	2510	1156	193	191		164	191	
v/s Ratio Prot	0.02	c0.44		c0.03	0.26							
v/s Ratio Perm					0.05		0.00	0.00			c0.05	0.00
v/c Ratio	0.42	0.62		0.42	0.35	0.07	0.03	0.01		0.45	0.00	
Uniform Delay, d1	53.9	8.6		52.3	5.7	4.5	45.0	44.9		47.4	44.9	
Progression Factor	1.34	0.77		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	1.0		2.6	0.4	0.1	0.1	0.0		1.9	0.0	
Delay (s)	74.8	7.6		54.8	6.1	4.6	45.0	44.9		49.3	44.9	
Level of Service	E	A		D	A	A	D	D		D	D	
Approach Delay (s)	9.1			8.1			45.0			49.1		
Approach LOS	A			A			D			D		

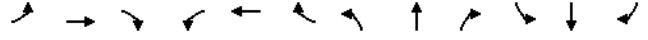
Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	599	1072	30	107	545	51	65	148	168	200	108	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	3419		1770	3438	1504	1681	1766	1504	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3419		1770	3438	1504	1681	1766	1504	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	611	1094	31	109	556	52	66	151	171	204	110	271
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	142	0	0	0
Lane Group Flow (vph)	611	1123	0	109	556	12	59	158	29	204	110	271
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	22.2	34.1		9.6	21.5	21.5	15.3	15.3	15.3	14.5	14.5	90.0
Effective Green, g (s)	22.2	34.1		9.6	21.5	21.5	15.3	15.3	15.3	14.5	14.5	90.0
Actuated g/C Ratio	0.25	0.38		0.11	0.24	0.24	0.17	0.17	0.17	0.16	0.16	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	847	1295		189	821	359	286	300	256	553	300	1550
v/s Ratio Prot	c0.18	c0.33		0.06	0.16		0.04	c0.09		c0.06	0.06	
v/s Ratio Perm						0.01			0.02			0.17
v/c Ratio	0.72	0.87		0.58	0.68	0.03	0.21	0.53	0.11	0.37	0.37	0.17
Uniform Delay, d1	31.1	25.9		38.3	31.1	26.3	32.1	34.0	31.6	33.7	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	3.1	8.0		4.2	4.5	0.2	0.4	1.7	0.2	0.4	0.8	0.2
Delay (s)	34.1	33.9		42.5	35.6	26.5	32.5	35.7	31.8	34.1	34.4	0.2
Level of Service	C	C		D	D	C	C	D	C	C	C	A
Approach Delay (s)		34.0			36.0			33.5				18.5
Approach LOS		C			D			C				B

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	117	1127	32	31	765	160	13	3	36	140	2	115
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	0.85	1.00
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.96	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3426		1770	3438	1583	1790	1583	1681	1688	1583	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.82	1.00	0.75	0.72	1.00	1.00
Satd. Flow (perm)	1770	3426		1770	3438	1583	1526	1583	1322	1275	1583	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	119	1150	33	32	781	163	13	3	37	143	2	117
RTOR Reduction (vph)	0	1	0	0	0	58	0	0	32	0	0	100
Lane Group Flow (vph)	119	1182	0	32	781	105	0	16	5	73	72	17
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	13.0	82.2		5.2	74.4	74.4	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	13.0	82.2		5.2	74.4	74.4	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.11	0.71		0.04	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
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)	198	2428		79	2205	1015	218	227	189	182	227	227
v/s Ratio Prot	c0.07	c0.34		0.02	0.23		0.01	0.00	0.06	c0.06	0.01	
v/s Ratio Perm						0.07						
v/c Ratio	0.60	0.49		0.41	0.35	0.10	0.07	0.02	0.39	0.40	0.07	
Uniform Delay, d1	49.0	7.5		53.9	9.7	8.0	43.0	42.7	45.1	45.1	43.0	
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	5.1	0.7		3.4	0.4	0.2	0.1	0.0	1.3	1.4	0.1	
Delay (s)	54.1	8.2		57.3	10.1	8.2	43.2	42.8	46.4	46.6	43.2	
Level of Service	D	A		E	B	A	D	D	D	D	D	D
Approach Delay (s)		12.4			11.3			42.9				45.0
Approach LOS		B			B			D				D

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	6	↑	↑
Volume (vph)	0	1176	107	121	615	0	265	0	189	6	36	121
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		0.95	1.00	1.00	0.95		0.97		1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.85	1.00
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.99	1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583	1850	1538	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.73		1.00	0.99	1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2634		1583	1850	1538	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1200	109	123	628	0	270	0	193	6	37	123
RTOR Reduction (vph)	0	0	61	0	0	0	0	0	163	0	0	112
Lane Group Flow (vph)	0	1200	48	123	628	0	270	0	30	0	43	11
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4	4		
Permitted Phases		2			8		8				4	
Actuated Green, G (s)		37.6	37.6	11.1	52.7		13.2		13.2	7.6	7.6	
Effective Green, g (s)		37.6	37.6	11.1	52.7		13.2		13.2	7.6	7.6	
Actuated g/C Ratio		0.44	0.44	0.13	0.62		0.15		0.15	0.09	0.09	
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)		1512	696	230	2181		407		244	164	137	
v/s Ratio Prot		c0.35		c0.07	0.18					c0.02		
v/s Ratio Perm			0.03				c0.10		0.02		0.01	
v/c Ratio		0.79	0.07	0.53	0.29		0.66		0.12	0.26	0.08	
Uniform Delay, d1		20.6	13.8	34.8	7.6		34.1		31.2	36.3	35.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		3.0	0.0	2.4	0.1		4.0		0.2	0.9	0.3	
Delay (s)		23.6	13.9	37.2	7.7		38.1		31.4	37.2	36.0	
Level of Service		C	B	D	A		D		C	D	D	
Approach Delay (s)		22.8			12.5		35.3			36.3		
Approach LOS		C			B		D			D		

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	85.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑	↑
Volume (vph)	247	148	73	687	273	218
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1514
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1514
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	260	156	77	723	287	229
RTOR Reduction (vph)	0	125	0	0	0	87
Lane Group Flow (vph)	260	31	77	723	287	142
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot		Perm	
Protected Phases		4	5	2	6	
Permitted Phases		4			6	
Actuated Green, G (s)	23.0	23.0	9.1	85.0	71.9	71.9
Effective Green, g (s)	23.0	23.0	9.1	85.0	71.9	71.9
Actuated g/C Ratio	0.20	0.20	0.08	0.73	0.62	0.62
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)	351	297	139	2593	3152	938
v/s Ratio Prot	c0.15		c0.04	c0.20	0.06	
v/s Ratio Perm		0.02			0.09	
v/c Ratio	0.74	0.10	0.55	0.28	0.09	0.15
Uniform Delay, d1	43.7	38.1	51.5	5.2	8.9	9.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	0.2	4.7	0.3	0.1	0.3
Delay (s)	51.9	38.2	56.2	5.5	8.9	9.6
Level of Service	D	D	E	A	A	A
Approach Delay (s)	46.7			10.4	9.2	
Approach LOS	D			B	A	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↔	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	57	0	0	7	0	58	27	1332	8	0	876	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					
Lane Util. Factor	1.00			1.00		1.00	0.95				0.95	
Frt	1.00			0.88		1.00	1.00				0.99	
Flt Protected	0.95			0.99		0.95	1.00				1.00	
Satd. Flow (prot)	1770			1629		1770	3536				3492	
Flt Permitted	1.00			0.95		0.95	1.00				1.00	
Satd. Flow (perm)	1863			1562		1770	3536				3492	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	0	0	7	0	61	28	1402	8	0	922	89
RTOR Reduction (vph)	0	0	0	0	56	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	60	0	0	12	0	28	1410	0	0	1003	0
Turn Type	Perm			Perm		Perm		Prot			Prot	
Protected Phases		4			8		5	2			1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)	3.5			3.5		1.2	35.7				30.5	
Effective Green, g (s)	3.5			3.5		1.2	35.7				30.5	
Actuated g/C Ratio	0.07			0.07		0.03	0.76				0.65	
Clearance Time (s)	4.0			4.0		4.0	4.0				4.0	
Vehicle Extension (s)	3.0			3.0		3.0	3.0				3.0	
Lane Grp Cap (vph)	138			116		45	2674				2256	
v/s Ratio Prot						0.02	c0.40				0.29	
v/s Ratio Perm	c0.03			0.01								
v/c Ratio	0.43			0.10		0.62	0.53				0.44	
Uniform Delay, d1	20.9			20.4		22.8	2.3				4.1	
Progression Factor	1.00			1.00		1.00	1.00				1.00	
Incremental Delay, d2	2.2			0.4		23.8	0.2				0.6	
Delay (s)	23.1			20.8		46.6	2.5				4.8	
Level of Service	C			C		D	A				A	
Approach Delay (s)	23.1			20.8		3.4					4.8	
Approach LOS	C			C		A					A	
<b>Intersection Summary</b>												
HCM Average Control Delay		4.8				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.52										
Actuated Cycle Length (s)		47.2				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		54.0%				ICU Level of Service		A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↔	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	38	2	23	515	50	228	19	1107	513	280	820	23
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt	1.00	0.85	1.00	0.88		1.00	0.95	1.00	0.95	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00		0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1778	1583	1770	1634		1770	3371	1770	3525	1770	3525	1770
Flt Permitted	0.51	1.00	0.73	1.00		0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	957	1583	1359	1634		1770	3371	1770	3525	1770	3525	1770
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	2	24	542	53	240	20	1165	540	295	863	24
RTOR Reduction (vph)	0	0	19	0	190	0	0	103	0	0	3	0
Lane Group Flow (vph)	0	42	5	542	103	0	20	1602	0	295	884	0
Turn Type	Perm			Perm		Perm		Prot			Prot	
Protected Phases		4			8		5	2			1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)	11.0	11.0	11.0	11.0		1.6	22.2				8.0	28.6
Effective Green, g (s)	11.0	11.0	11.0	11.0		1.6	22.2				8.0	28.6
Actuated g/C Ratio	0.21	0.21	0.21	0.21		0.03	0.42				0.15	0.54
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)	198	327	281	338		53	1407				266	1895
v/s Ratio Prot					0.06	0.01	c0.48				c0.17	0.25
v/s Ratio Perm	0.04	0.00	c0.40									
v/c Ratio	0.21	0.02	1.93	0.30		0.38	1.14				1.11	0.47
Uniform Delay, d1	17.5	16.8	21.1	17.9		25.3	15.5				22.6	7.6
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00				1.00	1.00
Incremental Delay, d2	0.5	0.0	430.9	0.5		4.5	71.7				87.6	0.8
Delay (s)	18.0	16.8	452.0	18.4		29.8	87.2				110.2	8.4
Level of Service	B	B	F	B		C	F				F	A
Approach Delay (s)	17.6			299.8		86.5					33.8	
Approach LOS	B			F		F					C	
<b>Intersection Summary</b>												
HCM Average Control Delay		115.7				HCM Level of Service		F				
HCM Volume to Capacity ratio		1.34										
Actuated Cycle Length (s)		53.2				Sum of lost time (s)		12.0				
Intersection Capacity Utilization		107.7%				ICU Level of Service		G				
Analysis Period (min)		15										
c Critical Lane Group												



HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔		↔	↔	↔
Volume (vph)	2	0	3	33	0	0	4	1137	116	10	953	3
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
Lane Util. Factor	1.00			1.00			1.00	0.95			1.00	0.95
Frt	0.92			1.00			1.00	0.99			1.00	1.00
Flt Protected	0.98			0.95			0.95	1.00			0.95	1.00
Satd. Flow (prot)	1678			1770			1770	3490			1770	3538
Flt Permitted	0.98			1.00			0.95	1.00			0.95	1.00
Satd. Flow (perm)	1678			1863			1770	3490			1770	3538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	0	3	35	0	0	4	1197	122	11	1003	3
RTOR Reduction (vph)	0	3	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	2	0	35	0	0	4	1311	0	11	1006	0
Turn Type	Perm			custom			Prot			Prot		
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	1.6			1.6		1.1	26.1			1.1	26.1	
Effective Green, g (s)	1.6			1.6		1.1	26.1			1.1	26.1	
Actuated g/C Ratio	0.04			0.04		0.03	0.64			0.03	0.64	
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)	66			73		48	2233			48	2263	
v/s Ratio Prot						0.00	c0.38			c0.01	0.28	
v/s Ratio Perm	0.00			c0.02								
v/c Ratio	0.03			0.48		0.08	0.59			0.23	0.44	
Uniform Delay, d1	18.9			19.2		19.4	4.2			19.4	3.7	
Progression Factor	1.00			1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.2			4.9		0.7	0.4			2.4	0.1	
Delay (s)	19.1			24.1		20.1	4.6			21.9	3.8	
Level of Service	B			C		C	A			C	A	
Approach Delay (s)	19.1				24.1			4.7			4.0	
Approach LOS	B				C			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay				4.7			HCM Level of Service			A		
HCM Volume to Capacity ratio				0.57								
Actuated Cycle Length (s)				40.8			Sum of lost time (s)			12.0		
Intersection Capacity Utilization				45.7%			ICU Level of Service			A		
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔		↔	↔	↔
Volume (vph)	17	0	30	94	0	0	17	1056	134	46	758	10
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
Lane Util. Factor	1.00			1.00			1.00	0.95			1.00	0.95
Frt	0.91			1.00			1.00	0.98			1.00	1.00
Flt Protected	0.98			0.95			0.95	1.00			0.95	1.00
Satd. Flow (prot)	1672			1770			1770	3479			1770	3532
Flt Permitted	0.98			1.00			0.95	1.00			0.95	1.00
Satd. Flow (perm)	1672			1863			1770	3479			1770	3532
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	0	32	99	0	0	18	1112	141	48	798	11
RTOR Reduction (vph)	0	29	0	0	0	0	0	14	0	0	1	0
Lane Group Flow (vph)	0	21	0	99	0	0	18	1239	0	48	808	0
Turn Type	Perm			custom			Prot			Prot		
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	3.3			3.3		1.2	22.5			2.4	23.7	
Effective Green, g (s)	3.3			3.3		1.2	22.5			2.4	23.7	
Actuated g/C Ratio	0.08			0.08		0.03	0.56			0.06	0.59	
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)	137			153		53	1947			106	2082	
v/s Ratio Prot						0.01	c0.36			0.03	c0.23	
v/s Ratio Perm	0.01			c0.05								
v/c Ratio	0.15			0.65		0.34	0.64			0.45	0.39	
Uniform Delay, d1	17.1			17.9		19.1	6.1			18.3	4.4	
Progression Factor	1.00			1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.5			9.1		3.8	0.7			3.1	0.1	
Delay (s)	17.7			26.9		22.9	6.7			21.3	4.5	
Level of Service	B			C		C	A			C	A	
Approach Delay (s)	17.7				26.9			7.0			5.5	
Approach LOS	B				C			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay				7.5			HCM Level of Service			A		
HCM Volume to Capacity ratio				0.64								
Actuated Cycle Length (s)				40.2			Sum of lost time (s)			12.0		
Intersection Capacity Utilization				56.8%			ICU Level of Service			B		
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	70	16	818	80	239	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Fr <sub>t</sub>	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3476		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3476		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	17	861	84	252	795
RTOR Reduction (vph)	0	11	14	0	0	0
Lane Group Flow (vph)	74	6	931	0	252	795
Confl. Peds. (#/hr)				25		
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	5.0	14.3	15.9	9.3	29.2	
Effective Green, g (s)	5.0	14.3	15.9	9.3	29.2	
Actuated g/C Ratio	0.12	0.34	0.38	0.22	0.69	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	210	686	1310	390	2449	
v/s Ratio Prot	c0.04	0.00	c0.27	c0.14	0.22	
v/s Ratio Perm		0.00				
v/c Ratio	0.35	0.01	0.71	0.65	0.32	
Uniform Delay, d1	17.1	9.2	11.2	15.0	2.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.0	1.8	3.7	0.1	
Delay (s)	18.1	9.3	13.0	18.6	2.7	
Level of Service	B	A	B	B	A	
Approach Delay (s)	16.5		13.0		6.5	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	4	10	4	365	39	481	20	426	299	271	569	15
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.77	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1838	1215	1681	1701	1583	1770	3539	1478	1770	3521		
Fit Permitted	0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1838	1215	1681	1701	1583	1770	3539	1478	1770	3521		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	11	4	384	41	506	21	448	315	285	599	16
RTOR Reduction (vph)	0	0	4	0	0	285	0	0	232	0	2	0
Lane Group Flow (vph)	0	15	0	211	214	221	21	448	83	285	613	0
Confl. Peds. (#/hr)				25					25			25
Turn Type	Split	Perm	Split	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot
Protected Phases	7	7		8	8	1	5	2			1	6
Permitted Phases			7			8			2			
Actuated Green, G (s)		2.0	2.0	12.2	12.2	26.2	1.6	15.8	15.8	14.0	28.2	
Effective Green, g (s)		2.0	2.0	12.2	12.2	26.2	1.6	15.8	15.8	14.0	28.2	
Actuated g/C Ratio		0.03	0.03	0.20	0.20	0.44	0.03	0.26	0.26	0.23	0.47	
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	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		61	41	342	346	797	47	932	389	413	1655	
v/s Ratio Prot		c0.01		0.13	c0.13	0.06	0.01	c0.13		c0.16	0.17	
v/s Ratio Perm			0.00			0.07			0.06			
v/c Ratio		0.25	0.00	0.62	0.62	0.28	0.45	0.48	0.21	0.69	0.37	
Uniform Delay, d1		28.3	28.0	21.8	21.8	10.8	28.8	18.6	17.2	21.0	10.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.24	0.92	
Incremental Delay, d2		2.1	0.0	3.3	3.3	0.2	6.6	1.8	1.2	4.6	0.6	
Delay (s)		30.4	28.1	25.1	25.1	11.0	35.4	20.4	18.5	30.6	10.0	
Level of Service		C	C	C	C	B	D	C	B	C	A	
Approach Delay (s)		29.9			17.4			20.0			16.5	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	192	311	156	17	18	445	299	73	101	321	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	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	0.95	0.95	0.97	0.95	0.97	0.95	1.00	1.00	0.95	0.95
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.85	1.00	0.97	1.00	1.00	0.85	1.00	0.99	1.00	0.99	0.99
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.99	1.00
Satd. Flow (prot)	1854	1583	1681	1646	3433	3539	1488	1770	3485	1770	1863	1449
Flt Permitted	1.00	1.00	0.95	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.99	1.00
Satd. Flow (perm)	1854	1583	1681	1646	3433	3539	1488	1770	3485	1770	1863	1449
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	202	327	164	18	19	468	315	77	106	338	25
RTOR Reduction (vph)	0	0	258	0	15	0	0	53	0	8	0	0
Lane Group Flow (vph)	0	222	69	102	84	0	468	315	24	106	355	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Prot	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)		10.7	10.7	8.3	8.3		10.8	18.4	18.4	6.6	14.2	
Effective Green, g (s)		10.7	12.7	8.3	8.3		10.8	18.4	18.4	6.6	14.2	
Actuated g/C Ratio		0.18	0.21	0.14	0.14		0.18	0.31	0.31	0.11	0.24	
Clearance Time (s)		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		5.0	3.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		331	335	233	228		618	1085	456	195	825	
v/s Ratio Prot		c0.12		c0.06	0.05		c0.14	0.09		c0.06	c0.10	
v/s Ratio Perm			0.04					0.02				
v/c Ratio		0.67	0.21	0.44	0.37		0.76	0.29	0.05	0.54	0.43	
Uniform Delay, d1		23.0	19.5	23.7	23.5		23.4	15.8	14.7	25.3	19.5	
Progression Factor		1.00	1.00	1.00	1.00		0.84	0.76	0.69	1.00	1.00	
Incremental Delay, d2		5.3	0.3	1.3	1.0		5.3	0.6	0.2	3.1	1.6	
Delay (s)		28.3	19.8	25.0	24.5		25.0	12.6	10.3	28.4	21.1	
Level of Service		C	B	C	C		C	B	B	C	C	
Approach Delay (s)		23.2			24.8			19.1			22.7	
Approach LOS		C			C			B			C	

Intersection Summary	
HCM Average Control Delay	21.6
HCM Volume to Capacity ratio	0.57
Actuated Cycle Length (s)	60.0
Intersection Capacity Utilization	61.7%
Analysis Period (min)	15

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	84	235	481	94	22	168	218	185	14	93	22
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	0.97	1.00	1.00	0.85	1.00	0.98	1.00	0.99
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.99
Satd. Flow (prot)	1770	1863	1583	1770	1810	1770	1863	1449	1810	1770	1863	1449
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.99
Satd. Flow (perm)	1770	1863	1583	1770	1810	1770	1863	1449	1810	1770	1863	1449
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	169	88	247	506	99	23	177	229	195	15	98	23
RTOR Reduction (vph)	0	0	170	0	11	0	0	0	158	0	11	0
Lane Group Flow (vph)	169	88	77	506	111	0	177	229	37	0	125	0
Confl. Peds. (#/hr)									25			
Turn Type	Prot		pm+ov	Prot		Split	Perm	Split				
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2				3					
Actuated Green, G (s)	6.5	7.7	19.7	20.2	21.4		12.0	12.0	12.0		7.6	
Effective Green, g (s)	6.5	7.7	19.7	20.2	21.4		12.0	12.0	12.0		7.6	
Actuated g/C Ratio	0.10	0.12	0.31	0.32	0.34		0.19	0.19	0.19		0.12	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	181	226	591	563	610		334	352	274		217	
v/s Ratio Prot	0.10	c0.05	0.02	c0.29	0.06		0.10	c0.12			c0.07	
v/s Ratio Perm			0.02					0.03				
v/c Ratio	0.93	0.39	0.13	0.90	0.18		0.53	0.65	0.13		0.58	
Uniform Delay, d1	28.3	25.7	15.7	20.7	14.9		23.2	23.8	21.4		26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	47.8	1.3	0.1	17.0	0.2		1.5	4.3	0.2		3.7	
Delay (s)	76.1	27.0	15.8	37.7	15.0		24.7	28.1	21.7		30.1	
Level of Service	E	C	B	D	B		C	C	C		C	
Approach Delay (s)		38.0			33.3			25.0			30.1	
Approach LOS		D			C			C			C	

Intersection Summary	
HCM Average Control Delay	31.7
HCM Volume to Capacity ratio	0.70
Actuated Cycle Length (s)	63.5
Intersection Capacity Utilization	59.5%
Analysis Period (min)	15

c Critical Lane Group



AM Peak Hour - Buildout with Mid-Town Interchange Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.183
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0
Volume Module:
Base Vol: 57 1 92 0 1 0 0 7 10 99 21 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 57 1 92 0 1 0 0 7 10 99 21 1
Added Vol: 1 0 2 0 0 0 0 2 1 10 2 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 58 1 94 0 1 0 0 9 11 109 23 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 61 1 99 0 1 0 0 9 12 115 24 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 61 1 99 0 1 0 0 9 12 115 24 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 61 1 99 0 1 0 0 9 12 115 24 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.38 0.01 0.61 0.00 1.00 0.00 0.00 0.45 0.55 0.82 0.17 0.01
Final Sat.: 334 6 541 0 783 0 0 383 468 650 137 6
Capacity Analysis Module:
Vol/Sat: 0.18 0.18 0.18 xxxx 0.00 xxxx xxxx 0.02 0.02 0.18 0.18 0.18
Crit Moves: \*\*\*\*
Delay/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
LOS by Move: A A A \* A \* \* A A A A A
ApproachDel: 7.8 7.4 7.1 8.3
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 7.8 7.4 7.1 8.3
LOS by Appr: A A A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.2 0.2

AM Peak Hour - Buildout with Mid-Town Interchange Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 6.0 Worst Case Level Of Service: B[ 12.3]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0
Volume Module:
Base Vol: 105 27 2 0 49 14 14 0 78 10 1 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 105 27 2 0 49 14 14 0 78 10 1 0
Added Vol: 4 1 0 0 4 3 1 0 13 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 109 28 2 0 53 17 15 0 91 10 1 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 115 29 2 0 56 18 16 0 96 11 1 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 115 29 2 0 56 18 16 0 96 11 1 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx xxxx xxxx 7.1 6.5 6.2 7.1 6.5 xxxx
FollowUpTim: 2.2 xxxx xxxx xxxx xxxx 3.5 4.0 3.3 3.5 4.0 xxxx
Capacity Module:
Cnflct Vol: 74 xxxx xxxx xxxx xxxx 325 326 65 373 334 xxxx
Potent Cap.: 1539 xxxx xxxx xxxx xxxx 632 596 1005 588 590 xxxx
Move Cap.: 1539 xxxx xxxx xxxx xxxx 592 548 1005 500 543 xxxx
Volume/Cap: 0.07 xxxx xxxx xxxx xxxx 0.03 0.00 0.10 0.02 0.00 xxxx
Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 7.5 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx 915 xxxx 503 xxxx xxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 0.4 xxxxx 0.1 xxxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 9.5 xxxxx 12.3 xxxxx xxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 9.5 12.3
ApproachLOS: \* \* A B \*
Note: Queue reported is the number of cars per lane.

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	12	545	1198	145	68	9
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	574	1261	153	72	9
RTOR Reduction (vph)	0	0	0	45	0	8
Lane Group Flow (vph)	13	574	1261	108	72	1
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.3	64.5	59.2	59.2	11.0	11.0
Effective Green, g (s)	1.3	64.5	59.2	59.2	11.0	11.0
Actuated g/C Ratio	0.02	0.77	0.71	0.71	0.13	0.13
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)	28	2656	1283	1122	233	209
v/s Ratio Prot	c0.01	0.17	c0.70		c0.04	
v/s Ratio Perm				0.07		0.00
v/c Ratio	0.46	0.22	0.98	0.10	0.31	0.01
Uniform Delay, d1	40.8	2.6	11.7	3.8	32.8	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.0	21.0	0.0	3.4	0.0
Delay (s)	52.4	2.6	32.6	3.8	36.2	31.5
Level of Service	D	A	C	A	D	C
Approach Delay (s)		3.7	29.5		35.7	
Approach LOS		A	C		D	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	13	593	19	229	1324	83	38	6	151	44	13	9
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3425		1770	3414			1785	1583		1794	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.76	1.00		0.78	1.00
Satd. Flow (perm)	1770	3425		1770	3414			1409	1583		1449	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	624	20	241	1394	87	40	6	159	46	14	9
RTOR Reduction (vph)	0	4	0	0	7	0	0	0	128	0	0	7
Lane Group Flow (vph)	14	640	0	241	1474	0	0	46	31	0	60	2
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4		8	8
Actuated Green, G (s)	1.2	18.5		11.3	28.6			10.3	10.3		10.3	10.3
Effective Green, g (s)	1.2	18.5		11.3	28.6			10.3	10.3		10.3	10.3
Actuated g/C Ratio	0.02	0.36		0.22	0.55			0.20	0.20		0.20	0.20
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)	41	1216		384	1874			279	313		286	313
v/s Ratio Prot	0.01	0.19		c0.14	c0.43							
v/s Ratio Perm							0.03	0.02			c0.04	0.00
v/c Ratio	0.34	0.53		0.63	0.79			0.16	0.10		0.21	0.01
Uniform Delay, d1	25.1	13.3		18.5	9.3			17.3	17.1		17.5	16.8
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	4.9	0.4		3.2	2.3			0.3	0.1		0.4	0.0
Delay (s)	30.0	13.7		21.7	11.6			17.6	17.2		17.9	16.8
Level of Service	C	B		C	B			B	B		B	B
Approach Delay (s)		14.1			13.0			17.3			17.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↗	↖	↕	↗	↖	↕	↗	↖	↕	↗
Volume (vph)	141	793	4	125	1423	142	39	23	84	194	24	277
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3436		1770	3438	1583		1806	1583		1783	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.64	1.00		0.70	1.00
Satd. Flow (perm)	1770	3436		1770	3438	1583		1196	1583		1310	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	835	4	132	1498	149	41	24	88	204	25	292
RTOR Reduction (vph)	0	0	0	0	0	53	0	0	68	0	0	164
Lane Group Flow (vph)	148	839	0	132	1498	96	0	65	20	0	229	128
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.0	65.2		13.0	64.2	64.2	25.8	25.8		25.8	25.8	
Effective Green, g (s)	14.0	65.2		13.0	64.2	64.2	25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.12	0.56		0.11	0.55	0.55	0.22	0.22		0.22	0.22	
Clearance Time (s)	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	
Lane Grp Cap (vph)	214	1931		198	1903	876	266	352		291	352	
v/s Ratio Prot	c0.08	0.24		0.07	c0.44		0.05	0.01		c0.17	0.08	
v/s Ratio Perm					0.06		0.05	0.01		c0.17	0.08	
v/c Ratio	0.69	0.43		0.67	0.79	0.11	0.24	0.06		0.79	0.36	
Uniform Delay, d1	48.9	14.7		49.4	20.5	12.3	37.1	35.5		42.5	38.2	
Progression Factor	1.00	1.00		1.20	0.58	0.88	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.3	0.7		5.7	2.4	0.2	0.5	0.1		13.1	0.6	
Delay (s)	58.2	15.4		65.1	14.3	11.0	37.6	35.6		55.6	38.8	
Level of Service	E	B		E	B	B	D	D		E	D	
Approach Delay (s)	21.8			17.8			36.4			46.2		
Approach LOS	C			B			D			D		

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↗	↖	↕	↗	↖	↕	↗	↖	↕	↗
Volume (vph)	50	1000	14	41	1599	294	8	0	13	173	4	55
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3432		1770	3438	1583		1770	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.43	1.00		0.73	1.00
Satd. Flow (perm)	1770	3432		1770	3438	1583		801	1583		1351	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1053	15	43	1683	309	8	0	14	182	4	58
RTOR Reduction (vph)	0	1	0	0	0	92	0	0	11	0	0	47
Lane Group Flow (vph)	53	1067	0	43	1683	217	0	8	3	0	186	11
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases					6	4		4	4			4
Actuated Green, G (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Effective Green, g (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Actuated g/C Ratio	0.07	0.65		0.06	0.65	0.65	0.18	0.18		0.18	0.18	
Clearance Time (s)	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	
Lane Grp Cap (vph)	117	2240		110	2229	1026	146	288		246	288	
v/s Ratio Prot	c0.03	0.31		0.02	c0.49		0.01	0.00		c0.14	0.01	
v/s Ratio Perm					0.14		0.01	0.00		c0.14	0.01	
v/c Ratio	0.45	0.48		0.39	0.76	0.21	0.05	0.01		0.76	0.04	
Uniform Delay, d1	52.1	10.2		52.3	14.1	8.3	39.2	38.9		45.0	39.1	
Progression Factor	1.40	0.70		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	0.7		2.3	2.4	0.5	0.2	0.0		12.4	0.1	
Delay (s)	75.5	7.8		54.6	16.5	8.8	39.4	38.9		57.4	39.1	
Level of Service	E	A		D	B	A	D	D		E	D	
Approach Delay (s)	11.0			16.1			39.1			53.1		
Approach LOS	B			B			D			D		

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	498	815	83	241	1288	238	136	109	143	267	119	565	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00	
Flpb. ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98	
Flpb. ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3433	3364		1770	3438	1478	1681	1758	1478	3433	1863	1550	
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3433	3364		1770	3438	1478	1681	1758	1478	3433	1863	1550	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	508	832	85	246	1314	243	139	111	146	272	121	577	
RTOR Reduction (vph)	0	5	0	0	100	0	0	127	0	0	0	0	
Lane Group Flow (vph)	508	912	0	246	1314	143	122	128	19	272	121	577	
Confl. Peds. (#/hr)			30			30			30			30	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free	
Protected Phases	5	2		1	6		8	8		4	4		
Permitted Phases						6			8			Free	
Actuated Green, G (s)	22.8	56.8		21.9	55.9	55.9	17.1	17.1	17.1	17.7	17.7	130.0	
Effective Green, g (s)	22.8	56.8		21.9	55.9	55.9	17.1	17.1	17.1	17.7	17.7	130.0	
Actuated g/C Ratio	0.18	0.44		0.17	0.43	0.43	0.13	0.13	0.13	0.14	0.14	1.00	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	602	1470		298	1478	636	221	231	194	467	254	1550	
v/s Ratio Prot	c0.15	0.27		0.14	c0.38		0.07	c0.07		c0.08	0.06		
v/s Ratio Perm					0.10			0.01				c0.37	
v/c Ratio	0.84	0.62		0.83	0.89	0.23	0.55	0.55	0.10	0.58	0.48	0.37	
Uniform Delay, d1	51.9	28.3		52.2	34.2	23.4	52.9	52.9	49.7	52.7	51.9	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	
Incremental Delay, d2	10.5	2.0		16.8	8.4	0.8	3.0	2.9	0.2	1.9	1.4	0.7	
Delay (s)	62.3	30.2		69.0	42.5	24.2	55.8	55.7	49.9	54.5	53.3	0.7	
Level of Service	E	C		E	D	C	E	E	D	D	D	A	
Approach Delay (s)	41.7			43.7			53.6				22.3		
Approach LOS	D			D			D				C		
<b>Intersection Summary</b>													
HCM Average Control Delay	39.4			HCM Level of Service					D				
HCM Volume to Capacity ratio	0.78												
Actuated Cycle Length (s)	130.0					Sum of lost time (s)				16.5			
Intersection Capacity Utilization	76.5%			ICU Level of Service					D				
Analysis Period (min)	15												
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	186	1001	16	8	1458	147	5	3	20	138	0	146	
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.97	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3432		1770	3438	1583	1806	1583	1681	1681	1681	1583	
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.89	1.00	0.75	0.75	0.75	1.00	
Satd. Flow (perm)	1770	3432		1770	3438	1583	1653	1583	1332	1332	1332	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	190	1021	16	8	1488	150	5	3	20	141	0	149	
RTOR Reduction (vph)	0	1	0	0	58	0	17	0	17	0	0	128	
Lane Group Flow (vph)	190	1036	0	8	1488	92	8	3	70	71	21	21	
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	
Turn Type	Prot			Prot		Perm	Perm	Perm	Perm	Perm		Perm	
Protected Phases	5	2		1	6		8	8	8	4	4		
Permitted Phases						6	8		8	4		4	
Actuated Green, G (s)	16.5	86.0		1.4	70.9	70.9	16.6	16.6	16.6	16.6	16.6	16.6	
Effective Green, g (s)	16.5	86.0		1.4	70.9	70.9	16.6	16.6	16.6	16.6	16.6	16.6	
Actuated g/C Ratio	0.14	0.74		0.01	0.61	0.61	0.14	0.14	0.14	0.14	0.14	0.14	
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)	252	2544		21	2101	968	237	227	191	191	191	227	
v/s Ratio Prot	c0.11	0.30		0.00	c0.43								
v/s Ratio Perm					0.06		0.00	0.00	0.05	c0.05	0.01		
v/c Ratio	0.75	0.41		0.38	0.71	0.10	0.03	0.01	0.37	0.37	0.09	0.09	
Uniform Delay, d1	47.8	5.6		56.9	15.5	9.3	42.8	42.7	44.9	45.0	43.2		
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	12.0	0.5		11.2	2.0	0.2	0.1	0.0	1.2	1.2	0.2	0.2	
Delay (s)	59.8	6.0		68.0	17.5	9.5	42.9	42.7	46.1	46.2	43.3		
Level of Service	E	A		E	B	A	D	D	D	D	D	D	
Approach Delay (s)	14.4			17.0			42.7				44.7		
Approach LOS	B			B			D				D		
<b>Intersection Summary</b>													
HCM Average Control Delay	18.7			HCM Level of Service					B				
HCM Volume to Capacity ratio	0.66												
Actuated Cycle Length (s)	116.0					Sum of lost time (s)				12.0			
Intersection Capacity Utilization	71.1%			ICU Level of Service					C				
Analysis Period (min)	15												
c Critical Lane Group													



HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	7	↑	↑↑
Volume (vph)	0	840	269	187	872	0	300	0	246	7	106	455
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		0.95	1.00	1.00	0.95		0.97		1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.85	1.00
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	1.00	1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583	1857	1538	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	1.00	1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2468		1583	1857	1538	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	857	274	191	890	0	306	0	251	7	108	464
RTOR Reduction (vph)	0	0	198	0	0	0	0	0	168	0	0	61
Lane Group Flow (vph)	0	857	76	191	890	0	306	0	83	0	115	403
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4	4		
Permitted Phases		2			8		18				4	
Actuated Green, G (s)		24.4	24.4	11.0	39.4		14.1		29.1	23.0	23.0	
Effective Green, g (s)		24.4	24.4	11.0	39.4		14.1		29.1	23.0	23.0	
Actuated g/C Ratio		0.28	0.28	0.12	0.45		0.16		0.33	0.26	0.26	
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)		948	436	220	1576		393		521	483	400	
v/s Ratio Prot		c0.25		c0.11	0.25					0.06		
v/s Ratio Perm			0.05				c0.12		0.05		c0.26	
v/c Ratio		0.90	0.17	0.87	0.56		0.78		0.16	0.24	1.01	
Uniform Delay, d1		30.9	24.4	38.0	18.2		35.7		21.0	25.8	32.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.8	0.2	28.3	0.5		9.4		0.1	0.3	47.1	
Delay (s)		42.7	24.6	66.3	18.7		45.1		21.2	26.1	79.8	
Level of Service		D	C	E	B		D		C	C	E	
Approach Delay (s)		38.3			27.1		34.3			69.2		
Approach LOS		D			C		C			E		

Intersection Summary			
HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑	↑
Volume (vph)	160	89	117	680	950	209
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1514
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1514
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	94	123	716	1000	220
RTOR Reduction (vph)	0	78	0	0	0	86
Lane Group Flow (vph)	168	16	123	716	1000	134
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	19.8	19.8	13.4	88.2	70.8	70.8
Effective Green, g (s)	19.8	19.8	13.4	88.2	70.8	70.8
Actuated g/C Ratio	0.17	0.17	0.12	0.76	0.61	0.61
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)	302	256	204	2691	3104	924
v/s Ratio Prot	c0.09		c0.07	0.20	c0.20	
v/s Ratio Perm		0.01				0.09
v/c Ratio	0.56	0.06	0.60	0.27	0.32	0.15
Uniform Delay, d1	44.1	40.3	48.8	4.2	11.0	9.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.1	5.0	0.2	0.3	0.3
Delay (s)	46.3	40.4	53.7	4.4	11.2	10.0
Level of Service	D	D	D	A	B	A
Approach Delay (s)	44.2			11.6	11.0	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	61	0	74	15	0	17	26	864	2	32	1229	84
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.93	1.00		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.98	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1690	1770		3538	1770		3505	3505	
Flt Permitted	0.73	1.00		0.82	0.95		1.00	0.95		1.00	1.00	
Satd. Flow (perm)	1369	1583		1420	1770		3538	1770		3505	3505	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	0	78	16	0	18	27	909	2	34	1294	88
RTOR Reduction (vph)	0	0	68	0	16	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	64	10	0	18	0	27	911	0	34	1375	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	5.6	5.6		5.6		1.3	25.7		2.5	26.9		
Effective Green, g (s)	5.6	5.6		5.6		1.3	25.7		2.5	26.9		
Actuated g/C Ratio	0.12	0.12		0.12		0.03	0.56		0.05	0.59		
Clearance Time (s)	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		
Lane Grp Cap (vph)	167	194		174		50	1985		97	2059		
v/s Ratio Prot						0.02	0.26		c0.02	c0.39		
v/s Ratio Perm	c0.05	0.01		0.01								
v/c Ratio	0.38	0.05		0.10		0.54	0.46		0.35	0.67		
Uniform Delay, d1	18.5	17.7		17.9		22.0	5.9		20.9	6.4		
Progression Factor	1.00	1.00		1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2	1.5	0.1		0.3		11.4	0.2		2.2	1.7		
Delay (s)	20.0	17.9		18.1		33.3	6.1		23.1	8.2		
Level of Service	B	B		B		C	A		C	A		
Approach Delay (s)	18.8			18.1		6.9			8.5			
Approach LOS	B			B		A			A			
<b>Intersection Summary</b>												
HCM Average Control Delay	8.6			HCM Level of Service				A				
HCM Volume to Capacity ratio	0.56											
Actuated Cycle Length (s)	45.8			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	63.3%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	32	16	38	328	46	261	0	781	236	343	1162	0
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	1.00	1.00	1.00	1.00		0.95	1.00		0.95	1.00	0.95
Frt	1.00	0.85	1.00	0.87	1.00		0.97	1.00		1.00	1.00	1.00
Flt Protected	0.97	1.00	0.95	1.00	1.00		1.00	0.95		1.00	0.95	1.00
Satd. Flow (prot)	1803	1583	1770	1625	1625		3416	1770		3539	3539	
Flt Permitted	0.60	1.00	0.72	1.00	1.00		1.00	0.95		1.00	1.00	1.00
Satd. Flow (perm)	1117	1583	1348	1625	1625		3416	1770		3539	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	17	40	345	48	275	0	822	248	361	1223	0
RTOR Reduction (vph)	0	0	31	0	213	0	0	57	0	0	0	0
Lane Group Flow (vph)	0	51	9	345	110	0	0	1013	0	361	1223	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	11.0	11.0	11.0	11.0		18.1		8.0	30.1			
Effective Green, g (s)	11.0	11.0	11.0	11.0		18.1		8.0	30.1			
Actuated g/C Ratio	0.22	0.22	0.22	0.22		0.37		0.16	0.61			
Clearance Time (s)	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			
Lane Grp Cap (vph)	250	355	302	364		1259		288	2170			
v/s Ratio Prot				0.07		c0.30		c0.20	0.35			
v/s Ratio Perm	0.05	0.01	c0.26									
v/c Ratio	0.20	0.03	1.14	0.30		0.80		1.25	0.56			
Uniform Delay, d1	15.5	14.9	19.1	15.9		13.9		20.6	5.6			
Progression Factor	1.00	1.00	1.00	1.00		1.00		1.00	1.00			
Incremental Delay, d2	0.4	0.0	96.0	0.5		3.8		139.4	1.1			
Delay (s)	15.9	14.9	115.0	16.3		17.7		159.9	6.7			
Level of Service	B	B	F	B		B		F	A			
Approach Delay (s)	15.5			67.3		17.7		41.6				
Approach LOS	B			E		B		D				
<b>Intersection Summary</b>												
HCM Average Control Delay	38.5			HCM Level of Service				D				
HCM Volume to Capacity ratio	1.00											
Actuated Cycle Length (s)	49.1			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	87.2%			ICU Level of Service				E				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔	↔	↔		↔	↔	
Volume (vph)	6	0	11	92	0	7	8	869	36	0	1224	5
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	
Lane Util. Factor	1.00			1.00		1.00	0.95			0.95		
Frt	0.91		1.00	0.85		1.00	0.99			1.00		
Flt Protected	0.98		0.95	1.00		0.95	1.00			1.00		
Satd. Flow (prot)	1667		1770	1583		1770	3518			3537		
Flt Permitted	0.98		0.75	1.00		0.95	1.00			1.00		
Satd. Flow (perm)	1667		1389	1583		1770	3518			3537		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	0	12	97	0	7	8	915	38	0	1288	5
RTOR Reduction (vph)	0	10	0	0	0	6	0	3	0	0	0	0
Lane Group Flow (vph)	0	8	0	97	0	1	8	950	0	0	1293	0
Turn Type	Perm		custom	custom		Prot		Prot		Prot		Prot
Protected Phases		4				5	2			1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	6.0			6.0		6.0	1.1	26.6			21.5	
Effective Green, g (s)	6.0			6.0		6.0	1.1	26.6			21.5	
Actuated g/C Ratio	0.15			0.15		0.15	0.03	0.66			0.53	
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)	246			205		234	48	2305			1873	
v/s Ratio Prot						0.00		c0.27			c0.37	
v/s Ratio Perm	0.00			c0.07		0.00						
v/c Ratio	0.03			0.47		0.00	0.17	0.41			0.69	
Uniform Delay, d1	14.8			15.9		14.8	19.3	3.3			7.1	
Progression Factor	1.00			1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2	0.1			1.7		0.0	1.6	0.1			1.1	
Delay (s)	14.9			17.6		14.8	20.9	3.4			8.2	
Level of Service	B			B		B	C	A			A	
Approach Delay (s)	14.9			17.4		17.4		3.6			8.2	
Approach LOS	B			B		B		A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		6.8					HCM Level of Service			A		
HCM Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		40.6					Sum of lost time (s)			12.0		
Intersection Capacity Utilization		52.4%					ICU Level of Service			A		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔	↔	↔		↔	↔	
Volume (vph)	23	0	41	182	0	53	46	653	80	19	806	25
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	
Lane Util. Factor	1.00			1.00		1.00	0.95			0.95		
Frt	0.91		1.00	0.85		1.00	0.98			1.00		
Flt Protected	0.98		0.95	1.00		0.95	1.00			1.00		
Satd. Flow (prot)	1671		1770	1583		1770	3481			1770	3523	
Flt Permitted	0.98		0.71	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (perm)	1671		1329	1583		1770	3481			1770	3523	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	0	43	192	0	56	48	687	84	20	848	26
RTOR Reduction (vph)	0	34	0	0	0	45	0	16	0	0	4	0
Lane Group Flow (vph)	0	33	0	192	0	11	48	755	0	20	870	0
Turn Type	Perm		custom	custom		Prot		Prot		Prot		Prot
Protected Phases		4				5	2			1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	8.2			8.2		8.2	3.0	18.8			1.1	16.9
Effective Green, g (s)	8.2			8.2		8.2	3.0	18.8			1.1	16.9
Actuated g/C Ratio	0.20			0.20		0.20	0.07	0.47			0.03	0.42
Clearance Time (s)	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
Lane Grp Cap (vph)	342			272		324	132	1632			49	1485
v/s Ratio Prot							0.03	c0.22			0.01	c0.25
v/s Ratio Perm	0.02			c0.14		0.01						
v/c Ratio	0.10			0.71		0.04	0.36	0.46			0.41	0.59
Uniform Delay, d1	12.9			14.8		12.8	17.6	7.2			19.2	8.9
Progression Factor	1.00			1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.1			8.1		0.0	1.7	0.2			5.5	0.6
Delay (s)	13.1			22.9		12.8	19.3	7.4			24.6	9.5
Level of Service	B			C		B	B	A			C	A
Approach Delay (s)	13.1			20.6		20.6		8.1			9.8	
Approach LOS	B			C		C		A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		10.6					HCM Level of Service			B		
HCM Volume to Capacity ratio		0.57										
Actuated Cycle Length (s)		40.1					Sum of lost time (s)			8.0		
Intersection Capacity Utilization		55.7%					ICU Level of Service			B		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Volume (vph)	199	102	701	115	180	601
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3440		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3440		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	209	107	738	121	189	633
RTOR Reduction (vph)	0	40	24	0	0	0
Lane Group Flow (vph)	209	67	835	0	189	633
Confl. Peds. (#/hr)				25		
Turn Type	pm+ov		Prot			
Protected Phases	6	7	8	7		4
Permitted Phases	6					
Actuated Green, G (s)	7.4	13.5	17.8	6.1		27.9
Effective Green, g (s)	7.4	13.5	17.8	6.1		27.9
Actuated g/C Ratio	0.17	0.31	0.41	0.14		0.64
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	302	640	1414	249		2280
v/s Ratio Prot	c0.12	0.01	c0.24	c0.11		0.18
v/s Ratio Perm	0.03					
v/c Ratio	0.69	0.10	0.59	0.76		0.28
Uniform Delay, d1	16.9	10.6	9.9	17.9		3.3
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	6.7	0.1	0.7	12.5		0.1
Delay (s)	23.6	10.7	10.6	30.4		3.4
Level of Service	C	B	B	C		A
Approach Delay (s)	19.2		10.6		9.6	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	29	33	15	292	4	395	10	419	455	223	385	5
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	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Fit Protected	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1820	1448	1681	1687	1583	1770	3539	1480	1770	3531		
Fit Permitted	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1820	1448	1681	1687	1583	1770	3539	1480	1770	3531		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	35	16	307	4	416	11	441	479	235	405	5
RTOR Reduction (vph)	0	0	14	0	0	265	0	0	350	0	1	0
Lane Group Flow (vph)	0	66	2	157	154	151	11	441	129	235	409	0
Confl. Peds. (#/hr)				25				25			25	
Turn Type	Split	Perm	Split	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot
Protected Phases	7	7		8	8	1	5	2			1	6
Permitted Phases	7						8					
Actuated Green, G (s)	6.0	6.0	10.9	10.9	21.8	1.6	16.2	16.2	10.9	25.5		
Effective Green, g (s)	6.0	6.0	10.9	10.9	21.8	1.6	16.2	16.2	10.9	25.5		
Actuated g/C Ratio	0.10	0.10	0.18	0.18	0.36	0.03	0.27	0.27	0.18	0.42		
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	5.0	5.0	3.0	5.0		
Lane Grp Cap (vph)	182	145	305	306	681	47	956	400	322	1501		
v/s Ratio Prot	c0.04		c0.09	0.09	0.04	0.01	c0.12		c0.13	0.12		
v/s Ratio Perm	0.00						0.09					
v/c Ratio	0.36	0.01	0.51	0.50	0.22	0.23	0.46	0.32	0.73	0.27		
Uniform Delay, d1	25.2	24.3	22.2	22.1	13.2	28.6	18.3	17.5	23.2	11.2		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.06	0.78		
Incremental Delay, d2	1.2	0.0	1.5	1.3	0.2	2.6	1.6	2.1	7.7	0.4		
Delay (s)	26.4	24.4	23.6	23.4	13.4	31.2	19.9	19.7	32.2	9.1		
Level of Service	C	C	C	C	B	C	B	B	C	A		
Approach Delay (s)	26.0			17.7			19.9			17.6		
Approach LOS	C			B			B			B		

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔		↔	↔	↔	↔	↔	↔
Volume (vph)	10	105	223	148	54	51	372	242	123	63	172	11
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	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.94	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.99	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1854	1583	1681	1604	3433	3539	1495	1770	3490	1770	1833	1461
Fit Permitted	1.00	1.00	0.95	0.99	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1854	1583	1681	1604	3433	3539	1495	1770	3490	1770	1833	1461
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	111	235	156	57	54	392	255	129	66	181	12
RTOR Reduction (vph)	0	0	195	0	45	0	0	0	85	0	8	0
Lane Group Flow (vph)	0	122	40	136	86	0	392	255	44	66	185	0
Confl. Peds. (#/hr)	25				25				25			25

Turn Type	Split	Perm	Split	Prot	Perm	Prot	Perm	Split
Protected Phases	4	4	8	8	5	2	1	6
Permitted Phases			4			2		
Actuated Green, G (s)	10.3	10.3	8.5	8.5	11.6	20.5	4.7	13.6
Effective Green, g (s)	10.3	10.3	8.5	8.5	11.6	20.5	4.7	13.6
Actuated g/C Ratio	0.17	0.17	0.14	0.14	0.19	0.34	0.08	0.23
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	5.0	3.0	3.0	5.0
Lane Grp Cap (vph)	318	272	238	227	664	1209	511	791
v/s Ratio Prot	c0.07		c0.08	0.05	c0.11	0.07	c0.04	c0.05
v/s Ratio Perm		0.03				0.03		
v/c Ratio	0.38	0.15	0.57	0.38	0.59	0.21	0.09	0.23
Uniform Delay, d1	22.0	21.1	24.0	23.4	22.0	14.0	13.4	18.9
Progression Factor	1.00	1.00	1.00	1.00	0.80	0.66	0.53	1.00
Incremental Delay, d2	0.8	0.3	3.3	1.1	1.8	0.3	0.3	0.7
Delay (s)	22.8	21.4	27.3	24.4	19.4	9.6	7.4	19.6
Level of Service	C	C	C	C	B	A	A	C
Approach Delay (s)	21.9			25.9		14.2		22.0
Approach LOS	C			C		B		C

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
16: Granite Creek Road-SR 17 NB Ramps & Santos Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	32	152	207	233	16	2	236	81	364	10	179	32
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.85	0.98	1.00	0.98	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1833	1770	1863	1461	1822	1770	1833	1461
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1833	1770	1863	1461	1822	1770	1833	1461
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	160	218	245	17	2	248	85	383	11	188	34
RTOR Reduction (vph)	0	0	126	0	1	0	0	0	301	0	11	0
Lane Group Flow (vph)	34	160	92	245	18	0	248	85	82	0	222	0
Confl. Peds. (#/hr)									25			

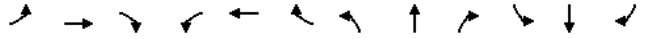
Turn Type	Prot	pm+ov	Prot	Split	Perm	Split			
Protected Phases	5	2	3	1	6	3	3	4	4
Permitted Phases			2				3		
Actuated Green, G (s)	1.5	10.3	22.8	8.7	17.5	12.5	12.5	12.5	10.8
Effective Green, g (s)	1.5	10.3	22.8	8.7	17.5	12.5	12.5	12.5	10.8
Actuated g/C Ratio	0.03	0.18	0.39	0.15	0.30	0.21	0.21	0.21	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	46	329	728	264	550	380	399	313	338
v/s Ratio Prot	0.02	c0.09	0.03	c0.14	0.01	c0.14	0.05		c0.12
v/s Ratio Perm			0.03				0.06		
v/c Ratio	0.74	0.49	0.13	0.93	0.03	0.65	0.21	0.26	0.66
Uniform Delay, d1	28.2	21.6	11.4	24.5	14.4	20.9	18.9	19.1	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.3	1.3	0.1	36.2	0.0	4.0	0.3	0.4	4.6
Delay (s)	74.5	23.0	11.4	60.7	14.4	24.9	19.1	19.5	26.6
Level of Service	E	C	B	E	B	C	B	B	C
Approach Delay (s)	21.1			57.4		21.3			26.6
Approach LOS	C			E		C			C

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Volume (vph)	54	788	56	78	1625	124	155	22	73	110	17	20
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.85	1.00	1.00	1.00
Frt	1.00	0.99	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	0.95	1.00	1.00	0.96	1.00	0.96	1.00	0.96	1.00	0.96
Satd. Flow (prot)	1770	3504	1770	3539	1583	1785	1583	1785	1583	1785	1583	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.66	1.00	0.59	1.00	0.59	1.00	1.00
Satd. Flow (perm)	1770	3504	1770	3539	1583	1231	1583	1096	1583	1096	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	829	59	82	1711	131	163	23	77	116	18	21
RTOR Reduction (vph)	0	7	0	0	64	0	0	57	0	0	0	16
Lane Group Flow (vph)	57	881	0	82	1711	67	0	186	20	0	134	5
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2				6
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	2.8	31.6		3.4	32.2	32.2		16.1	16.1		16.1	16.1
Effective Green, g (s)	2.8	31.6		3.4	32.2	32.2		16.1	16.1		16.1	16.1
Actuated g/C Ratio	0.04	0.50		0.05	0.51	0.51		0.26	0.26		0.26	0.26
Clearance Time (s)	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
Lane Grp Cap (vph)	79	1755		95	1806	808		314	404		280	404
v/s Ratio Prot	0.03	0.25		c0.05	c0.48							
v/s Ratio Perm					0.04		c0.15	0.04		0.12		0.00
v/c Ratio	0.72	0.50		0.86	0.95	0.08		0.59	0.05		0.48	0.01
Uniform Delay, d1	29.8	10.5		29.6	14.6	7.9		20.6	17.7		19.9	17.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	27.5	0.2		50.8	11.1	0.0		8.0	0.2		5.8	0.1
Delay (s)	57.3	10.7		80.4	25.7	7.9		28.6	18.0		25.7	17.6
Level of Service	E	B		F	C	A		C	B		C	B
Approach Delay (s)		13.5			26.8			25.5			24.6	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

PM Peak Hour - Buildout with Mid-Town Interchange Conditions  
Town Center Specific Plan  
City of Scotts Valley

Level of Service Computation Report  
2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*  
Intersection #18 Mt Hermon Road/Washington Mutual Access  
\*\*\*\*\*

Average Delay (sec/veh): 5.9 Worst Case Level Of Service: F[ 72.7]  
\*\*\*\*\*

Street Name:	Washington Mutual Access	Mt Hermon Road
Approach:	North Bound South Bound	East Bound West Bound
Movement:	L - T - R L - T - R	L - T - R L - T - R

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Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Rights:	Include	Include	Include	Include
Lanes:	0 0 1 1 0 0	1 0 0 1 0	1 0 1 1 0	1 0 1 1 0

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Volume Module:

Base Vol:	13	0	184	0	0	0	0	890	45	294	1567	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	0	184	0	0	0	0	890	45	294	1567	0
Added Vol:	0	0	0	0	0	0	0	81	0	0	88	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	0	184	0	0	0	0	971	45	294	1655	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	14	0	194	0	0	0	0	1022	47	309	1742	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	0	194	0	0	0	0	1022	47	309	1742	0

---

Critical Gap Module:

Critical Gp:	6.8	6.5	6.9	7.5	6.5	6.9	xxxx	xxxx	xxxx	4.1	xxxx	xxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	xxxx	xxxx	xxxx	2.2	xxxx	xxxx

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Capacity Module:

Cnflct Vol:	2536	3407	535	2872	3431	871	xxxx	xxxx	xxxx	1069	xxxx	xxxx
Potent Cap.:	23	7	495	8	7	298	xxxx	xxxx	xxxx	659	xxxx	xxxx
Move Cap.:	15	4	495	3	4	298	xxxx	xxxx	xxxx	659	xxxx	xxxx
Volume/Cap:	0.94	0.00	0.39	0.00	0.00	0.00	xxxx	xxxx	xxxx	0.47	xxxx	xxxx

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Level of Service Module:

2Way95thQ:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	2.5	xxxx	xxxx
Control Del:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	15.2	xxxx	xxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*

Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT								
Shared Cap.:	xxxx	239	xxxx	xxxx	xxxx	0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	xxxx	7.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	xxxx	72.7	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:		72.7		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		F		*			*			*		*

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Note: Queue reported is the number of cars per lane.

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PM Peak Hour - Buildout with Mid-Town Interchange Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.212
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 44 0 108 0 0 0 0 31 97 107 25 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 44 0 108 0 0 0 0 31 97 107 25 1
Added Vol: 4 0 10 0 0 0 0 5 5 5 4 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 48 0 118 0 0 0 0 36 102 112 29 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 51 0 124 0 0 0 0 38 107 118 31 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 51 0 124 0 0 0 0 38 107 118 31 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 51 0 124 0 0 0 0 38 107 118 31 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.29 0.00 0.71 0.00 1.00 0.00 0.00 0.26 0.74 0.79 0.20 0.01
Final Sat.: 238 0 585 0 711 0 0 226 639 600 155 5
Capacity Analysis Module:
Vol/Sat: 0.21 xxxxx 0.21 xxxxx 0.00 xxxxx xxxxx 0.17 0.17 0.20 0.20 0.20
Crit Moves: \*\*\*\*
Delay/Veh: 8.2 0.0 8.2 0.0 0.0 0.0 0.0 7.8 7.8 8.6 8.6 8.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.2 0.0 8.2 0.0 0.0 0.0 0.0 7.8 7.8 8.6 8.6 8.6
LOS by Move: A \* A \* \* \* \* A A A A
ApproachDel: 8.2 xxxxxx 7.8 8.6
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 8.2 xxxxxx 7.8 8.6
LOS by Appr: A \* A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.2 0.2 0.2 0.2 0.2 0.2

PM Peak Hour - Buildout with Mid-Town Interchange Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 6.9 Worst Case Level Of Service: B[ 13.1]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1! 0 0 0 1 0 0 0
Volume Module:
Base Vol: 124 40 3 0 41 23 29 3 139 2 6 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 124 40 3 0 41 23 29 3 139 2 6 0
Added Vol: 15 4 0 0 3 2 4 0 10 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 139 44 3 0 44 25 33 3 149 2 6 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 146 46 3 0 46 26 35 3 157 2 6 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 146 46 3 0 46 26 35 3 157 2 6 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 7.1 6.5 6.2 7.1 6.5 xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 xxxxx
Capacity Module:
Cnflct Vol: 73 xxxxx xxxxx xxxxx xxxxx xxxxx 403 402 59 480 413 xxxxx
Potent Cap.: 1540 xxxxx xxxxx xxxxx xxxxx xxxxx 561 540 1012 499 532 xxxxx
Move Cap.: 1540 xxxxx xxxxx xxxxx xxxxx xxxxx 512 484 1012 387 477 xxxxx
Volume/Cap: 0.10 xxxxx xxxxx xxxxx xxxxx xxxxx 0.07 0.01 0.16 0.01 0.01 xxxxx
Level Of Service Module:
2Way95thQ: 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 7.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 849 xxxxx 451 xxxxx xxxxx
SharedQueue: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.9 xxxxx 0.1 xxxxx xxxxx
Shrd ConDel: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.5 xxxxx 13.1 xxxxx xxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 10.5 13.1
ApproachLOS: \* \* \* \* \* B B
Note: Queue reported is the number of cars per lane.

### HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	
Volume (vph)	464	960	90	156	997	421	117	102	142	454	92	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		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	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3370		1770	3438	1478	1681	1761	1478	3433	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3370		1770	3438	1478	1681	1761	1478	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	473	980	92	159	1017	430	119	104	145	463	94	432
RTOR Reduction (vph)	0	5	0	0	0	231	0	0	126	0	0	0
Lane Group Flow (vph)	473	1067	0	159	1017	199	107	116	19	463	94	432
Confli. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	20.7	58.7		16.9	54.9	54.9	16.9	16.9	16.9	21.0	21.0	130.0
Effective Green, g (s)	20.7	58.7		16.9	54.9	54.9	16.9	16.9	16.9	21.0	21.0	130.0
Actuated g/C Ratio	0.16	0.45		0.13	0.42	0.42	0.13	0.13	0.13	0.16	0.16	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	547	1522		230	1452	624	219	229	192	555	301	1550
v/s Ratio Prot	c0.14	c0.32		0.09	0.30		0.06	c0.07		c0.13	0.05	
v/s Ratio Perm						0.13			0.01			c0.28
v/c Ratio	0.86	0.70		0.69	0.70	0.32	0.49	0.51	0.10	0.83	0.31	0.28
Uniform Delay, d1	53.3	28.6		54.1	30.8	25.1	52.5	52.7	49.8	52.8	48.1	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
Incremental Delay, d2	13.4	2.7		8.6	2.8	1.3	1.7	1.8	0.2	10.4	0.6	0.4
Delay (s)	66.7	31.3		62.7	33.6	26.4	54.3	54.4	50.1	63.2	48.7	0.4
Level of Service	E	C		E	C	C	D	D	D	E	D	A
Approach Delay (s)		42.1			34.6			52.7			34.4	
Approach LOS		D			C			D			C	

#### Intersection Summary

HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

### HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	0	1111	384	186	759	0	371	0	301	10	111	382
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		0.95	1.00	1.00	0.95		0.97		1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	1.00	1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583	1855	1538	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	1.00	1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2450		1583	1855	1538	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1134	392	190	774	0	379	0	307	10	113	390
RTOR Reduction (vph)	0	0	280	0	0	0	0	0	202	0	0	70
Lane Group Flow (vph)	0	1134	112	190	774	0	379	0	105	0	123	320
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%	2%	2%	5%
Turn Type		Perm		Prot		custom	custom		Split		Perm	
Protected Phases		2		1	6				4		4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		25.1	25.1	11.0	40.1		15.0		30.0		20.8	20.8
Effective Green, g (s)		25.1	25.1	11.0	40.1		15.0		30.0		20.8	20.8
Actuated g/C Ratio		0.29	0.29	0.13	0.46		0.17		0.34		0.24	0.24
Clearance Time (s)		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
Lane Grp Cap (vph)		982	452	222	1614		418		540		439	364
v/s Ratio Prot		c0.33		c0.11	0.22						0.07	
v/s Ratio Perm			0.07				c0.15		0.07			c0.21
v/c Ratio		1.15	0.25	0.86	0.48		0.91		0.19		0.28	0.88
Uniform Delay, d1		31.4	24.1	37.7	16.6		35.8		20.4		27.4	32.3
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		81.4	0.3	26.1	0.2		22.8		0.2		0.4	20.6
Delay (s)		112.8	24.4	63.8	16.9		58.5		20.6		27.8	52.9
Level of Service		F	C	E	B		E		C		C	D
Approach Delay (s)		90.1			26.1		41.6				46.9	
Approach LOS		F			C		D				D	

#### Intersection Summary

HCM Average Control Delay	58.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕	↕	↕	↕
Volume (vph)	15	1115	432	57	132	10
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1174	455	60	139	11
RTOR Reduction (vph)	0	0	0	35	0	8
Lane Group Flow (vph)	16	1174	455	25	139	3
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.2	22.6	17.4	17.4	11.2	11.2
Effective Green, g (s)	1.2	22.6	17.4	17.4	11.2	11.2
Actuated g/C Ratio	0.03	0.54	0.42	0.42	0.27	0.27
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)	51	1859	753	659	474	424
v/s Ratio Prot	0.01	c0.34	0.25		c0.08	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.31	0.63	0.60	0.04	0.29	0.01
Uniform Delay, d1	19.9	6.7	9.5	7.2	12.2	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.7	1.4	0.0	1.6	0.0
Delay (s)	23.4	7.4	10.9	7.3	13.7	11.3
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.6	10.5		13.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	41.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↕	↔	↕	↕↕	↕		↕	↕	↕	↕	↕
Volume (vph)	5	1166	27	106	465	49	16	6	168	116	6	5
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3429		1770	3398			1796	1583		1778	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.80	1.00		0.72	1.00
Satd. Flow (perm)	1770	3429		1770	3398			1488	1583		1340	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1227	28	112	489	52	17	6	177	122	6	5
RTOR Reduction (vph)	0	3	0	0	12	0	0	0	140	0	0	4
Lane Group Flow (vph)	5	1252	0	112	529	0	0	23	37	0	128	1
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4	8		8
Actuated Green, G (s)	1.3	21.4		5.9	26.0			10.5	10.5		10.5	10.5
Effective Green, g (s)	1.3	21.4		5.9	26.0			10.5	10.5		10.5	10.5
Actuated g/C Ratio	0.03	0.43		0.12	0.52			0.21	0.21		0.21	0.21
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)	46	1474		210	1774			314	334		283	334
v/s Ratio Prot	0.00	c0.37		c0.06	0.16						c0.10	0.00
v/s Ratio Perm							0.02	0.02				0.00
v/c Ratio	0.11	0.85		0.53	0.30			0.07	0.11		0.45	0.00
Uniform Delay, d1	23.7	12.8		20.7	6.7			15.8	15.9		17.1	15.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	4.8		2.6	0.1			0.1	0.1		1.2	0.0
Delay (s)	24.7	17.5		23.2	6.8			15.8	16.0		18.3	15.5
Level of Service	C	B		C	A			B	B		B	B
Approach Delay (s)		17.6			9.6			16.0			18.2	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	140	1435	14	34	737	188	7	6	16	162	7	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
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1814	1583		1777	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.87	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		1626	1583		1351	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	1511	15	36	776	198	7	6	17	171	7	89
RTOR Reduction (vph)	0	0	0	0	0	80	0	0	14	0	0	74
Lane Group Flow (vph)	147	1526	0	36	776	118	0	13	3	0	178	15
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8		8		4	4
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.9	78.5		5.4	69.0	69.0	20.1	20.1		20.1	20.1	
Effective Green, g (s)	14.9	78.5		5.4	69.0	69.0	20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.13	0.68		0.05	0.59	0.59	0.17	0.17		0.17	0.17	
Clearance Time (s)	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	
Lane Grp Cap (vph)	227	2324		82	2045	942	282	274		234	274	
v/s Ratio Prot	c0.08	c0.44		0.02	0.23					c0.13	0.01	
v/s Ratio Perm					0.07		0.01	0.00			c0.13	0.01
v/c Ratio	0.65	0.66		0.44	0.38	0.13	0.05	0.01		0.76	0.06	
Uniform Delay, d1	48.1	10.9		53.8	12.3	10.3	40.0	39.7		45.7	40.0	
Progression Factor	1.00	1.00		1.09	0.63	0.25	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.2	1.5		3.5	0.5	0.3	0.1	0.0		13.6	0.1	
Delay (s)	54.3	12.4		61.9	8.3	2.8	40.0	39.7		59.2	40.1	
Level of Service	D	B		E	A	A	D	D		E	D	
Approach Delay (s)	16.1			9.1			39.9			52.8		
Approach LOS	B			A			D			D		

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	32	1592	2	46	986	109	4	1	17	67	2	3
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3438		1770	3438	1583		1791	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.86	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3438	1583		1603	1583		1358	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1676	2	48	1038	115	4	1	18	71	2	3
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	16	0	0	3
Lane Group Flow (vph)	34	1678	0	48	1038	84	0	5	2	0	73	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4		4		4	4
Permitted Phases					6	4		4	4			4
Actuated Green, G (s)	5.3	82.6		7.4	84.7	84.7	14.0	14.0		14.0	14.0	
Effective Green, g (s)	5.3	82.6		7.4	84.7	84.7	14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.05	0.71		0.06	0.73	0.73	0.12	0.12		0.12	0.12	
Clearance Time (s)	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	
Lane Grp Cap (vph)	81	2448		113	2510	1156	193	191		164	191	
v/s Ratio Prot	0.02	c0.49		c0.03	0.30							
v/s Ratio Perm					0.05		0.00	0.00			c0.05	0.00
v/c Ratio	0.42	0.69		0.42	0.41	0.07	0.03	0.01		0.45	0.00	
Uniform Delay, d1	53.9	9.4		52.3	6.0	4.5	45.0	44.9		47.4	44.9	
Progression Factor	1.28	0.85		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	1.2		2.6	0.5	0.1	0.1	0.0		1.9	0.0	
Delay (s)	71.7	9.2		54.8	6.6	4.6	45.0	44.9		49.3	44.9	
Level of Service	E	A		D	A	A	D	D		D	D	
Approach Delay (s)	10.5			8.3			45.0			49.1		
Approach LOS	B			A			D			D		

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	653	1151	40	107	627	51	74	148	168	200	108	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3414		1770	3438	1504	1681	1765	1504	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3414		1770	3438	1504	1681	1765	1504	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	666	1174	41	109	640	52	76	151	171	204	110	329
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	142	0	0	0
Lane Group Flow (vph)	666	1213	0	109	640	12	68	159	29	204	110	329
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	22.1	34.1		9.6	21.6	21.6	15.3	15.3	15.3	14.5	14.5	90.0
Effective Green, g (s)	22.1	34.1		9.6	21.6	21.6	15.3	15.3	15.3	14.5	14.5	90.0
Actuated g/C Ratio	0.25	0.38		0.11	0.24	0.24	0.17	0.17	0.17	0.16	0.16	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	843	1294		189	825	361	286	300	256	553	300	1550
v/s Ratio Prot	c0.19	c0.36		0.06	0.19		0.04	c0.09		c0.06	0.06	
v/s Ratio Perm						0.01			0.02			0.21
v/c Ratio	0.79	0.94		0.58	0.78	0.03	0.24	0.53	0.11	0.37	0.37	0.21
Uniform Delay, d1	31.8	26.9		38.3	31.9	26.2	32.3	34.1	31.6	33.7	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	5.1	13.9		4.2	7.1	0.2	0.4	1.8	0.2	0.4	0.8	0.3
Delay (s)	36.9	40.8		42.5	39.0	26.4	32.7	35.9	31.8	34.1	34.4	0.3
Level of Service	D	D		D	D	C	C	D	C	C	C	A
Approach Delay (s)		39.4			38.6			33.6				16.9
Approach LOS		D			D			C				B
<b>Intersection Summary</b>												
HCM Average Control Delay		34.7										C
HCM Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		90.0								16.5		
Intersection Capacity Utilization		81.1%										D
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	125	1198	32	31	839	160	13	3	36	140	2	123
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	0.95		1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.96	1.00	0.95	0.95	0.95	1.00
Satd. Flow (prot)	1770	3427		1770	3438	1583	1790	1583	1681	1688	1583	
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.82	1.00	0.75	0.72	1.00	
Satd. Flow (perm)	1770	3427		1770	3438	1583	1526	1583	1322	1275	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	128	1222	33	32	856	163	13	3	37	143	2	126
RTOR Reduction (vph)	0	1	0	0	0	59	0	0	32	0	0	108
Lane Group Flow (vph)	128	1254	0	32	856	104	0	16	5	73	72	18
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8		8	4	4	
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	13.7	82.2		5.2	73.7	73.7	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	13.7	82.2		5.2	73.7	73.7	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.12	0.71		0.04	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
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)	209	2428		79	2184	1006	218	227	189	182	227	
v/s Ratio Prot	c0.07	c0.37		0.02	0.25		0.01	0.00	0.06	c0.06	0.01	
v/s Ratio Perm						0.07						
v/c Ratio	0.61	0.52		0.41	0.39	0.10	0.07	0.02	0.39	0.40	0.08	
Uniform Delay, d1	48.6	7.8		53.9	10.3	8.3	43.0	42.7	45.1	45.1	43.1	
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	5.2	0.8		3.4	0.5	0.2	0.1	0.0	1.3	1.4	0.2	
Delay (s)	53.9	8.6		57.3	10.8	8.5	43.2	42.8	46.4	46.6	43.2	
Level of Service	D	A		E	B	A	D	D	D	D	D	
Approach Delay (s)		12.7			11.9			42.9			45.0	
Approach LOS		B			B			D			D	
<b>Intersection Summary</b>												
HCM Average Control Delay		16.2										B
HCM Volume to Capacity ratio		0.50										
Actuated Cycle Length (s)		116.0							8.0			
Intersection Capacity Utilization		60.8%										B
Analysis Period (min)		15										

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑↑
Volume (vph)	0	1239	107	121	666	0	265	0	189	6	36	135
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1850	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.73		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2634		1583		1850	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1264	109	123	680	0	270	0	193	6	37	138
RTOR Reduction (vph)	0	0	61	0	0	0	0	0	166	0	0	122
Lane Group Flow (vph)	0	1264	48	123	680	0	270	0	27	0	43	16
Heavy Vehicles (%)		2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type			Perm	Prot		custom		custom		Split		Perm
Protected Phases		2		1	6					4		4
Permitted Phases			2				8		8			4
Actuated Green, G (s)		38.9	38.9	11.1	54.0		12.5		12.5		10.4	10.4
Effective Green, g (s)		38.9	38.9	11.1	54.0		12.5		12.5		10.4	10.4
Actuated g/C Ratio		0.44	0.44	0.12	0.61		0.14		0.14		0.12	0.12
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)		1504	693	221	2150		370		223		216	180
v/s Ratio Prot		c0.37		c0.07	0.19						c0.02	
v/s Ratio Perm			0.03				c0.10		0.02			0.01
v/c Ratio		0.84	0.07	0.56	0.32		0.73		0.12		0.20	0.09
Uniform Delay, d1		22.2	14.5	36.6	8.5		36.6		33.4		35.5	35.0
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		4.4	0.0	3.0	0.1		7.1		0.2		0.5	0.2
Delay (s)		26.7	14.5	39.6	8.6		43.6		33.6		35.9	35.2
Level of Service		C	B	D	A		D		C		D	D
Approach Delay (s)		25.7			13.3			39.5			35.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑↑	↑
Volume (vph)	247	158	83	732	319	218
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1514
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1514
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	260	166	87	771	336	229
RTOR Reduction (vph)	0	133	0	0	0	88
Lane Group Flow (vph)	260	33	87	771	336	141
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot			Perm
Protected Phases		4	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	23.0	23.0	9.7	85.0	71.3	71.3
Effective Green, g (s)	23.0	23.0	9.7	85.0	71.3	71.3
Actuated g/C Ratio	0.20	0.20	0.08	0.73	0.61	0.61
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)	351	297	148	2593	3126	931
v/s Ratio Prot	c0.15		c0.05	c0.22	0.07	
v/s Ratio Perm		0.02				0.09
v/c Ratio	0.74	0.11	0.59	0.30	0.11	0.15
Uniform Delay, d1	43.7	38.1	51.2	5.3	9.2	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	0.2	5.9	0.3	0.1	0.3
Delay (s)	51.9	38.3	57.1	5.6	9.3	9.8
Level of Service	D	D	E	A	A	A
Approach Delay (s)	46.6			10.8	9.5	
Approach LOS	D			B	A	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	57	0	0	7	0	58	27	1369	8	0	914	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		
Lane Util. Factor	1.00			1.00		1.00	0.95			0.95		
Frt	1.00			0.88		1.00	1.00			0.99		
Flt Protected	0.95			0.99		0.95	1.00			1.00		
Satd. Flow (prot)	1770			1629		1770	3536			3494		
Flt Permitted	1.00			0.95		0.95	1.00			1.00		
Satd. Flow (perm)	1863			1562		1770	3536			3494		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	0	0	7	0	61	28	1441	8	0	962	89
RTOR Reduction (vph)	0	0	0	0	56	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	60	0	0	12	0	28	1449	0	0	1043	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	3.5			3.5		1.2	35.7			30.5		
Effective Green, g (s)	3.5			3.5		1.2	35.7			30.5		
Actuated g/C Ratio	0.07			0.07		0.03	0.76			0.65		
Clearance Time (s)	4.0			4.0		4.0	4.0			4.0		
Vehicle Extension (s)	3.0			3.0		3.0	3.0			3.0		
Lane Grp Cap (vph)	138			116		45	2674			2258		
v/s Ratio Prot						0.02	c0.41			0.30		
v/s Ratio Perm	c0.03			0.01								
v/c Ratio	0.43			0.10		0.62	0.54			0.46		
Uniform Delay, d1	20.9			20.4		22.8	2.4			4.2		
Progression Factor	1.00			1.00		1.00	1.00			1.00		
Incremental Delay, d2	2.2			0.4		23.8	0.2			0.7		
Delay (s)	23.1			20.8		46.6	2.6			4.9		
Level of Service	C			C		D	A			A		
Approach Delay (s)	23.1			20.8		3.4				4.9		
Approach LOS	C			C		A				A		
<b>Intersection Summary</b>												
HCM Average Control Delay		4.9				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.53										
Actuated Cycle Length (s)		47.2				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		55.1%				ICU Level of Service		B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	38	2	23	515	50	228	19	1144	513	280	858	23
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt	1.00	0.85	1.00	0.88		1.00	0.95	1.00	0.95	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00		0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1778	1583	1770	1634		1770	3375	1770	3525	1770	3525	1770
Flt Permitted	0.51	1.00	0.73	1.00		0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	957	1583	1359	1634		1770	3375	1770	3525	1770	3525	1770
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	2	24	542	53	240	20	1204	540	295	903	24
RTOR Reduction (vph)	0	0	19	0	190	0	0	97	0	0	3	0
Lane Group Flow (vph)	0	42	5	542	103	0	20	1647	0	295	924	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	11.0	11.0	11.0	11.0		1.6	22.2			8.0	28.6	
Effective Green, g (s)	11.0	11.0	11.0	11.0		1.6	22.2			8.0	28.6	
Actuated g/C Ratio	0.21	0.21	0.21	0.21		0.03	0.42			0.15	0.54	
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)	198	327	281	338		53	1408			266	1895	
v/s Ratio Prot					0.06	0.01	c0.49			c0.17	0.26	
v/s Ratio Perm	0.04	0.00	c0.40									
v/c Ratio	0.21	0.02	1.93	0.30		0.38	1.17			1.11	0.49	
Uniform Delay, d1	17.5	16.8	21.1	17.9		25.3	15.5			22.6	7.7	
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.5	0.0	430.9	0.5		4.5	84.4			87.6	0.9	
Delay (s)	18.0	16.8	452.0	18.4		29.8	99.9			110.2	8.6	
Level of Service	B	B	F	B		C	F			F	A	
Approach Delay (s)	17.6			299.8		99.1				33.1		
Approach LOS	B			F		F				C		
<b>Intersection Summary</b>												
HCM Average Control Delay		120.1				HCM Level of Service		F				
HCM Volume to Capacity ratio		1.36										
Actuated Cycle Length (s)		53.2				Sum of lost time (s)		12.0				
Intersection Capacity Utilization		108.7%				ICU Level of Service		G				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔	↔	↔	↔	↔
Volume (vph)	2	0	3	33	0	0	4	1164	116	10	981	3
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	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frt	0.92		1.00		1.00		0.99		1.00		1.00	
Flt Protected	0.98		0.95		0.95		1.00		0.95		1.00	
Satd. Flow (prot)	1678		1770		1770		3491		1770		3538	
Flt Permitted	0.98		1.00		0.95		1.00		0.95		1.00	
Satd. Flow (perm)	1678		1863		1770		3491		1770		3538	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	0	3	35	0	0	4	1225	122	11	1033	3
RTOR Reduction (vph)	0	3	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	2	0	35	0	0	4	1339	0	11	1036	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		1.6		1.6		1.1	26.1		1.1	26.1		
Effective Green, g (s)		1.6		1.6		1.1	26.1		1.1	26.1		
Actuated g/C Ratio		0.04		0.04		0.03	0.64		0.03	0.64		
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)	66		73		48	2233	48	2263	48	2263		
v/s Ratio Prot					0.00	c0.38		c0.01	0.29			
v/s Ratio Perm	0.00		c0.02									
v/c Ratio	0.03		0.48		0.08	0.60		0.23	0.46			
Uniform Delay, d1	18.9		19.2		19.4	4.3		19.4	3.7			
Progression Factor	1.00		1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.2		4.9		0.7	0.4		2.4	0.1			
Delay (s)	19.1		24.1		20.1	4.7		21.9	3.9			
Level of Service	B		C		C	A		C	A			
Approach Delay (s)	19.1			24.1			4.8			4.1		
Approach LOS	B			C			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay		4.8				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		40.8				Sum of lost time (s)		12.0				
Intersection Capacity Utilization		46.5%				ICU Level of Service		A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔		↔	↔	↔	↔	↔	↔	↔
Volume (vph)	17	0	30	94	0	0	17	1083	134	46	786	10
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	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frt	0.91		1.00		1.00		0.98		1.00		1.00	
Flt Protected	0.98		0.95		0.95		1.00		0.95		1.00	
Satd. Flow (prot)	1672		1770		1770		3481		1770		3532	
Flt Permitted	0.98		1.00		0.95		1.00		0.95		1.00	
Satd. Flow (perm)	1672		1863		1770		3481		1770		3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	0	32	99	0	0	18	1140	141	48	827	11
RTOR Reduction (vph)	0	29	0	0	0	0	0	14	0	0	1	0
Lane Group Flow (vph)	0	21	0	99	0	0	18	1267	0	48	837	0
Turn Type	Perm		custom		custom		Prot		Prot		Prot	
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		3.3		3.3		1.2	22.5		1.2	22.5	2.4	23.7
Effective Green, g (s)		3.3		3.3		1.2	22.5		1.2	22.5	2.4	23.7
Actuated g/C Ratio		0.08		0.08		0.03	0.56		0.03	0.56	0.06	0.59
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)	137		153		53	1948	53	1948	106	2082		
v/s Ratio Prot					0.01	c0.36		c0.01	0.29		0.03	c0.24
v/s Ratio Perm	0.01		c0.05									
v/c Ratio	0.15		0.65		0.34	0.65		0.45	0.40			
Uniform Delay, d1	17.1		17.9		19.1	6.1		18.3	4.4			
Progression Factor	1.00		1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.5		9.1		3.8	0.8		3.1	0.1			
Delay (s)	17.7		26.9		22.9	6.9		21.3	4.6			
Level of Service	B		C		C	A		C	A			
Approach Delay (s)	17.7			26.9			7.1			5.5		
Approach LOS	B			C			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay		7.6				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		40.2				Sum of lost time (s)		12.0				
Intersection Capacity Utilization		56.8%				ICU Level of Service		B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Volume (vph)	80	16	828	90	239	764
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frbp, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3469		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3469		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	17	872	95	252	804
RTOR Reduction (vph)	0	11	16	0	0	0
Lane Group Flow (vph)	84	6	951	0	252	804
Confl. Peds. (#/hr)				25		
Turn Type		pm+ov		Prot		
Protected Phases	6	7	8	7	4	
Permitted Phases		6				
Actuated Green, G (s)	5.0	14.3	16.0	9.3	29.3	
Effective Green, g (s)	5.0	14.3	16.0	9.3	29.3	
Actuated g/C Ratio	0.12	0.34	0.38	0.22	0.69	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	209	685	1312	389	2451	
v/s Ratio Prot	c0.05	0.00	c0.27	c0.14	0.23	
v/s Ratio Perm		0.00				
v/c Ratio	0.40	0.01	0.72	0.65	0.33	
Uniform Delay, d1	17.3	9.3	11.3	15.0	2.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.0	2.0	3.7	0.1	
Delay (s)	18.5	9.3	13.3	18.7	2.7	
Level of Service	B	A	B	B	A	
Approach Delay (s)	17.0		13.3		6.5	
Approach LOS	B		B		A	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

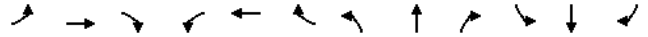
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Volume (vph)	4	10	4	365	39	481	20	436	299	271	579	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frbp, ped/bikes		1.00	0.77	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	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	1.00
Fit Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1838	1215	1681	1701	1583	1770	3539	1478	1770	3521	
Fit Permitted		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1838	1215	1681	1701	1583	1770	3539	1478	1770	3521	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	11	4	384	41	506	21	459	315	285	609	16
RTOR Reduction (vph)	0	0	4	0	0	285	0	0	232	0	2	0
Lane Group Flow (vph)	0	15	0	211	214	221	21	459	83	285	623	0
Confl. Peds. (#/hr)				25					25			25
Turn Type		Split	Perm	Split		pm+ov	Prot		Perm	Prot		
Protected Phases		7	7	8	8	1	5	2		1	6	
Permitted Phases			7			8		2				
Actuated Green, G (s)		2.0	2.0	12.2	12.2	26.2	1.6	15.8	15.8	14.0	28.2	
Effective Green, g (s)		2.0	2.0	12.2	12.2	26.2	1.6	15.8	15.8	14.0	28.2	
Actuated g/C Ratio		0.03	0.03	0.20	0.20	0.44	0.03	0.26	0.26	0.23	0.47	
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	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		61	41	342	346	797	47	932	389	413	1655	
v/s Ratio Prot		c0.01		0.13	c0.13	0.06	0.01	c0.13		c0.16	0.18	
v/s Ratio Perm			0.00			0.07			0.06			
v/c Ratio		0.25	0.00	0.62	0.62	0.28	0.45	0.49	0.21	0.69	0.38	
Uniform Delay, d1		28.3	28.0	21.8	21.8	10.8	28.8	18.7	17.2	21.0	10.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.23	0.92	
Incremental Delay, d2		2.1	0.0	3.3	3.3	0.2	6.6	1.9	1.2	4.6	0.6	
Delay (s)		30.4	28.1	25.1	25.1	11.0	35.4	20.6	18.5	30.5	10.0	
Level of Service		C	C	C	C	B	D	C	B	C	B	
Approach Delay (s)		29.9			17.4			20.1			16.4	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕		↕	↕	↕	↕	↕	↕
Volume (vph)	19	192	321	156	17	18	454	299	73	101	321	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0			4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	0.95	0.95			0.97	0.95	1.00	1.00		0.95
Frbp, ped/bikes	1.00	1.00	1.00	0.99			1.00	1.00	0.94	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		1.00
Frt	1.00	0.85	1.00	0.97			1.00	1.00	0.85	1.00		0.99
Fit Protected	1.00	1.00	0.95	0.97			0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	1854	1583	1681	1646			3433	3539	1488	1770		3485
Fit Permitted	1.00	1.00	0.95	0.97			0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	1854	1583	1681	1646			3433	3539	1488	1770		3485
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		0.95
Adj. Flow (vph)	20	202	338	164	18	19	478	315	77	106	338	25
RTOR Reduction (vph)	0	0	266	0	15	0	0	0	53	0	8	0
Lane Group Flow (vph)	0	222	72	102	84	0	478	315	24	106	355	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot			
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)		10.7	10.7	8.3	8.3		10.8	18.4	18.4	6.6	14.2	
Effective Green, g (s)		10.7	12.7	8.3	8.3		10.8	18.4	18.4	6.6	14.2	
Actuated g/C Ratio		0.18	0.21	0.14	0.14		0.18	0.31	0.31	0.11	0.24	
Clearance Time (s)		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		5.0	3.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		331	335	233	228		618	1085	456	195	825	
v/s Ratio Prot		c0.12		c0.06	0.05		c0.14	0.09		c0.06	c0.10	
v/s Ratio Perm			0.05					0.02				
v/c Ratio		0.67	0.21	0.44	0.37		0.77	0.29	0.05	0.54	0.43	
Uniform Delay, d1		23.0	19.5	23.7	23.5		23.4	15.8	14.7	25.3	19.5	
Progression Factor		1.00	1.00	1.00	1.00		0.84	0.76	0.68	1.00	1.00	
Incremental Delay, d2		5.3	0.3	1.3	1.0		5.9	0.6	0.2	3.1	1.6	
Delay (s)		28.3	19.8	25.0	24.5		25.6	12.5	10.2	28.4	21.1	
Level of Service		C	B	C	C		C	B	B	C	C	
Approach Delay (s)		23.2			24.8			19.5			22.7	
Approach LOS		C			C			B			C	

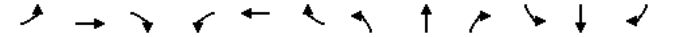
**Intersection Summary**

HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕		↕	↕	↕	↕	↕	↕
Volume (vph)	161	84	235	481	94	22	168	218	185	14	93	22
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			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.92			1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85			0.98
Fit Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00			0.99
Satd. Flow (prot)	1770	1863	1583	1770	1810		1770	1863	1449			1810
Fit Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00			0.99
Satd. Flow (perm)	1770	1863	1583	1770	1810		1770	1863	1449			1810
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	169	88	247	506	99	23	177	229	195	15	98	23
RTOR Reduction (vph)	0	0	170	0	11	0	0	0	158	0	11	0
Lane Group Flow (vph)	169	88	77	506	111	0	177	229	37	0	125	0
Confl. Peds. (#/hr)									25			
Turn Type		Prot		pm+ov		Prot		Split		Perm		Split
Protected Phases		5	2	3		1	6		3	3		4
Permitted Phases				2								3
Actuated Green, G (s)		6.5	7.7	19.7	20.2	21.4		12.0	12.0	12.0		7.6
Effective Green, g (s)		6.5	7.7	19.7	20.2	21.4		12.0	12.0	12.0		7.6
Actuated g/C Ratio		0.10	0.12	0.31	0.32	0.34		0.19	0.19	0.19		0.12
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.5	3.0	3.0	3.5		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		181	226	591	563	610		334	352	274		217
v/s Ratio Prot		0.10	c0.05	0.02	c0.29	0.06		0.10	c0.12			c0.07
v/s Ratio Perm				0.02								0.03
v/c Ratio		0.93	0.39	0.13	0.90	0.18		0.53	0.65	0.13		0.58
Uniform Delay, d1		28.3	25.7	15.7	20.7	14.9		23.2	23.8	21.4		26.4
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2		47.8	1.3	0.1	17.0	0.2		1.5	4.3	0.2		3.7
Delay (s)		76.1	27.0	15.8	37.7	15.0		24.7	28.1	21.7		30.1
Level of Service		E	C	B	D	B		C	C	C		C
Approach Delay (s)			38.0			33.3			25.0			30.1
Approach LOS			D			C			C			C

**Intersection Summary**

HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
 17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	39	1443	61	56	734	72	54	9	69	75	7	5
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Flt	1.00	0.99	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	0.95	1.00	1.00	0.96	1.00	0.96	1.00	0.96	1.00	0.96
Satd. Flow (prot)	1770	3518	1770	3539	1583	1786	1583	1781	1583	1781	1583	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.75	1.00	0.72	1.00	0.72	1.00	1.00
Satd. Flow (perm)	1770	3518	1770	3539	1583	1391	1583	1349	1583	1349	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	1519	64	59	773	76	57	9	73	79	7	5
RTOR Reduction (vph)	0	4	0	0	33	0	0	55	0	0	4	4
Lane Group Flow (vph)	41	1579	0	59	773	43	0	66	18	0	86	1
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	3.8	45.2		5.2	46.6	46.6		20.9	20.9		20.9	20.9
Effective Green, g (s)	3.8	45.2		5.2	46.6	46.6		20.9	20.9		20.9	20.9
Actuated g/C Ratio	0.05	0.54		0.06	0.56	0.56		0.25	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
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)	81	1909		110	1980	886		349	397		338	397
v/s Ratio Prot	0.02	c0.45		c0.03	0.22							
v/s Ratio Perm						0.03		0.05	0.01		c0.06	0.00
v/c Ratio	0.51	0.83		0.54	0.39	0.05		0.19	0.05		0.25	0.00
Uniform Delay, d1	38.8	15.8		37.9	10.3	8.3		24.5	23.6		25.0	23.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.9	3.1		5.0	0.1	0.0		1.2	0.2		1.8	0.0
Delay (s)	43.7	18.9		42.8	10.5	8.3		25.7	23.9		26.8	23.4
Level of Service	D	B		D	B	A		C	C		C	C
Approach Delay (s)	19.5			12.4			24.8			26.6		
Approach LOS	B			B			C			C		

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

AM Peak Hour- Buildout w/ Mid-Town Interchange plus Project Conditions  
 Town Center Specific Plan  
 City of Scotts Valley

Level of Service Computation Report  
 2000 HCM Unsignalized Method (Future Volume Alternative)  
 \*\*\*\*\*  
 Intersection #18 Mt Hermon Road/Washington Mutual Access  
 \*\*\*\*\*  
 Average Delay (sec/veh): 38.7 Worst Case Level Of Service: F[1742.5]  
 \*\*\*\*\*  
 Street Name: Washington Mutual Access Mt Hermon Road  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include  
 Lanes: 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  
 Volume Module:  
 Base Vol: 2 0 111 0 0 0 0 1475 22 162 683 0  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 2 0 111 0 0 0 0 1475 22 162 683 0  
 Added Vol: 0 0 0 46 0 3 6 106 0 0 111 35  
 PasserByVol: 0 0 0 6 0 3 6 -6 0 0 -3 3  
 Initial Fut: 2 0 111 52 0 6 12 1575 22 162 791 38  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 2 0 117 55 0 6 13 1658 23 171 833 40  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 FinalVolume: 2 0 117 55 0 6 13 1658 23 171 833 40  
 Critical Gap Module:  
 Critical Gp: 7.5 6.5 6.9 7.5 6.5 6.9 4.1 xxxx xxxxx 4.1 xxxx xxxxx  
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx  
 Capacity Module:  
 Cnflct Vol: 2452 2908 841 2048 2900 436 873 xxxx xxxxx 1681 xxxx xxxxx  
 Potent Cap.: 16 16 312 33 16 574 782 xxxx xxxxx 386 xxxx xxxxx  
 Move Cap.: 10 9 312 13 9 574 782 xxxx xxxxx 386 xxxx xxxxx  
 Volume/Cap: 0.20 0.00 0.37 4.06 0.00 0.01 0.02 xxxx xxxx 0.44 xxxx xxxx  
 Level Of Service Module:  
 2Way95thQ: xxxx xxxx xxxxx 7.8 xxxx xxxxx 0.0 xxxx xxxxx 2.2 xxxx xxxxx  
 Control Del:xxxxx xxxx xxxxx 1942 xxxx xxxxx 9.7 xxxx xxxxx 21.5 xxxx xxxxx  
 LOS by Move: \* \* \* F \* \* A \* \* C \* \*  
 Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT  
 Shared Cap.: xxxx 318 xxxxx xxxx xxxxx 574 xxxx xxxxx xxxxx xxxx xxxxx  
 SharedQueue:xxxxx 1.7 xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shrd ConDel:xxxxx 22.9 xxxxx xxxxx xxxxx 11.3 xxxxx xxxxx xxxxx xxxxx xxxxx  
 Shared LOS: \* C \* \* \* B \* \* \* \* \*  
 ApproachDel: 22.9 1742.5 xxxxxx xxxxxx  
 ApproachLOS: C F \* \* \*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

AM Peak Hour- Buildout w/ Mid-Town Interchange plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.183
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 0 Level Of Service: A

Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 57 1 92 0 1 0 0 7 10 99 21 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 57 1 92 0 1 0 0 7 10 99 21 1
Added Vol: 1 0 2 0 0 0 0 2 1 10 2 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 58 1 94 0 1 0 0 9 11 109 23 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 61 1 99 0 1 0 0 9 12 115 24 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 61 1 99 0 1 0 0 9 12 115 24 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 61 1 99 0 1 0 0 9 12 115 24 1

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.38 0.01 0.61 0.00 1.00 0.00 0.00 0.45 0.55 0.82 0.17 0.01
Final Sat.: 334 6 541 0 783 0 0 383 468 650 137 6

Capacity Analysis Module:
Vol/Sat: 0.18 0.18 0.18 xxxx 0.00 xxxx xxxx 0.02 0.02 0.18 0.18 0.18
Crit Moves: \*\*\*\*
Delay/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.8 7.8 7.8 0.0 7.4 0.0 0.0 7.1 7.1 8.3 8.3 8.3
LOS by Move: A A A \* A \* \* A A A A
ApproachDel: 7.8 7.4 7.1 8.3
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 7.8 7.4 7.1 8.3
LOS by Appr: A A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.2 0.2

AM Peak Hour- Buildout w/ Mid-Town Interchange plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road

Average Delay (sec/veh): 6.0 Worst Case Level Of Service: B[ 12.3]

Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0

Volume Module:
Base Vol: 105 27 2 0 49 14 14 0 78 10 1 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 105 27 2 0 49 14 14 0 78 10 1 0
Added Vol: 4 1 0 0 4 3 1 0 13 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 109 28 2 0 53 17 15 0 91 10 1 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 115 29 2 0 56 18 16 0 96 11 1 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 115 29 2 0 56 18 16 0 96 11 1 0

Capacity Module:
Cnflct Vol: 74 xxxx xxxx xxxx xxxx 325 326 65 373 334 xxxx
Potent Cap.: 1539 xxxx xxxx xxxx xxxx 632 596 1005 588 590 xxxx
Move Cap.: 1539 xxxx xxxx xxxx xxxx 592 548 1005 500 543 xxxx
Volume/Cap: 0.07 xxxx xxxx xxxx xxxx 0.03 0.00 0.10 0.02 0.00 xxxx

Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 7.5 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx 915 xxxx 503 xxxx xxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.4 xxxxx 0.1 xxxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 9.5 xxxxx 12.3 xxxxx xxxxx
Shared LOS: \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 9.5 12.3
ApproachLOS: \* \* A B

HCM Signalized Intersection Capacity Analysis  
1: Mt. Hermon Road & Lockhart Gulch Road

8/4/2008

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	12	586	1242	145	68	9
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	1.00	0.95	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)	1770	3438	1810	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3438	1810	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	617	1307	153	72	9
RTOR Reduction (vph)	0	0	0	44	0	8
Lane Group Flow (vph)	13	617	1307	109	72	1
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Turn Type	Prot			Perm	Perm	
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.3	64.5	59.2	59.2	11.0	11.0
Effective Green, g (s)	1.3	64.5	59.2	59.2	11.0	11.0
Actuated g/C Ratio	0.02	0.77	0.71	0.71	0.13	0.13
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)	28	2656	1283	1122	233	209
v/s Ratio Prot	0.01	c0.18	c0.72		c0.04	
v/s Ratio Perm				0.07		0.00
v/c Ratio	0.46	0.23	1.02	0.10	0.31	0.01
Uniform Delay, d1	40.8	2.6	12.1	3.8	32.8	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.0	29.9	0.0	3.4	0.0
Delay (s)	52.4	2.7	42.1	3.8	36.2	31.5
Level of Service	D	A	D	A	D	C
Approach Delay (s)		3.7	38.1		35.7	
Approach LOS		A	D		D	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
2: Mt. Hermon Road & Lockwood Lane-Skypark Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	19	628	19	229	1362	135	38	6	151	101	13	15
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
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3426		1770	3400			1785	1583		1784	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.72	1.00		0.72	1.00
Satd. Flow (perm)	1770	3426		1770	3400			1345	1583		1337	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	661	20	241	1434	142	40	6	159	106	14	16
RTOR Reduction (vph)	0	4	0	0	11	0	0	0	128	0	0	13
Lane Group Flow (vph)	20	677	0	241	1565	0	0	46	31	0	120	3
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2		1	6			4	4		8	8
Permitted Phases							4		4		8	8
Actuated Green, G (s)	1.3	20.5		11.3	30.5			10.5	10.5		10.5	10.5
Effective Green, g (s)	1.3	20.5		11.3	30.5			10.5	10.5		10.5	10.5
Actuated g/C Ratio	0.02	0.38		0.21	0.56			0.19	0.19		0.19	0.19
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)	42	1293		368	1910			260	306		259	306
v/s Ratio Prot	0.01	0.20		c0.14	c0.46						c0.09	0.00
v/s Ratio Perm							0.03	0.02				
v/c Ratio	0.48	0.52		0.65	0.82			0.18	0.10		0.46	0.01
Uniform Delay, d1	26.2	13.1		19.7	9.7			18.3	18.0		19.4	17.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	8.3	0.4		4.2	2.9			0.3	0.1		1.3	0.0
Delay (s)	34.4	13.5		23.9	12.5			18.6	18.2		20.7	17.7
Level of Service	C	B		C	B			B	B		C	B
Approach Delay (s)		14.1			14.0			18.3			20.4	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Mt. Hermon Road & Kings Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	167	1053	4	125	1650	281	39	23	84	334	24	315
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3437		1770	3438	1583		1806	1583		1780	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.55	1.00		0.69	1.00
Satd. Flow (perm)	1770	3437		1770	3438	1583		1027	1583		1291	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	1108	4	132	1737	296	41	24	88	352	25	332
RTOR Reduction (vph)	0	0	0	0	0	108	0	0	61	0	0	143
Lane Group Flow (vph)	176	1112	0	132	1737	188	0	65	27	0	377	189
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases					6	8		8	4			4
Actuated Green, G (s)	14.2	57.4		11.4	54.6	54.6	35.2	35.2		35.2	35.2	
Effective Green, g (s)	14.2	57.4		11.4	54.6	54.6	35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.12	0.49		0.10	0.47	0.47	0.30	0.30		0.30	0.30	
Clearance Time (s)	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	
Lane Grp Cap (vph)	217	1701		174	1618	745	312	480		392	480	
v/s Ratio Prot	c0.10	c0.32		0.07	c0.51					c0.29	0.12	
v/s Ratio Perm						0.12	0.06	0.02				0.12
v/c Ratio	0.81	0.65		0.76	1.07	0.25	0.21	0.06		0.96	0.39	
Uniform Delay, d1	49.6	21.9		51.0	30.7	18.4	30.0	28.6		39.7	31.9	
Progression Factor	1.00	1.00		1.20	0.73	0.89	1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.1	2.0		8.2	39.2	0.4	0.3	0.0		35.4	0.5	
Delay (s)	69.6	23.9		69.4	61.6	16.8	30.4	28.7		75.1	32.5	
Level of Service	E	C		E	E	B	C	C		E	C	
Approach Delay (s)	30.1			56.0			29.4			55.1		
Approach LOS	C			E			C			E		

Intersection Summary			
HCM Average Control Delay	47.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
4: Mt. Hermon Road & Spring Lakes Dr

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	50	1400	14	41	1965	294	8	0	13	173	4	55
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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3434		1770	3438	1583		1770	1583		1776	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.43	1.00		0.73	1.00
Satd. Flow (perm)	1770	3434		1770	3438	1583		801	1583		1351	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1474	15	43	2068	309	8	0	14	182	4	58
RTOR Reduction (vph)	0	0	0	0	0	75	0	0	11	0	0	47
Lane Group Flow (vph)	53	1489	0	43	2068	234	0	8	3	0	186	11
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		4	4		4	4	
Permitted Phases					6	4		4	4			4
Actuated Green, G (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Effective Green, g (s)	7.7	75.7		7.2	75.2	75.2	21.1	21.1		21.1	21.1	
Actuated g/C Ratio	0.07	0.65		0.06	0.65	0.65	0.18	0.18		0.18	0.18	
Clearance Time (s)	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	
Lane Grp Cap (vph)	117	2241		110	2229	1026	146	288		246	288	
v/s Ratio Prot	c0.03	0.43		0.02	c0.60							
v/s Ratio Perm						0.15	0.01	0.00		c0.14	0.01	
v/c Ratio	0.45	0.66		0.39	0.93	0.23	0.05	0.01		0.76	0.04	
Uniform Delay, d1	52.1	12.4		52.3	18.0	8.4	39.2	38.9		45.0	39.1	
Progression Factor	1.31	0.71		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.1		2.3	8.3	0.5	0.2	0.0		12.4	0.1	
Delay (s)	70.3	9.9		54.6	26.3	8.9	39.4	38.9		57.4	39.1	
Level of Service	E	A		D	C	A	D	D		E	D	
Approach Delay (s)	12.0			24.6			39.1			53.1		
Approach LOS	B			C			D			D		

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	649	1037	110	241	1492	238	161	109	143	267	119	703
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3362		1770	3438	1478	1681	1751	1478	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3362		1770	3438	1478	1681	1751	1478	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	662	1058	112	246	1522	243	164	111	146	272	121	717
RTOR Reduction (vph)	0	6	0	0	0	92	0	0	126	0	0	0
Lane Group Flow (vph)	662	1164	0	246	1522	151	134	141	20	272	121	717
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	29.8	56.8		21.5	48.5	48.5	17.5	17.5	17.5	17.7	17.7	130.0
Effective Green, g (s)	29.8	56.8		21.5	48.5	48.5	17.5	17.5	17.5	17.7	17.7	130.0
Actuated g/C Ratio	0.23	0.44		0.17	0.37	0.37	0.13	0.13	0.13	0.14	0.14	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	787	1469		293	1283	551	226	236	199	467	254	1550
v/s Ratio Prot	c0.19	0.35		0.14	c0.44		0.08	c0.08		c0.08	0.06	
v/s Ratio Perm						0.10			0.01			0.46
v/c Ratio	0.84	0.79		0.84	1.19	0.27	0.59	0.60	0.10	0.58	0.48	0.46
Uniform Delay, d1	47.8	31.5		52.6	40.8	28.5	52.9	52.9	49.3	52.7	51.9	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
Incremental Delay, d2	8.1	4.5		18.6	92.0	1.2	4.1	4.0	0.2	1.9	1.4	1.0
Delay (s)	55.9	36.0		71.2	132.7	29.7	57.0	57.0	49.6	54.5	53.3	1.0
Level of Service	E	D		E	F	C	E	E	D	D	D	A
Approach Delay (s)		43.2			112.7			54.4				19.8
Approach LOS		D			F			D				B

Intersection Summary			
HCM Average Control Delay	65.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis  
 6: Mt. Hermon Road & Glen Canyon Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	208	1201	16	8	1642	147	5	3	20	138	0	166
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	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.97	1.00	0.95	0.95	0.95	1.00
Satd. Flow (prot)	1770	3433		1770	3438	1583	1806	1583	1681	1681	1583	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.89	1.00	0.75	0.75	1.00	1.00
Satd. Flow (perm)	1770	3433		1770	3438	1583	1653	1583	1332	1332	1583	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	212	1226	16	8	1676	150	5	3	20	141	0	169
RTOR Reduction (vph)	0	1	0	0	0	52	0	0	17	0	0	145
Lane Group Flow (vph)	212	1241	0	8	1676	98	0	8	3	70	71	24
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8		8		4	
Permitted Phases						6	8		8		4	4
Actuated Green, G (s)	17.0	86.0		1.4	70.4	70.4	16.6	16.6	16.6	16.6	16.6	16.6
Effective Green, g (s)	17.0	86.0		1.4	70.4	70.4	16.6	16.6	16.6	16.6	16.6	16.6
Actuated g/C Ratio	0.15	0.74		0.01	0.61	0.61	0.14	0.14	0.14	0.14	0.14	0.14
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)	259	2545		21	2087	961	237	227	191	191	227	227
v/s Ratio Prot	c0.12	0.36		0.00	c0.49							
v/s Ratio Perm						0.06	0.00	0.00	0.05	c0.05	0.02	
v/c Ratio	0.82	0.49		0.38	0.80	0.10	0.03	0.01	0.37	0.37	0.11	
Uniform Delay, d1	48.0	6.1		56.9	17.5	9.6	42.8	42.7	44.9	45.0	43.2	
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	17.9	0.7		11.2	3.4	0.2	0.1	0.0	1.2	1.2	0.2	
Delay (s)	65.9	6.7		68.0	20.9	9.8	42.9	42.7	46.1	46.2	43.5	
Level of Service	E	A		E	C	A	D	D	D	D	D	D
Approach Delay (s)		15.4			20.2			42.7				44.7
Approach LOS		B			C			D				D

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	7	↑	↑
Volume (vph)	0	1017	269	187	1000	0	300	0	246	7	106	490
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1857	1538
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2468		1583		1857	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1038	274	191	1020	0	306	0	251	7	108	500
RTOR Reduction (vph)	0	0	191	0	0	0	0	0	174	0	0	45
Lane Group Flow (vph)	0	1038	83	191	1020	0	306	0	77	0	115	455
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		18				4	
Actuated Green, G (s)		27.0	27.0	10.0	41.0		13.5		27.5		23.0	23.0
Effective Green, g (s)		27.0	27.0	10.0	41.0		13.5		27.5		23.0	23.0
Actuated g/C Ratio		0.30	0.30	0.11	0.46		0.15		0.31		0.26	0.26
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
Lane Grp Cap (vph)		1037	478	198	1621		372		486		477	395
v/s Ratio Prot		c0.30		c0.11	0.29						0.06	
v/s Ratio Perm			0.05				c0.12		0.05			c0.30
v/c Ratio		1.00	0.17	0.96	0.63		0.82		0.16		0.24	1.15
Uniform Delay, d1		31.2	23.0	39.6	18.5		36.8		22.6		26.3	33.2
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		28.2	0.2	53.3	0.8		13.6		0.2		0.3	93.3
Delay (s)		59.4	23.2	92.9	19.2		50.5		22.7		26.6	126.5
Level of Service		E	C	F	B		D		C		C	F
Approach Delay (s)		51.9			30.9		38.0				107.9	
Approach LOS		D			C		D				F	

Intersection Summary			
HCM Average Control Delay	52.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
8: Bean Creek Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑↑	↑↑	↑
Volume (vph)	160	113	143	805	1064	209
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	1.00	1.00	1.00	0.95	0.91	1.00
Frbp, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.96
Flpb, ped/bikes	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	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1500	1770	3539	5085	1513
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1500	1770	3539	5085	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	119	151	847	1120	220
RTOR Reduction (vph)	0	99	0	0	0	89
Lane Group Flow (vph)	168	20	151	847	1120	131
Confl. Peds. (#/hr)	30	30				30
Turn Type		Perm	Prot		Perm	
Protected Phases		4	5	2	6	
Permitted Phases		4			6	
Actuated Green, G (s)	19.8	19.8	15.2	88.2	69.0	69.0
Effective Green, g (s)	19.8	19.8	15.2	88.2	69.0	69.0
Actuated g/C Ratio	0.17	0.17	0.13	0.76	0.59	0.59
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)	302	256	232	2691	3025	900
v/s Ratio Prot	c0.09		c0.09	0.24	c0.22	
v/s Ratio Perm		0.01				0.09
v/c Ratio	0.56	0.08	0.65	0.31	0.37	0.15
Uniform Delay, d1	44.1	40.4	47.9	4.4	12.2	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.1	6.4	0.3	0.3	0.3
Delay (s)	46.3	40.6	54.3	4.7	12.6	10.8
Level of Service	D	D	D	A	B	B
Approach Delay (s)	43.9			12.2	12.3	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
9: Erba Lane & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	61	0	74	15	0	17	26	966	2	32	1323	84
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		0.93	1.00		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.98	0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1690	1770		3538	1770		3508	3508	
Flt Permitted	0.73	1.00		0.82	0.95		1.00	0.95		1.00	1.00	
Satd. Flow (perm)	1369	1583		1420	1770		3538	1770		3508	3508	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	0	78	16	0	18	27	1017	2	34	1393	88
RTOR Reduction (vph)	0	0	68	0	16	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	64	10	0	18	0	27	1019	0	34	1475	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	5.6	5.6		5.6		1.3	25.7			2.5	26.9	
Effective Green, g (s)	5.6	5.6		5.6		1.3	25.7			2.5	26.9	
Actuated g/C Ratio	0.12	0.12		0.12		0.03	0.56			0.05	0.59	
Clearance Time (s)	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	
Lane Grp Cap (vph)	167	194		174		50	1985			97	2060	
v/s Ratio Prot						0.02	0.29			0.02	0.42	
v/s Ratio Perm	0.05	0.01		0.01								
v/c Ratio	0.38	0.05		0.10		0.54	0.51			0.35	0.72	
Uniform Delay, d1	18.5	17.7		17.9		22.0	6.2			20.9	6.7	
Progression Factor	1.00	1.00		1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	1.5	0.1		0.3		11.4	0.2			2.2	2.2	
Delay (s)	20.0	17.9		18.1		33.3	6.4			23.1	8.9	
Level of Service	B	B		B		C	A			C	A	
Approach Delay (s)	18.8			18.1			7.1				9.2	
Approach LOS	B			B			A				A	
<b>Intersection Summary</b>												
HCM Average Control Delay	9.0			HCM Level of Service				A				
HCM Volume to Capacity ratio	0.59											
Actuated Cycle Length (s)	45.8			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	65.9%			ICU Level of Service				C				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕		↕	↕	
Volume (vph)	32	16	38	328	46	261	0	883	236	343	1255	0
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	1.00	1.00	1.00	1.00		0.95	1.00		0.95	1.00	0.95
Frt	1.00	0.85	1.00	0.87	1.00		0.97	1.00		1.00	1.00	1.00
Flt Protected	0.97	1.00	0.95	1.00	1.00		1.00	0.95		1.00	0.95	1.00
Satd. Flow (prot)	1803	1583	1770	1625	1625		3427	1770		3539	3539	
Flt Permitted	0.59	1.00	0.72	1.00	1.00		1.00	0.95		1.00	1.00	1.00
Satd. Flow (perm)	1102	1583	1348	1625	1625		3427	1770		3539	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	17	40	345	48	275	0	929	248	361	1321	0
RTOR Reduction (vph)	0	0	31	0	214	0	0	49	0	0	0	0
Lane Group Flow (vph)	0	51	9	345	109	0	0	1128	0	361	1321	0
Turn Type	Perm		Perm	Perm		Prot		Prot		Prot		Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	11.0	11.0	11.0	11.0		18.6		8.0		30.6	30.6	
Effective Green, g (s)	11.0	11.0	11.0	11.0		18.6		8.0		30.6	30.6	
Actuated g/C Ratio	0.22	0.22	0.22	0.22		0.38		0.16		0.62	0.62	
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)	244	351	299	360		1285		285		2183	2183	
v/s Ratio Prot				0.07		0.33		0.20		0.37	0.37	
v/s Ratio Perm	0.05	0.01		0.26								
v/c Ratio	0.21	0.03		1.15	0.30	0.88		1.27		0.61	0.61	
Uniform Delay, d1	15.7	15.1		19.3	16.1	14.4		20.8		5.8	5.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.0		100.4	0.5	7.1		144.9		1.3	1.3	
Delay (s)	16.2	15.1		119.7	16.6	21.5		165.7		7.1	7.1	
Level of Service	B	B		F	B	C		F		A	A	
Approach Delay (s)	15.7			69.8		21.5		41.1		41.1	41.1	
Approach LOS	B			E		C		D		D	D	
<b>Intersection Summary</b>												
HCM Average Control Delay	39.4			HCM Level of Service				D				
HCM Volume to Capacity ratio	1.04											
Actuated Cycle Length (s)	49.6			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	90.0%			ICU Level of Service				E				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
11: Carbonero Way & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔	↔	↔		↔	↔	
Volume (vph)	6	0	11	92	0	7	8	944	36	0	1293	5
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		1.00		1.00	1.00	0.95				0.95	
Frt	0.91		1.00		0.85	1.00	0.99				1.00	
Fit Protected	0.98		0.95		1.00	0.95	1.00				1.00	
Satd. Flow (prot)	1667		1770		1583	1770	3520				3537	
Fit Permitted	0.98		0.75		1.00	0.95	1.00				1.00	
Satd. Flow (perm)	1667		1389		1583	1770	3520				3537	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	0	12	97	0	7	8	994	38	0	1361	5
RTOR Reduction (vph)	0	10	0	0	0	6	0	3	0	0	0	0
Lane Group Flow (vph)	0	8	0	97	0	1	8	1029	0	0	1366	0
Turn Type	Perm		custom		custom		Prot			Prot		
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	6.0			6.0		6.0	1.1	26.6			21.5	
Effective Green, g (s)	6.0			6.0		6.0	1.1	26.6			21.5	
Actuated g/C Ratio	0.15			0.15		0.15	0.03	0.66			0.53	
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)	246			205		234	48	2306			1873	
v/s Ratio Prot							0.00	c0.29			c0.39	
v/s Ratio Perm	0.00			c0.07		0.00						
v/c Ratio	0.03			0.47		0.00	0.17	0.45			0.73	
Uniform Delay, d1	14.8			15.9		14.8	19.3	3.4			7.3	
Progression Factor	1.00			1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2	0.1			1.7		0.0	1.6	0.1			1.5	
Delay (s)	14.9			17.6		14.8	20.9	3.5			8.8	
Level of Service	B			B		B	C	A			A	
Approach Delay (s)	14.9			17.4		17.4		3.7			8.8	
Approach LOS	B			B		B		A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay				7.1			HCM Level of Service					A
HCM Volume to Capacity ratio				0.69								
Actuated Cycle Length (s)				40.6			Sum of lost time (s)					12.0
Intersection Capacity Utilization				54.3%			ICU Level of Service					A
Analysis Period (min)				15								
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis  
12: EL Pueblo Road & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔	↔	↔		↔	↔	
Volume (vph)	23	0	41	182	0	53	46	729	80	19	875	25
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
Lane Util. Factor	1.00		1.00		1.00	1.00	0.95				1.00	0.95
Frt	0.91		1.00		0.85	1.00	0.99				1.00	1.00
Fit Protected	0.98		0.95		1.00	0.95	1.00				0.95	1.00
Satd. Flow (prot)	1671		1770		1583	1770	3487				1770	3525
Fit Permitted	0.98		0.71		1.00	0.95	1.00				0.95	1.00
Satd. Flow (perm)	1671		1329		1583	1770	3487				1770	3525
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	0	43	192	0	56	48	767	84	20	921	26
RTOR Reduction (vph)	0	34	0	0	0	45	0	14	0	0	3	0
Lane Group Flow (vph)	0	33	0	192	0	11	48	837	0	20	944	0
Turn Type	Perm		custom		custom		Prot			Prot		
Protected Phases		4					5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	8.2			8.2		8.2	3.1	19.1			1.1	17.1
Effective Green, g (s)	8.2			8.2		8.2	3.1	19.1			1.1	17.1
Actuated g/C Ratio	0.20			0.20		0.20	0.08	0.47			0.03	0.42
Clearance Time (s)	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
Lane Grp Cap (vph)	339			270		321	136	1649			48	1492
v/s Ratio Prot							0.03	c0.24			0.01	c0.27
v/s Ratio Perm	0.02			c0.14		0.01						
v/c Ratio	0.10			0.71		0.04	0.35	0.51			0.42	0.63
Uniform Delay, d1	13.1			15.0		12.9	17.7	7.4			19.3	9.2
Progression Factor	1.00			1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.1			8.5		0.0	1.6	0.2			5.8	0.9
Delay (s)	13.2			23.5		13.0	19.3	7.6			25.1	10.1
Level of Service	B			C		B	B	A			C	B
Approach Delay (s)	13.2			21.1		21.1		8.3			10.4	
Approach LOS	B			C		C		A			B	
<b>Intersection Summary</b>												
HCM Average Control Delay				10.8			HCM Level of Service					B
HCM Volume to Capacity ratio				0.60								
Actuated Cycle Length (s)				40.4			Sum of lost time (s)					8.0
Intersection Capacity Utilization				57.6%			ICU Level of Service					B
Analysis Period (min)				15								
c	Critical Lane Group											



HCM Signalized Intersection Capacity Analysis  
13: Victor Square (North) & Scotts Valley Drive

8/13/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Volume (vph)	223	102	727	142	180	625
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Fit Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3425		1770	3539
Fit Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3425		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	235	107	765	149	189	658
RTOR Reduction (vph)	0	37	29	0	0	0
Lane Group Flow (vph)	235	70	885	0	189	658
Confl. Peds. (#/hr)				25		
Turn Type	pm+ov		Prot			
Protected Phases	6	7	8	7		4
Permitted Phases	6					
Actuated Green, G (s)	7.4	13.5	18.0	6.1		28.1
Effective Green, g (s)	7.4	13.5	18.0	6.1		28.1
Actuated g/C Ratio	0.17	0.31	0.41	0.14		0.65
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	301	637	1417	248		2286
v/s Ratio Prot	c0.13	0.02	c0.26	c0.11		0.19
v/s Ratio Perm	0.03					
v/c Ratio	0.78	0.11	0.62	0.76		0.29
Uniform Delay, d1	17.3	10.7	10.1	18.0		3.3
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	12.3	0.1	0.9	12.9		0.1
Delay (s)	29.6	10.8	10.9	30.9		3.4
Level of Service	C	B	B	C		A
Approach Delay (s)	23.7		10.9	9.6		
Approach LOS	C		B	A		

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
14: Granite Creek Road & Scotts Valley Drive

8/13/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Volume (vph)	29	33	15	292	4	395	10	446	455	223	409	5
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	1.00	1.00	0.95	0.95	1.00	1.00	1.00	0.95	1.00	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Fit Protected	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1820	1448	1681	1687	1583	1770	3539	1480	1770	3531		
Fit Permitted	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1820	1448	1681	1687	1583	1770	3539	1480	1770	3531		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	35	16	307	4	416	11	469	479	235	431	5
RTOR Reduction (vph)	0	0	14	0	0	265	0	0	350	0	1	0
Lane Group Flow (vph)	0	66	2	157	154	151	11	469	129	235	435	0
Confl. Peds. (#/hr)				25							25	
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7	8	8	1	5	2	2	1	6		
Permitted Phases	7											
Actuated Green, G (s)	6.0	6.0	10.9	10.9	21.8	1.6	16.2	16.2	10.9	25.5		
Effective Green, g (s)	6.0	6.0	10.9	10.9	21.8	1.6	16.2	16.2	10.9	25.5		
Actuated g/C Ratio	0.10	0.10	0.18	0.18	0.36	0.03	0.27	0.27	0.18	0.42		
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	5.0	5.0	3.0	5.0		
Lane Grp Cap (vph)	182	145	305	306	681	47	956	400	322	1501		
v/s Ratio Prot	c0.04		c0.09	0.09	0.04	0.01	c0.13		c0.13	0.12		
v/s Ratio Perm	0.00											
v/c Ratio	0.36	0.01	0.51	0.50	0.22	0.23	0.49	0.32	0.73	0.29		
Uniform Delay, d1	25.2	24.3	22.2	22.1	13.2	28.6	18.4	17.5	23.2	11.3		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	0.78		
Incremental Delay, d2	1.2	0.0	1.5	1.3	0.2	2.6	1.8	2.1	7.7	0.5		
Delay (s)	26.4	24.4	23.6	23.4	13.4	31.2	20.2	19.7	32.1	9.3		
Level of Service	C	C	C	C	B	C	C	B	C	A		
Approach Delay (s)	26.0		17.7			20.1		17.3				
Approach LOS	C		B			C		B				

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 15: Glenwood Drive-SR 17 SB Ramps & Scotts Valley Drive

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	105	247	148	54	51	399	242	123	63	172	11
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	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frft	1.00	0.85	1.00	0.94	1.00	1.00	0.85	1.00	0.99	1.00	0.99	1.00
Fit Protected	1.00	1.00	0.95	0.99	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1854	1583	1681	1604	3433	3539	1495	1770	3490	1770	1833	1822
Fit Permitted	1.00	1.00	0.95	0.99	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1854	1583	1681	1604	3433	3539	1495	1770	3490	1770	1833	1822
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	111	260	156	57	54	420	255	129	66	181	12
RTOR Reduction (vph)	0	0	215	0	45	0	0	0	85	0	8	0
Lane Group Flow (vph)	0	122	45	136	86	0	420	255	44	66	185	0
Confl. Peds. (#/hr)	25					25			25			25
Turn Type	Split		Perm	Split		Prot		Perm	Prot		Prot	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4					2				
Actuated Green, G (s)		10.3	10.3	8.5	8.5		11.6	20.5	20.5	4.7	13.6	
Effective Green, g (s)		10.3	10.3	8.5	8.5		11.6	20.5	20.5	4.7	13.6	
Actuated g/C Ratio		0.17	0.17	0.14	0.14		0.19	0.34	0.34	0.08	0.23	
Clearance Time (s)		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		5.0	3.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		318	272	238	227		664	1209	511	139	791	
v/s Ratio Prot		c0.07		c0.08	0.05		c0.12	0.07		c0.04	c0.05	
v/s Ratio Perm			0.03					0.03				
v/c Ratio		0.38	0.16	0.57	0.38		0.63	0.21	0.09	0.47	0.23	
Uniform Delay, d1		22.0	21.2	24.0	23.4		22.2	14.0	13.4	26.5	18.9	
Progression Factor		1.00	1.00	1.00	1.00		0.79	0.64	0.51	1.00	1.00	
Incremental Delay, d2		0.8	0.3	3.3	1.1		2.4	0.3	0.3	2.5	0.7	
Delay (s)		22.8	21.5	27.3	24.4		19.9	9.3	7.1	29.0	19.6	
Level of Service		C	C	C	C		B	A	A	C	B	
Approach Delay (s)		21.9			25.9			14.5			22.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 16: Granite Creek Road-SR 17 NB Ramps & Santas Village Road

8/4/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	152	207	233	16	2	236	81	364	10	179	32
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frft	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.85	1.00	0.98	1.00	0.98
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1833	1770	1863	1461	1822	1770	1833	1822
Fit Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1833	1770	1863	1461	1822	1770	1833	1822
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	160	218	245	17	2	248	85	383	11	188	34
RTOR Reduction (vph)	0	0	126	0	1	0	0	0	301	0	11	0
Lane Group Flow (vph)	34	160	92	245	18	0	248	85	82	0	222	0
Confl. Peds. (#/hr)									25			
Turn Type	Prot		pm+ov	Prot			Split		Perm	Split		
Protected Phases	5	2		3	1	6		3	3		4	4
Permitted Phases			2							3		
Actuated Green, G (s)	1.5	10.3	22.8	8.7	17.5		12.5	12.5	12.5		10.8	
Effective Green, g (s)	1.5	10.3	22.8	8.7	17.5		12.5	12.5	12.5		10.8	
Actuated g/C Ratio	0.03	0.18	0.39	0.15	0.30		0.21	0.21	0.21		0.19	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	46	329	728	264	550		380	399	313		338	
v/s Ratio Prot	0.02	c0.09	0.03	c0.14	0.01		c0.14	0.05			c0.12	
v/s Ratio Perm			0.03						0.06			
v/c Ratio	0.74	0.49	0.13	0.93	0.03		0.65	0.21	0.26		0.66	
Uniform Delay, d1	28.2	21.6	11.4	24.5	14.4		20.9	18.9	19.1		22.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	46.3	1.3	0.1	36.2	0.0		4.0	0.3	0.4		4.6	
Delay (s)	74.5	23.0	11.4	60.7	14.4		24.9	19.1	19.5		26.6	
Level of Service	E	C	B	E	B		C	B	B		C	
Approach Delay (s)		21.1			57.4			21.3			26.6	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 17: Mt. Hermon Road & K-Mart Access

8/4/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	66	868	56	78	1696	174	155	22	73	202	17	39
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	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.96	1.00
Satd. Flow (prot)	1770	3507	1770	3539	1583	1785	1583	1781	1583	1781	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	914	59	82	1785	183	163	23	77	213	18	41
RTOR Reduction (vph)	0	7	0	0	90	0	0	57	0	0	0	31
Lane Group Flow (vph)	69	966	0	82	1785	93	0	186	20	0	231	10
Turn Type	Prot		Prot		Perm	Perm	Perm	Perm	Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2		6	
Permitted Phases						8	2		2		6	6
Actuated Green, G (s)	2.8	31.6		3.4	32.2	32.2	16.1	16.1		16.1	16.1	16.1
Effective Green, g (s)	2.8	31.6		3.4	32.2	32.2	16.1	16.1		16.1	16.1	16.1
Actuated g/C Ratio	0.04	0.50		0.05	0.51	0.51	0.26	0.26		0.26	0.26	0.26
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)	79	1756		95	1806	808	234	404		267	404	
v/s Ratio Prot	0.04	0.28		c0.05	c0.50							
v/s Ratio Perm					0.06		0.20	0.01		c0.22		0.01
v/c Ratio	0.87	0.55		0.86	0.99	0.12	0.79	0.05		0.87		0.03
Uniform Delay, d1	30.0	10.9		29.6	15.3	8.0	22.0	17.7		22.5		17.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	60.4	0.4		50.8	18.3	0.1	23.7	0.2		29.2		0.1
Delay (s)	90.4	11.2		80.4	33.5	8.1	45.7	18.0		51.7		17.7
Level of Service	F	B		F	C	A	D	B		D		B
Approach Delay (s)	16.5			33.1			37.6			46.6		
Approach LOS	B			C			D			D		

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

PM Peak Hour - Buildout w/ Mid-Town Interchange plus Project Conditions  
 Town Center Specific Plan  
 City of Scotts Valley

Level of Service Computation Report  
 2000 HCM Unsignalized Method (Future Volume Alternative)  
 \*\*\*\*\*  
 Intersection #18 Mt Hermon Road/Washington Mutual Access  
 \*\*\*\*\*  
 Average Delay (sec/veh): 2383.8 Worst Case Level Of Service: F[54743.1]  
 \*\*\*\*\*  
 Street Name: Washington Mutual Access Mt Hermon Road  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include  
 Lanes: 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  
 Volume Module:  
 Base Vol: 13 0 184 0 0 0 0 890 45 294 1567 0  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 13 0 184 0 0 0 0 890 45 294 1567 0  
 Added Vol: 0 0 0 128 0 7 15 238 0 0 264 88  
 Project: 0 0 0 14 0 10 14 -14 0 0 -10 10  
 Initial Fut: 13 0 184 142 0 17 29 1114 45 294 1821 98  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 14 0 194 149 0 18 31 1173 47 309 1917 103  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 FinalVolume: 14 0 194 149 0 18 31 1173 47 309 1917 103  
 Critical Gap Module:  
 Critical Gp: 7.5 6.5 6.9 7.5 6.5 6.9 4.1 xxxx xxxxx 4.1 xxxx xxxxx  
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx  
 Capacity Module:  
 Cnflct Vol: 2835 3896 610 3235 3868 1010 2020 xxxx xxxxx 1220 xxxx xxxxx  
 Potent Cap.: 8 3 442 4 4 241 285 xxxx xxxxx 579 xxxx xxxxx  
 Move Cap.: 4 1 442 1 2 241 285 xxxx xxxxx 579 xxxx xxxxx  
 Volume/Cap: 3.35 0.00 0.44 xxxx 0.00 0.07 0.11 xxxx xxxx 0.53 xxxx xxxx  
 Level Of Service Module:  
 2Way95thQ: xxxx xxxx xxxxx 21.2 xxxx xxxxx 0.4 xxxx xxxxx 3.2 xxxx xxxxx  
 Control Del:xxxxx xxxx xxxxx 61294 xxxx xxxxx 19.1 xxxx xxxxx 18.2 xxxx xxxxx  
 LOS by Move: \* \* \* F \* \* C \* \* C \* \*  
 Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT  
 Shared Cap.: xxxx 60 xxxxx xxxx xxxxx 241 xxxx xxxx xxxxx xxxx xxxx xxxxx  
 SharedQueue:xxxxx 22.0 xxxxx xxxxx xxxxx 0.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  
 Shrd ConDel:xxxxx 1248 xxxxx xxxxx xxxxx 21.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  
 Shared LOS: \* F \* \* \* C \* \* \* \* \* \*  
 ApproachDel: 1248.4 xxxxxx xxxxxx xxxxxx  
 ApproachLOS: F F \* \* \*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

PM Peak Hour - Buildout w/ Mid-Town Interchange plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #19 Kings Village Rd/Blue Bonnet Ln
Cycle (sec): 100 Critical Vol./Cap.(X): 0.212
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 0 Level Of Service: A
Street Name: Kings Village Rd Blue Bonnet Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 44 0 108 0 0 0 0 31 97 107 25 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 44 0 108 0 0 0 0 31 97 107 25 1
Added Vol: 4 0 10 0 0 0 0 5 5 5 4 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 48 0 118 0 0 0 0 36 102 112 29 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 51 0 124 0 0 0 0 38 107 118 31 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 51 0 124 0 0 0 0 38 107 118 31 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 51 0 124 0 0 0 0 38 107 118 31 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.29 0.00 0.71 0.00 1.00 0.00 0.00 0.26 0.74 0.79 0.20 0.01
Final Sat.: 238 0 585 0 711 0 0 226 639 600 155 5
Capacity Analysis Module:
Vol/Sat: 0.21 xxxxx 0.21 xxxxx 0.00 xxxxx xxxxx 0.17 0.17 0.20 0.20 0.20
Crit Moves: \*\*\*\*
Delay/Veh: 8.2 0.0 8.2 0.0 0.0 0.0 0.0 7.8 7.8 8.6 8.6 8.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.2 0.0 8.2 0.0 0.0 0.0 0.0 7.8 7.8 8.6 8.6 8.6
LOS by Move: A \* A \* \* \* \* A A A A A
ApproachDel: 8.2 xxxxxx 7.8 8.6
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 8.2 xxxxxx 7.8 8.6
LOS by Appr: A \* A A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.2 0.2 0.2 0.2 0.2 0.2

PM Peak Hour - Buildout w/ Mid-Town Interchange plus Project Conditions
Town Center Specific Plan
City of Scotts Valley

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Blue Bonnet Lane/Bean Creek Road
Average Delay (sec/veh): 6.9 Worst Case Level Of Service: B[ 13.1]
Street Name: Bean Creek Road Blue Bonnet Lane
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1 0 0 0 1! 0 0 0 0 1 0 0 0
Volume Module:
Base Vol: 124 40 3 0 41 23 29 3 139 2 6 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 124 40 3 0 41 23 29 3 139 2 6 0
Added Vol: 15 4 0 0 3 2 4 0 10 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 139 44 3 0 44 25 33 3 149 2 6 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 146 46 3 0 46 26 35 3 157 2 6 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 146 46 3 0 46 26 35 3 157 2 6 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 7.1 6.5 6.2 7.1 6.5 xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 xxxxx
Capacity Module:
Cnflct Vol: 73 xxxxx xxxxx xxxxx xxxxx xxxxx 403 402 59 480 413 xxxxx
Potent Cap.: 1540 xxxxx xxxxx xxxxx xxxxx xxxxx 561 540 1012 499 532 xxxxx
Move Cap.: 1540 xxxxx xxxxx xxxxx xxxxx xxxxx 512 484 1012 387 477 xxxxx
Volume/Cap: 0.10 xxxxx xxxxx xxxxx xxxxx xxxxx 0.07 0.01 0.16 0.01 0.01 xxxxx
Level Of Service Module:
2Way95thQ: 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 7.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 849 xxxxx 451 xxxxx xxxxx
SharedQueue: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.9 xxxxx 0.1 xxxxx xxxxx
Shrd ConDel: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.5 xxxxx 13.1 xxxxx xxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxx xxxxxx 10.5 13.1
ApproachLOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Note: Queue reported is the number of cars per lane.

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	653	1238	123	156	1371	421	162	102	142	454	92	678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3366		1770	3438	1478	1681	1749	1478	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3366		1770	3438	1478	1681	1749	1478	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	666	1263	126	159	1399	430	165	104	145	463	94	692
RTOR Reduction (vph)	0	5	0	0	0	178	0	0	126	0	0	0
Lane Group Flow (vph)	666	1384	0	159	1399	252	132	137	19	463	94	692
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	26.7	59.5		15.8	48.6	48.6	17.4	17.4	17.4	20.8	20.8	130.0
Effective Green, g (s)	26.7	59.5		15.8	48.6	48.6	17.4	17.4	17.4	20.8	20.8	130.0
Actuated g/C Ratio	0.21	0.46		0.12	0.37	0.37	0.13	0.13	0.13	0.16	0.16	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	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)	705	1541		215	1285	553	225	234	198	549	298	1550
v/s Ratio Prot	c0.19	0.41		0.09	c0.41	0.08	c0.08	0.08	c0.13	0.05		
v/s Ratio Perm						0.17			0.01			0.45
v/c Ratio	0.94	0.90		0.74	1.09	0.46	0.59	0.59	0.10	0.84	0.32	0.45
Uniform Delay, d1	50.9	32.5		55.1	40.7	30.7	52.9	52.9	49.4	53.0	48.3	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	21.3	8.6		12.5	52.9	2.7	3.9	3.7	0.2	11.3	0.6	0.9
Delay (s)	72.2	41.1		67.6	93.6	33.4	56.8	56.6	49.6	64.3	48.9	0.9
Level of Service	E	D		E	F	C	E	E	D	E	D	A
Approach Delay (s)		51.2			78.5			54.2				28.0
Approach LOS		D			E			D				C
<b>Intersection Summary</b>												
HCM Average Control Delay				55.9			HCM Level of Service					E
HCM Volume to Capacity ratio				0.93								
Actuated Cycle Length (s)				130.0			Sum of lost time (s)					16.5
Intersection Capacity Utilization				86.6%			ICU Level of Service					E
Analysis Period (min)				15								
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	0	1333	384	186	995	0	371	0	301	10	111	446
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Fit Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	1538
Fit Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2450		1583		1855	1538
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1360	392	190	1015	0	379	0	307	10	113	455
RTOR Reduction (vph)	0	0	241	0	0	0	0	0	211	0	0	38
Lane Group Flow (vph)	0	1360	151	190	1015	0	379	0	96	0	123	417
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1		6				4		4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		27.0	27.0		10.0		41.0		28.0		23.0	23.0
Effective Green, g (s)		27.0	27.0		10.0		41.0		28.0		23.0	23.0
Actuated g/C Ratio		0.30	0.30		0.11		0.46		0.16		0.26	0.26
Clearance Time (s)		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
Lane Grp Cap (vph)		1031	475		1612		381		492		474	393
v/s Ratio Prot		c0.40			c0.11		0.29				0.07	
v/s Ratio Perm			0.10				c0.15		0.06			c0.27
v/c Ratio		1.32	0.32		0.96		0.63		0.99		0.26	1.06
Uniform Delay, d1		31.5	24.4		39.8		18.7		38.0		22.7	33.5
Progression Factor		1.00	1.00		1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		150.5	0.4		53.5		0.8		44.5		0.2	0.3
Delay (s)		182.0	24.8		93.3		19.5		82.4		22.9	27.0
Level of Service		F	C		F		B		F		C	F
Approach Delay (s)		146.8			31.1				55.8			81.3
Approach LOS		F			C				E			F
<b>Intersection Summary</b>												
HCM Average Control Delay		90.0					HCM Level of Service					F
HCM Volume to Capacity ratio		1.13										
Actuated Cycle Length (s)		90.0					Sum of lost time (s)					16.0
Intersection Capacity Utilization		75.7%					ICU Level of Service					D
Analysis Period (min)		15										

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑↑
Volume (vph)	0	1111	262	183	1012	0	296	0	243	7	104	521
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1857	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2470		1583		1857	2707
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1145	270	189	1043	0	305	0	251	7	107	537
RTOR Reduction (vph)	0	0	175	0	0	0	0	0	180	0	0	74
Lane Group Flow (vph)	0	1145	95	189	1043	0	305	0	71	0	114	463
Heavy Vehicles (%)		2%	5%	2%	2%		2%	2%	2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		30.1	30.1	8.0	42.1		12.0		24.0		19.3	19.3
Effective Green, g (s)		30.1	30.1	8.0	42.1		12.0		24.0		19.3	19.3
Actuated g/C Ratio		0.35	0.35	0.09	0.49		0.14		0.28		0.23	0.23
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)		1212	558	166	1745		347		445		420	612
v/s Ratio Prot		c0.33		c0.11	0.29						0.06	
v/s Ratio Perm			0.06				c0.12		0.04			c0.17
v/c Ratio		0.94	0.17	1.14	0.60		0.88		0.16		0.27	0.76
Uniform Delay, d1		26.8	19.0	38.7	15.6		36.0		23.1		27.3	30.9
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		14.5	0.1	112.0	0.6		21.4		0.2		0.4	5.3
Delay (s)		41.3	19.2	150.7	16.1		57.4		23.3		27.6	36.2
Level of Service		D	B	F	B		E		C		C	D
Approach Delay (s)		37.1			36.8		42.0		34.7			
Approach LOS		D			D		D		C			C

Intersection Summary			
HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	85.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑↑
Volume (vph)	0	1068	378	183	722	0	366	0	297	10	110	374
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2450		1583		1855	2707
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1101	390	189	744	0	377	0	306	10	113	386
RTOR Reduction (vph)	0	0	242	0	0	0	0	0	212	0	0	158
Lane Group Flow (vph)	0	1101	148	189	744	0	377	0	94	0	123	228
Heavy Vehicles (%)		2%	5%	2%	2%		2%	2%	2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		29.7	29.7	8.0	41.7		12.0		24.0		12.6	12.6
Effective Green, g (s)		29.7	29.7	8.0	41.7		12.0		24.0		12.6	12.6
Actuated g/C Ratio		0.38	0.38	0.10	0.53		0.15		0.31		0.16	0.16
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)		1304	600	181	1885		375		485		299	436
v/s Ratio Prot		c0.32		c0.11	0.21						0.07	
v/s Ratio Perm			0.09				c0.15		0.06			c0.08
v/c Ratio		0.84	0.25	1.04	0.39		1.01		0.19		0.41	0.52
Uniform Delay, d1		22.2	16.6	35.1	10.8		33.1		20.0		29.5	30.1
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		5.2	0.2	79.0	0.1		47.8		0.2		0.9	1.1
Delay (s)		27.4	16.9	114.2	11.0		81.0		20.2		30.4	31.2
Level of Service		C	B	F	B		F		C		C	C
Approach Delay (s)		24.6			31.9		53.7		31.0			
Approach LOS		C			C		D		C			C

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	617	1148	39	99	618	574	74	140	161	635	101	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		4.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	3419		3433	3438	1544	1770	1863	1532	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3419		3433	3438	1544	1770	1863	1532	3433	1863	1550
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	636	1184	40	102	637	592	76	144	166	655	104	302
RTOR Reduction (vph)	0	3	0	0	0	142	0	0	11	0	0	0
Lane Group Flow (vph)	636	1221	0	102	637	450	76	144	155	655	104	302
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot	pm+ov	Split		pm+ov	Split			Free
Protected Phases	5	2		1	6	4	8	8	1	4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	15.7	29.2		8.0	21.5	42.9	14.9	14.9	22.9	21.4	21.4	90.0
Effective Green, g (s)	16.2	30.2		8.0	21.5	42.9	14.9	14.9	22.9	21.4	21.4	90.0
Actuated g/C Ratio	0.18	0.34		0.09	0.24	0.48	0.17	0.17	0.25	0.24	0.24	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	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)	618	1147		305	821	736	293	308	458	816	443	1550
v/s Ratio Prot	c0.19	c0.36		0.03	0.19	0.15	0.04	c0.08	0.03	c0.19	0.06	
v/s Ratio Perm						0.15			0.07			0.19
v/c Ratio	1.03	1.06		0.33	0.78	0.61	0.26	0.47	0.34	0.80	0.23	0.19
Uniform Delay, d1	36.9	29.9		38.5	32.0	17.4	32.7	34.0	27.4	32.3	27.7	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	43.9	45.6		0.7	7.1	1.5	0.5	1.1	0.4	5.7	0.3	0.3
Delay (s)	80.8	75.5		39.2	39.1	18.9	33.2	35.1	27.8	38.0	28.0	0.3
Level of Service	F	E		D	D	B	C	D	C	D	C	A
Approach Delay (s)		77.3			30.1			31.6				26.3
Approach LOS		E			C			C				C
<b>Intersection Summary</b>												
HCM Average Control Delay	48.3			HCM Level of Service				D				
HCM Volume to Capacity ratio	0.86											
Actuated Cycle Length (s)	90.0				Sum of lost time (s)				11.5			
Intersection Capacity Utilization	84.5%			ICU Level of Service				E				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	0	1659	105	120	1125	0	258	0	181	6	36	209
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Fit Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1850	2707
Fit Permitted		1.00	1.00	0.95	1.00		0.73		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2634		1583		1850	2707
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1710	108	124	1160	0	266	0	187	6	37	215
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	166	0	0	152
Lane Group Flow (vph)	0	1710	61	124	1160	0	266	0	21	0	43	63
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases			2				8		8			4
Actuated Green, G (s)		50.9	50.9	10.2	65.1		11.0		11.0		10.2	10.2
Effective Green, g (s)		50.9	50.9	10.2	65.1		11.0		11.0		10.2	10.2
Actuated g/C Ratio		0.52	0.52	0.10	0.66		0.11		0.11		0.10	0.10
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)		1780	820	184	2344		295		177		192	281
v/s Ratio Prot		c0.50		c0.07	0.33						c0.02	
v/s Ratio Perm			0.04				c0.10		0.01			0.02
v/c Ratio		0.96	0.07	0.67	0.49		0.90		0.12		0.22	0.22
Uniform Delay, d1		22.7	11.9	42.4	8.3		43.1		39.3		40.4	40.4
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		13.2	0.0	9.4	0.2		28.6		0.3		0.6	0.4
Delay (s)		36.0	11.9	51.8	8.5		71.7		39.6		41.0	40.8
Level of Service		D	B	D	A		E		D		D	D
Approach Delay (s)		34.5			12.7			58.4				40.9
Approach LOS		C			B			E				D
<b>Intersection Summary</b>												
HCM Average Control Delay	30.4			HCM Level of Service				C				
HCM Volume to Capacity ratio	0.83											
Actuated Cycle Length (s)	98.3				Sum of lost time (s)				16.0			
Intersection Capacity Utilization	76.5%			ICU Level of Service				D				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

18: Mt. Hermon Road & Washington Mutual Access-Project Access

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	12	1552	22	162	769	34	2	0	111	46	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frnt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583		1770	1583		1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.73	1.00		0.76	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583		1352	1583		1409	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	1634	23	171	809	36	2	0	117	48	0	6
RTOR Reduction (vph)	0	1	0	0	0	15	0	0	92	0	0	5
Lane Group Flow (vph)	13	1656	0	171	809	21	0	2	25	0	48	1
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	4.0	40.0		10.0	46.0	46.0		17.0	17.0		17.0	17.0
Effective Green, g (s)	4.0	40.0		10.0	46.0	46.0		17.0	17.0		17.0	17.0
Actuated g/C Ratio	0.05	0.50		0.12	0.58	0.58		0.21	0.21		0.21	0.21
Clearance Time (s)	5.0	4.0		5.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)	89	1766		221	2035	910		287	336		299	336
v/s Ratio Prot	0.01	c0.47		c0.10	0.23							
v/s Ratio Perm						0.01	0.00	0.02		c0.03	0.00	
v/c Ratio	0.15	0.94		0.77	0.40	0.02		0.01	0.07		0.16	0.00
Uniform Delay, d1	36.4	18.8		33.9	9.4	7.3		24.8	25.2		25.7	24.8
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	11.0		22.8	0.6	0.0		0.0	0.4		1.1	0.0
Delay (s)	39.8	29.8		56.7	9.9	7.4		24.9	25.6		26.8	24.8
Level of Service	D	C		E	A	A		C	C		C	C
Approach Delay (s)		29.9			17.7			25.6			26.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	587	1027	109	224	1485	462	159	95	122	540	104	637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frnt, ped/bikes	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	0.98
Flt, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frnt	1.00	0.99		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	0.95	1.00	1.00
Satd. Flow (prot)	3433	3376		3433	3438	1513	1770	1863	1541	3433	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3376		3433	3438	1513	1770	1863	1541	3433	1863	1550
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	605	1059	112	231	1531	476	164	98	126	557	107	657
RTOR Reduction (vph)	0	6	0	0	0	167	0	0	85	0	0	0
Lane Group Flow (vph)	605	1165	0	231	1531	309	164	98	41	557	107	657
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	5!	2!		1!	6!	1!	5!	8	1!	1!	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	28.4	54.7		25.3	51.6	76.9	28.4	16.7	42.0	25.3	16.8	130.0
Effective Green, g (s)	28.4	54.7		25.3	52.6	76.9	28.4	16.7	42.0	25.3	16.8	130.0
Actuated g/C Ratio	0.22	0.42		0.19	0.40	0.59	0.22	0.13	0.32	0.19	0.13	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	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)	750	1421		668	1391	895	387	239	545	668	241	1550
v/s Ratio Prot	c0.18	0.35		0.07	c0.45	0.07	0.09	0.05	0.01	0.16	0.06	
v/s Ratio Perm						0.14			0.01			c0.42
v/c Ratio	0.81	0.82		0.35	1.10	0.34	0.42	0.41	0.07	0.83	0.44	0.42
Uniform Delay, d1	48.2	33.3		45.2	38.7	13.6	43.8	52.1	30.5	50.3	52.3	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	6.3	5.4		0.3	56.6	0.2	0.8	1.1	0.1	8.8	1.3	0.9
Delay (s)	54.5	38.7		45.5	95.3	13.9	44.5	53.3	30.6	59.1	53.6	0.9
Level of Service	D	D		D	F	B	D	D	C	E	D	A
Approach Delay (s)		44.1			72.8			42.2			29.7	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	7	↑	↑↑
Volume (vph)	0	1289	262	183	1140	0	296	0	243	7	104	556
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		0.95	1.00	1.00	0.95		0.97		1.00	1.00	0.88	1.00
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.85	1.00
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	1.00	1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583	1857	2707	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	1.00	1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2470		1583	1857	2707	2707
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1329	270	189	1175	0	305	0	251	7	107	573
RTOR Reduction (vph)	0	0	162	0	0	0	0	0	176	0	0	95
Lane Group Flow (vph)	0	1329	108	189	1175	0	305	0	75	0	114	478
Heavy Vehicles (%)		2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6			4		4			
Permitted Phases		2			8		18				4	
Actuated Green, G (s)		36.0	36.0	10.0	50.0		12.9		26.9		15.0	15.0
Effective Green, g (s)		36.0	36.0	10.0	50.0		12.9		26.9		15.0	15.0
Actuated g/C Ratio		0.40	0.40	0.11	0.56		0.14		0.30		0.17	0.17
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)		1377	634	197	1968		354		474		310	452
v/s Ratio Prot		c0.39		c0.11	0.33						0.06	
v/s Ratio Perm			0.07				c0.12		0.05			c0.18
v/c Ratio		0.97	0.17	0.96	0.60		0.86		0.16		0.37	1.06
Uniform Delay, d1		26.3	17.3	39.7	13.3		37.6		23.2		33.2	37.5
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		16.5	0.1	51.8	0.5		18.9		0.2		0.7	58.4
Delay (s)		42.8	17.5	91.5	13.7		56.5		23.3		34.0	95.8
Level of Service		D	B	F	B		E		C		C	F
Approach Delay (s)		38.6			24.5		41.5				85.6	
Approach LOS		D			C		D				F	

Intersection Summary

HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

18: Mt. Hermon Road & Washington Mutual Access/Project Access

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑	↑	13	↑	↑
Volume (vph)	29	1080	45	294	1779	86	13	0	184	125	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95	1.00	0.95	1.00		1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.99	1.00	1.00	0.85		1.00	0.85	1.00	0.85	1.00
Flt Protected		0.95	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)		1770	3518	1770	3539	1583		1770	1583	1770	1583	1583
Flt Permitted		0.95	1.00	0.95	1.00	1.00		0.64	1.00	0.75	1.00	1.00
Satd. Flow (perm)		1770	3518	1770	3539	1583		1200	1583	1394	1583	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	1137	47	309	1873	91	14	0	194	132	0	18
RTOR Reduction (vph)	0	4	0	0	40	0	0	0	153	0	0	14
Lane Group Flow (vph)	31	1180	0	309	1873	51	0	14	41	0	132	4
Turn Type		Prot		Prot		Perm		Perm		Perm		Perm
Protected Phases		7	4		3	8		2		2		6
Permitted Phases							8	2		2	6	6
Actuated Green, G (s)		4.0	29.0		17.0	42.0		16.0	16.0		16.0	16.0
Effective Green, g (s)		4.0	29.0		17.0	42.0		16.0	16.0		16.0	16.0
Actuated g/C Ratio		0.05	0.39		0.23	0.56		0.21	0.21		0.21	0.21
Clearance Time (s)		5.0	4.0		5.0	4.0		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)		94	1360		401	1982		256	338		297	338
v/s Ratio Prot		0.02	0.34		c0.17	c0.53						
v/s Ratio Perm							0.03	0.01	0.03		c0.09	0.00
v/c Ratio		0.33	0.87		0.77	0.95	0.06	0.05	0.12		0.44	0.01
Uniform Delay, d1		34.2	21.2		27.2	15.4	7.5	23.5	23.8		25.6	23.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		9.1	7.7		13.4	10.8	0.1	0.4	0.7		4.8	0.1
Delay (s)		43.4	28.9		40.5	26.3	7.6	23.9	24.6		30.4	23.3
Level of Service		D	C		D	C	A	C	C		C	C
Approach Delay (s)			29.3			27.5		24.5			29.5	
Approach LOS			C			C		C			C	

Intersection Summary

HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

### HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	576	1230	120	121	1364	397	159	80	109	428	70	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3381		3433	3438	1508	1770	1863	1538	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3381		3433	3438	1508	1770	1863	1538	3433	1863	1550
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	594	1268	124	125	1406	409	164	82	112	441	72	599
RTOR Reduction (vph)	0	5	0	0	0	157	0	0	79	0	0	0
Lane Group Flow (vph)	594	1387	0	125	1406	252	164	82	33	441	72	599
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	5!	2!		1!	6!	1!	5!	8	1!	1!	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	27.8	60.1		22.2	54.5	76.7	27.8	16.6	38.8	22.2	14.6	130.0
Effective Green, g (s)	27.8	60.1		22.2	55.5	76.7	27.8	16.6	38.8	22.2	14.6	130.0
Actuated g/C Ratio	0.21	0.46		0.17	0.43	0.59	0.21	0.13	0.30	0.17	0.11	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	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)	734	1563		586	1468	890	379	238	506	586	209	1550
v/s Ratio Prot	c0.17	0.41		0.04	c0.41	0.05	0.09	0.04	0.01	0.13	0.04	
v/s Ratio Perm						0.12			0.01			c0.39
v/c Ratio	0.81	0.89		0.21	0.96	0.28	0.43	0.34	0.07	0.75	0.34	0.39
Uniform Delay, d1	48.6	31.9		46.4	36.1	13.1	44.3	51.7	32.6	51.3	53.3	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	6.6	7.9		0.2	15.4	0.2	0.8	0.9	0.1	5.4	1.0	0.7
Delay (s)	55.2	39.7		46.6	51.5	13.3	45.1	52.6	32.7	56.7	54.3	0.7
Level of Service	E	D		D	D	B	D	D	C	E	D	A
Approach Delay (s)		44.3			43.1			42.9				26.4
Approach LOS		D			D			D				C

Intersection Summary			
HCM Average Control Delay	40.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

### HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	0	1291	378	183	957	0	366	0	297	10	110	438
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		0.95	1.00	1.00	0.95		0.97		1.00	1.00	1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	1.00	0.85
Fit Protected		1.00	1.00	0.95	1.00		0.95		1.00	1.00	1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583	1855	2707	2707
Fit Permitted		1.00	1.00	0.95	1.00		0.68		1.00	1.00	1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2450		1583	1855	2707	2707
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1331	390	189	987	0	377	0	306	10	113	452
RTOR Reduction (vph)	0	0	232	0	0	0	0	0	212	0	0	131
Lane Group Flow (vph)	0	1331	158	189	987	0	377	0	94	0	123	321
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%	2%	2%	5%
Turn Type		Perm	Prot				custom		custom	Split		Perm
Protected Phases		2	1	6						4	4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		36.0	36.0	10.0	50.0		13.0		27.0		13.6	13.6
Effective Green, g (s)		36.0	36.0	10.0	50.0		13.0		27.0		13.6	13.6
Actuated g/C Ratio		0.41	0.41	0.11	0.56		0.15		0.30		0.15	0.15
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)		1397	643	200	1997		359		482		285	416
v/s Ratio Prot		c0.39		c0.11	0.28						0.07	
v/s Ratio Perm			0.10				c0.15		0.06			c0.12
v/c Ratio		0.95	0.25	0.94	0.49		1.05		0.19		0.43	0.77
Uniform Delay, d1		25.5	17.4	39.0	11.7		37.8		22.8		34.0	36.0
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		14.3	0.2	47.7	0.2		61.2		0.2		1.1	8.6
Delay (s)		39.8	17.6	86.8	11.9		99.0		23.0		35.0	44.6
Level of Service		D	B	F	B		F		C		D	D
Approach Delay (s)		34.7			23.9			65.0				42.5
Approach LOS		C			C			E				D

Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	7	↑	↑↑
Volume (vph)	0	1151	269	187	1043	0	300	0	246	7	107	541
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1857	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2466		1583		1857	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1174	274	191	1064	0	306	0	251	7	109	552
RTOR Reduction (vph)	0	0	175	0	0	0	0	0	181	0	0	74
Lane Group Flow (vph)	0	1174	99	191	1064	0	306	0	70	0	116	478
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		18					4
Actuated Green, G (s)		31.1	31.1	8.0	43.1		12.0		24.0		19.4	19.4
Effective Green, g (s)		31.1	31.1	8.0	43.1		12.0		24.0		19.4	19.4
Actuated g/C Ratio		0.36	0.36	0.09	0.50		0.14		0.28		0.22	0.22
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)		1236	569	164	1763		342		439		416	607
v/s Ratio Prot		c0.34		c0.11	0.30						0.06	
v/s Ratio Perm			0.06				c0.12		0.04			c0.18
v/c Ratio		0.95	0.17	1.16	0.60		0.89		0.16		0.28	0.79
Uniform Delay, d1		26.9	18.9	39.2	15.6		36.6		23.6		27.8	31.6
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		15.0	0.1	121.4	0.6		24.3		0.2		0.4	6.7
Delay (s)		41.9	19.1	160.7	16.2		61.0		23.8		28.1	38.3
Level of Service		D	B	F	B		E		C		C	D
Approach Delay (s)		37.6			38.2		44.2				36.6	
Approach LOS		D			D		D				D	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	10	↑	↑↑
Volume (vph)	0	1123	384	186	764	0	371	0	301	10	112	393
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2448		1583		1855	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1146	392	190	780	0	379	0	307	10	114	401
RTOR Reduction (vph)	0	0	241	0	0	0	0	0	215	0	0	150
Lane Group Flow (vph)	0	1146	151	190	780	0	379	0	92	0	124	251
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases		2			8		18					4
Actuated Green, G (s)		30.8	30.8	8.0	42.8		12.0		24.0		13.2	13.2
Effective Green, g (s)		30.8	30.8	8.0	42.8		12.0		24.0		13.2	13.2
Actuated g/C Ratio		0.39	0.39	0.10	0.53		0.15		0.30		0.16	0.16
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)		1324	609	177	1893		367		475		306	447
v/s Ratio Prot		c0.33		c0.11	0.22						0.07	
v/s Ratio Perm			0.10				c0.15		0.06			c0.09
v/c Ratio		0.87	0.25	1.07	0.41		1.03		0.19		0.41	0.56
Uniform Delay, d1		22.7	16.7	36.0	11.1		34.0		20.8		29.9	30.7
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		6.2	0.2	88.5	0.1		55.7		0.2		0.9	1.6
Delay (s)		28.9	16.9	124.5	11.2		89.7		21.0		30.8	32.3
Level of Service		C	B	F	B		F		C		C	C
Approach Delay (s)		25.8			33.4		58.9				32.0	
Approach LOS		C			C		E				C	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

### HCM Signalized Intersection Capacity Analysis

#### 5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕	↔	↔↔	↕↕	↔	↔	↕	↔	↔↔	↕	↔↔
Volume (vph)	635	1153	40	107	627	601	74	148	168	654	108	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		4.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3418		3433	3438	1544	1770	1863	1532	3433	1863	1550
Fit Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3418		3433	3438	1544	1770	1863	1532	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	648	1177	41	109	640	613	76	151	171	667	110	309
RTOR Reduction (vph)	0	3	0	0	0	137	0	0	10	0	0	0
Lane Group Flow (vph)	648	1215	0	109	640	476	76	151	161	667	110	309
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot	pm+ov	Split		pm+ov	Split			Free
Protected Phases	5	2		1	6	4	8	8	1	4	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	15.5	29.0		8.1	21.6	43.0	15.0	15.0	23.1	21.4	21.4	90.0
Effective Green, g (s)	16.0	30.0		8.1	21.6	43.0	15.0	15.0	23.1	21.4	21.4	90.0
Actuated g/C Ratio	0.18	0.33		0.09	0.24	0.48	0.17	0.17	0.26	0.24	0.24	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	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)	610	1139		309	825	738	295	311	461	816	443	1550
v/s Ratio Prot	c0.19	c0.36		0.03	0.19	0.15	0.04	c0.08	0.03	c0.19	0.06	
v/s Ratio Perm						0.15			0.07			0.20
v/c Ratio	1.06	1.07		0.35	0.78	0.65	0.26	0.49	0.35	0.82	0.25	0.20
Uniform Delay, d1	37.0	30.0		38.5	31.9	17.7	32.7	34.0	27.3	32.5	27.8	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
Incremental Delay, d2	54.1	46.5		0.7	7.1	1.9	0.5	1.2	0.5	6.4	0.3	0.3
Delay (s)	91.1	76.5		39.2	39.0	19.7	33.1	35.2	27.8	38.8	28.1	0.3
Level of Service	F	E		D	D	B	C	D	C	D	C	A
Approach Delay (s)		81.6			30.3			31.6				26.8
Approach LOS		F			C			C				C
<b>Intersection Summary</b>												
HCM Average Control Delay	49.9		HCM Level of Service				D					
HCM Volume to Capacity ratio	0.87											
Actuated Cycle Length (s)	90.0				Sum of lost time (s)				11.5			
Intersection Capacity Utilization	85.2%		ICU Level of Service				E					
Analysis Period (min)	15											
c Critical Lane Group												

### HCM Signalized Intersection Capacity Analysis

#### 7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↕↕	↕↕	↕↕	↕↕	↕↕	↕↕	↕↕	↕↕	↕↕	↕↕
Volume (vph)	0	1698	107	121	1136	0	265	0	189	6	37	216
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Fit Protected		1.00	1.00	0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1850	2707
Fit Permitted		1.00	1.00	0.95	1.00		0.73		1.00		0.99	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2632		1583		1850	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1733	109	123	1159	0	270	0	193	6	38	220
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	171	0	0	152
Lane Group Flow (vph)	0	1733	62	123	1159	0	270	0	22	0	44	68
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases			2				8		8			4
Actuated Green, G (s)		51.0	51.0	10.2	65.2		11.0		11.0		10.2	10.2
Effective Green, g (s)		51.0	51.0	10.2	65.2		11.0		11.0		10.2	10.2
Actuated g/C Ratio		0.52	0.52	0.10	0.66		0.11		0.11		0.10	0.10
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)		1782	820	183	2345		294		177		192	281
v/s Ratio Prot		c0.50		c0.07	0.33						0.02	
v/s Ratio Perm			0.04				c0.10		0.01			c0.02
v/c Ratio		0.97	0.08	0.67	0.49		0.92		0.12		0.23	0.24
Uniform Delay, d1		23.0	11.9	42.5	8.3		43.3		39.4		40.5	40.5
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		15.2	0.0	9.3	0.2		31.7		0.3		0.6	0.4
Delay (s)		38.3	11.9	51.8	8.5		74.9		39.7		41.1	41.0
Level of Service		D	B	D	A		E		D		D	D
Approach Delay (s)		36.7			12.6		60.2				41.0	
Approach LOS		D			B		E				D	
<b>Intersection Summary</b>												
HCM Average Control Delay	31.8		HCM Level of Service				C					
HCM Volume to Capacity ratio	0.84											
Actuated Cycle Length (s)	98.4				Sum of lost time (s)				16.0			
Intersection Capacity Utilization	77.9%		ICU Level of Service				D					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

18: Mt. Hermon Road & Washington Mutual Access-Project Access

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	12	1568	22	162	782	34	2	0	111	46	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583		1770	1583		1770	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.73	1.00		0.76	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583		1352	1583		1409	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	1651	23	171	823	36	2	0	117	48	0	6
RTOR Reduction (vph)	0	1	0	0	0	15	0	0	92	0	0	5
Lane Group Flow (vph)	13	1673	0	171	823	21	0	2	25	0	48	1
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases						8	2		2		6	6
Actuated Green, G (s)	4.0	40.0		10.0	46.0	46.0	17.0	17.0	17.0	17.0	17.0	17.0
Effective Green, g (s)	4.0	40.0		10.0	46.0	46.0	17.0	17.0	17.0	17.0	17.0	17.0
Actuated g/C Ratio	0.05	0.50		0.12	0.58	0.58	0.21	0.21	0.21	0.21	0.21	0.21
Clearance Time (s)	5.0	4.0		5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	89	1766		221	2035	910	287	336	299	336	299	336
v/s Ratio Prot	0.01	c0.47		c0.10	0.23							
v/s Ratio Perm						0.01	0.00	0.02		c0.03	0.00	
v/c Ratio	0.15	0.95		0.77	0.40	0.02	0.01	0.07		0.16	0.00	
Uniform Delay, d1	36.4	19.0		33.9	9.4	7.3	24.8	25.2		25.7	24.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	12.1		22.8	0.6	0.0	0.0	0.4		1.1	0.0	
Delay (s)	39.8	31.1		56.7	10.0	7.4	24.9	25.6		26.8	24.8	
Level of Service	D	C		E	B	A	C	C		C	C	
Approach Delay (s)		31.2			17.7		25.6			26.6		
Approach LOS		C			B		C			C		

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Mt. Hermon Road & Kings Village Road

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	167	1016	4	125	1616	269	39	23	84	319	24	315
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	2.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.86	0.86
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3437		1770	3438	1583		1806	1583	1770	1603	1603
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.53	1.00	0.71	1.00	1.00
Satd. Flow (perm)	1770	3437		1770	3438	1583		989	1583	1331	1603	1603
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	1069	4	132	1701	283	41	24	88	336	25	332
RTOR Reduction (vph)	0	1	0	0	0	139	0	0	65	0	152	0
Lane Group Flow (vph)	176	1072	0	132	1701	144	0	65	23	336	205	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8		8	4		4
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	9.7	43.6		11.1	45.0	45.0	23.3	23.3	23.3	23.3	23.3	23.3
Effective Green, g (s)	9.7	43.6		11.1	45.0	45.0	23.3	23.3	23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.11	0.48		0.12	0.50	0.50	0.26	0.26	0.28	0.28	0.26	0.26
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)	191	1665		218	1719	792	256	410	374	415	299	415
v/s Ratio Prot	c0.10	0.31		0.07	c0.49					0.13		
v/s Ratio Perm						0.09	0.07	0.01	c0.25			
v/c Ratio	0.92	0.64		0.61	0.99	0.18	0.25	0.06	0.90	0.49		
Uniform Delay, d1	39.8	17.4		37.4	22.3	12.4	26.5	25.1	31.1	28.3		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	43.3	1.9		4.7	19.4	0.5	0.5	0.1	23.2	0.9		
Delay (s)	83.1	19.3		42.1	41.6	12.9	27.0	25.1	54.4	29.3		
Level of Service	F	B		D	D	B	C	C	D	C		
Approach Delay (s)		28.3			37.8		25.9		41.4			
Approach LOS		C			D		C		D			

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	
Volume (vph)	598	1036	110	241	1493	491	161	109	143	574	119	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		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		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		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	0.95	1.00	1.00
Satd. Flow (prot)	3433	3376		3433	3438	1504	1770	1863	1542	3433	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3376		3433	3438	1504	1770	1863	1542	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	610	1057	112	246	1523	501	164	111	146	586	121	669
RTOR Reduction (vph)	0	6	0	0	0	76	0	0	98	0	0	0
Lane Group Flow (vph)	610	1163	0	246	1523	425	164	111	48	586	121	669
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot	custom	Prot	pm+ov	Prot		Free		
Protected Phases	5!	2!		1!	6!	4	5!	8	1!	4		
Permitted Phases						6		8				Free
Actuated Green, G (s)	28.5	53.9		25.9	51.3	68.2	28.5	16.8	42.7	25.9	16.9	130.0
Effective Green, g (s)	28.5	53.9		25.9	51.8	68.2	28.5	16.8	42.7	25.9	16.9	130.0
Actuated g/C Ratio	0.22	0.41		0.20	0.40	0.52	0.22	0.13	0.33	0.20	0.13	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	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)	753	1400		684	1370	789	388	241	554	684	242	1550
v/s Ratio Prot	c0.18	0.34		0.07	c0.44	c0.07	0.09	0.06	0.02	0.17	0.06	
v/s Ratio Perm						0.21			0.01			c0.43
v/c Ratio	0.81	0.83		0.36	1.11	0.54	0.42	0.46	0.09	0.86	0.50	0.43
Uniform Delay, d1	48.2	34.0		44.9	39.1	20.5	43.7	52.4	30.2	50.3	52.6	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
Incremental Delay, d2	6.6	5.9		0.3	61.0	0.7	0.7	1.4	0.1	10.3	1.6	0.9
Delay (s)	54.8	39.8		45.2	100.1	21.2	44.4	53.8	30.2	60.6	54.2	0.9
Level of Service	D	D		D	F	C	D	D	C	E	D	A
Approach Delay (s)		45.0			76.8			42.0				31.0
Approach LOS		D			E			D				C

Intersection Summary

HCM Average Control Delay	53.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	0	1328	269	187	1171	0	300	0	246	7	107	576
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1857	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2466		1583		1857	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1355	274	191	1195	0	306	0	251	7	109	588
RTOR Reduction (vph)	0	0	164	0	0	0	0	0	176	0	0	91
Lane Group Flow (vph)	0	1355	110	191	1195	0	306	0	75	0	116	497
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		36.0	36.0	10.0	50.0		12.9		26.9		15.0	15.0
Effective Green, g (s)		36.0	36.0	10.0	50.0		12.9		26.9		15.0	15.0
Actuated g/C Ratio		0.40	0.40	0.11	0.56		0.14		0.30		0.17	0.17
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)		1377	634	197	1968		354		474		310	452
v/s Ratio Prot		c0.39		c0.11	0.34						0.06	
v/s Ratio Perm			0.07				c0.12		0.05			c0.18
v/c Ratio		0.98	0.17	0.97	0.61		0.86		0.16		0.37	1.10
Uniform Delay, d1		26.7	17.4	39.8	13.4		37.6		23.2		33.3	37.5
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		20.3	0.1	54.6	0.5		19.1		0.2		0.8	72.3
Delay (s)		47.0	17.5	94.4	13.9		56.8		23.3		34.0	109.7
Level of Service		D	B	F	B		E		C		C	F
Approach Delay (s)		42.0			25.0			41.7				97.2
Approach LOS		D			C			D				F

Intersection Summary

HCM Average Control Delay	45.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 18: Mt. Hermon Road & Washington Mutual Access-Project Access

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	29	1094	45	294	1799	86	13	0	184	125	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frnt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3518		1770	3539	1583		1770	1583		1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.64	1.00		0.75	1.00
Satd. Flow (perm)	1770	3518		1770	3539	1583		1196	1583		1394	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	1152	47	309	1894	91	14	0	194	132	0	18
RTOR Reduction (vph)	0	4	0	0	0	37	0	0	153	0	0	14
Lane Group Flow (vph)	31	1195	0	309	1894	54	0	14	41	0	132	4
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	1.6	31.6		15.2	45.2	45.2		16.1	16.1		16.1	16.1
Effective Green, g (s)	1.6	31.6		15.2	45.2	45.2		16.1	16.1		16.1	16.1
Actuated g/C Ratio	0.02	0.42		0.20	0.60	0.60		0.21	0.21		0.21	0.21
Clearance Time (s)	5.0	4.0		5.0	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
Lane Grp Cap (vph)	37	1465		354	2108	943		254	336		296	336
v/s Ratio Prot	0.02	0.34		c0.17	c0.54							
v/s Ratio Perm					0.03		0.01	0.03		c0.09	0.00	
v/c Ratio	0.84	0.82		0.87	0.90	0.06		0.06	0.12		0.45	0.01
Uniform Delay, d1	37.0	19.6		29.4	13.4	6.4		23.8	24.2		26.0	23.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	84.7	3.6		20.4	5.6	0.0		0.4	0.7		1.1	0.0
Delay (s)	121.7	23.2		49.8	18.9	6.5		24.2	24.9		27.1	23.6
Level of Service	F	C		D	B	A		C	C		C	C
Approach Delay (s)		25.7			22.6			24.9			26.7	
Approach LOS		C			C			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		23.8			HCM Level of Service				C			
HCM Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		75.9			Sum of lost time (s)				13.0			
Intersection Capacity Utilization		77.5%			ICU Level of Service				D			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	589	1237	123	156	1369	431	162	102	142	461	92	593
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	1.00		1.00	0.97
Frnt, ped/bikes	1.00	0.99		1.00	1.00	0.95		1.00	1.00		0.97	1.00
Flnt, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frnt	1.00	0.99		1.00	1.00	0.85		1.00	1.00		0.85	1.00
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3380		3433	3438	1503		1770	1863		1539	1863
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3380		3433	3438	1503		1770	1863		1539	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	601	1262	126	159	1397	440	165	104	145	470	94	605
RTOR Reduction (vph)	0	5	0	0	0	79	0	0	101	0	0	0
Lane Group Flow (vph)	601	1383	0	159	1397	361	165	104	44	470	94	605
Confl. Peds. (#/hr)				30			30			30		30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		custom	Prot		pm+ov	Prot		Free
Protected Phases	5!	2!		1!	6!	4	5!	8	1!	1!	4	
Permitted Phases						6			8			Free
Actuated Green, G (s)	28.3	57.6		22.6	51.9	68.5	28.3	16.7	39.3	22.6	16.6	130.0
Effective Green, g (s)	28.3	57.6		22.6	52.4	68.5	28.3	16.7	39.3	22.6	16.6	130.0
Actuated g/C Ratio	0.22	0.44		0.17	0.40	0.53	0.22	0.13	0.30	0.17	0.13	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	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)	747	1498		597	1386	792	385	239	513	597	238	1550
v/s Ratio Prot	c0.18	0.41		0.05	c0.41	0.06	0.09	0.06	0.01	0.14	0.05	
v/s Ratio Perm						0.18			0.01			c0.39
v/c Ratio	0.80	0.92		0.27	1.01	0.46	0.43	0.44	0.09	0.79	0.39	0.39
Uniform Delay, d1	48.2	34.1		46.5	38.8	19.1	43.9	52.3	32.5	51.4	52.1	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
Incremental Delay, d2	6.3	11.0		0.2	26.1	0.4	0.8	1.3	0.1	6.8	1.1	0.7
Delay (s)	54.5	45.1		46.8	64.9	19.6	44.6	53.6	32.6	58.2	53.2	0.7
Level of Service	D	D		D	E	B	D	D	C	E	D	A
Approach Delay (s)		47.9			53.5			42.6			28.1	
Approach LOS		D			D			D			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		45.4			HCM Level of Service				D			
HCM Volume to Capacity ratio		0.75										
Actuated Cycle Length (s)		130.0			Sum of lost time (s)				8.0			
Intersection Capacity Utilization		84.5%			ICU Level of Service				E			
Analysis Period (min)		15										
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑↑
Volume (vph)	0	1346	384	186	999	0	371	0	301	10	112	457
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2448		1583		1855	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1373	392	190	1019	0	379	0	307	10	114	466
RTOR Reduction (vph)	0	0	233	0	0	0	0	0	212	0	0	121
Lane Group Flow (vph)	0	1373	159	190	1019	0	379	0	95	0	124	345
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2	1	6					4		4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		36.0	36.0	10.0	50.0		13.0		27.0		14.0	14.0
Effective Green, g (s)		36.0	36.0	10.0	50.0		13.0		27.0		14.0	14.0
Actuated g/C Ratio		0.40	0.40	0.11	0.56		0.15		0.30		0.16	0.16
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)		1391	640	199	1988		358		480		292	426
v/s Ratio Prot		c0.40		c0.11	0.29						0.07	
v/s Ratio Perm			0.10				c0.15		0.06			c0.13
v/c Ratio		0.99	0.25	0.95	0.51		1.06		0.20		0.42	0.81
Uniform Delay, d1		26.3	17.5	39.3	12.0		38.0		23.0		33.9	36.2
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		20.9	0.2	50.5	0.2		63.9		0.2		1.0	10.8
Delay (s)		47.1	17.7	89.8	12.2		101.9		23.2		34.9	47.0
Level of Service		D	B	F	B		F		C		C	D
Approach Delay (s)		40.6			24.4			66.7			44.5	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑↑	↑↑	↑	↑	↑	↑↑
Volume (vph)	38	2	23	515	50	228	19	1107	513	280	820	23
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	3.0	4.0	4.0	3.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	0.95	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		1778	1583	1681	1700	1583	1770	3539	1583	1770	3525	3525
Flt Permitted		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1778	1583	1681	1700	1583	1770	3539	1583	1770	3525	3525
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	2	24	542	53	240	20	1165	540	295	863	24
RTOR Reduction (vph)	0	0	22	0	0	192	0	0	324	0	2	0
Lane Group Flow (vph)	0	42	2	298	297	48	20	1165	216	295	885	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8		2				
Actuated Green, G (s)		5.6	5.6	16.2	16.2	16.2	3.0	33.7	33.7	15.2	45.9	
Effective Green, g (s)		5.6	5.6	16.2	16.2	17.2	3.0	33.7	34.7	15.2	45.9	
Actuated g/C Ratio		0.06	0.06	0.19	0.19	0.20	0.03	0.39	0.40	0.18	0.53	
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)	115	102	314	318	314	61	1376	634	310	1866		
v/s Ratio Prot	c0.02			c0.18	0.17		0.01	c0.33		c0.17	0.25	
v/s Ratio Perm		0.00				0.03			0.14			
v/c Ratio	0.37	0.02	0.95	0.93	0.15	0.33	0.85	0.34	0.95	0.47		
Uniform Delay, d1	38.8	38.0	34.8	34.7	28.7	40.9	24.1	18.1	35.4	12.8		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	2.0	0.1	37.0	33.4	0.2	3.1	5.0	0.3	38.2	0.9		
Delay (s)	40.8	38.0	71.8	68.2	28.9	44.0	29.2	18.4	73.6	13.7		
Level of Service	D	D	E	E	C	D	C	B	E	B		
Approach Delay (s)	39.8			58.2			26.0			28.6		
Approach LOS	D			E			C			D		

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑	7	↑	↑↑
Volume (vph)	0	840	269	187	872	0	300	0	246	7	106	455
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1857	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2468		1583		1857	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	857	274	191	890	0	306	0	251	7	108	464
RTOR Reduction (vph)	0	0	193	0	0	0	0	0	161	0	0	116
Lane Group Flow (vph)	0	857	81	191	890	0	306	0	90	0	115	348
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm		Prot	custom			custom	Split	Perm		
Protected Phases		2		1	6				4	4		
Permitted Phases		2				8		18			4	
Actuated Green, G (s)		23.9	23.9	11.0	38.9		13.7		28.7		15.8	15.8
Effective Green, g (s)		23.9	23.9	11.0	38.9		13.7		28.7		15.8	15.8
Actuated g/C Ratio		0.30	0.30	0.14	0.48		0.17		0.36		0.20	0.20
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)		1022	471	242	1712		421		565		365	532
v/s Ratio Prot		c0.25		c0.11	0.25						0.06	
v/s Ratio Perm			0.05			c0.12		0.06				c0.13
v/c Ratio		0.84	0.17	0.79	0.52		0.73		0.16		0.32	0.65
Uniform Delay, d1		26.4	20.9	33.6	14.3		31.6		17.6		27.7	29.8
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		6.1	0.2	15.6	0.3		6.2		0.1		0.5	2.9
Delay (s)		32.6	21.1	49.2	14.6		37.7		17.8		28.2	32.7
Level of Service		C	C	D	B		D		B		C	C
Approach Delay (s)		29.8		20.7			28.7		31.8			
Approach LOS		C		C			C		C			

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑↑	↑	↑	↑	↑
Volume (vph)	32	16	38	328	46	261	0	781	236	343	1162	0
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	3.0		4.0	3.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	0.95		0.95	1.00	1.00	1.00	0.95
Frt		1.00	0.85	1.00	0.89	0.85		1.00	0.85	1.00	1.00	1.00
Flt Protected		0.97	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1803	1583	1770	1581	1504		3539	1583	1770	3539	
Flt Permitted		0.97	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1803	1583	1770	1581	1504		3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	17	40	345	48	275	0	822	248	361	1223	0
RTOR Reduction (vph)	0	0	36	0	92	121	0	0	178	0	0	0
Lane Group Flow (vph)	0	51	4	345	74	36	0	822	70	361	1223	0
Turn Type	Split	Perm		Split	Perm		Prot	Perm		Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases		4			8			2				
Actuated Green, G (s)		7.6	7.6	18.5	18.5	18.5		22.8	22.8	19.4	46.2	
Effective Green, g (s)		7.6	7.6	18.5	18.5	19.5		22.8	23.8	19.4	46.2	
Actuated g/C Ratio		0.09	0.09	0.22	0.22	0.23		0.27	0.28	0.23	0.55	
Clearance Time (s)		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	
Lane Grp Cap (vph)	163	143	388	347	348		957	447	407	1940		
v/s Ratio Prot	c0.03			c0.19	0.05		c0.23			c0.20	0.35	
v/s Ratio Perm		0.00				0.02		0.04				
v/c Ratio	0.31	0.03	0.89	0.21	0.10		0.86	0.16	0.89	0.63		
Uniform Delay, d1	35.9	35.0	31.9	26.9	25.5		29.2	22.7	31.4	13.2		
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.1	0.1	21.1	0.3	0.1		7.8	0.2	20.1	1.6		
Delay (s)	37.0	35.0	53.0	27.2	25.7		37.0	22.9	51.5	14.7		
Level of Service	D	D	D	C	C		D	C	D	B		
Approach Delay (s)	36.1		40.2			33.7		23.1				
Approach LOS	D		D			C		C				

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

### HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑		↑↑		↑		↑	↑↑
Volume (vph)	0	1111	384	186	759	0	371	0	301	10	111	382
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2450		1583		1855	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1134	392	190	774	0	379	0	307	10	113	390
RTOR Reduction (vph)	0	0	270	0	0	0	0	0	192	0	0	135
Lane Group Flow (vph)	0	1134	122	190	774	0	379	0	115	0	123	255
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm		Prot	custom			custom	Split		Perm	
Protected Phases		2		1	6					4	4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		25.0	25.0	11.0	40.0		15.0		30.0		13.3	13.3
Effective Green, g (s)		25.0	25.0	11.0	40.0		15.0		30.0		13.3	13.3
Actuated g/C Ratio		0.31	0.31	0.14	0.50		0.19		0.37		0.17	0.17
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)		1070	493	242	1763		458		591		307	448
v/s Ratio Prot		c0.33		c0.11	0.22						0.07	
v/s Ratio Perm			0.08				c0.15		0.07			c0.09
v/c Ratio		1.06	0.25	0.79	0.44		0.83		0.19		0.40	0.57
Uniform Delay, d1		27.6	20.6	33.5	12.9		31.4		17.0		29.9	30.9
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		44.8	0.3	15.3	0.2		11.7		0.2		0.9	1.7
Delay (s)		72.5	20.9	48.8	13.1		43.1		17.1		30.8	32.5
Level of Service		E	C	D	B		D		B		C	C
Approach Delay (s)		59.2			20.2			31.5			32.1	
Approach LOS		E			C			C			C	

#### Intersection Summary

HCM Average Control Delay	40.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	80.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

### HCM Signalized Intersection Capacity Analysis

10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑↑	↑↑	↑	↑	↑	↑
Volume (vph)	38	2	23	515	50	228	19	1144	513	280	858	23
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	3.0	4.0	4.0	3.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
Flt Protected		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1778	1583	1681	1700	1583	1770	3539	1583	1770	3525	
Flt Permitted		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1778	1583	1681	1700	1583	1770	3539	1583	1770	3525	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	2	24	542	53	240	20	1204	540	295	903	24
RTOR Reduction (vph)	0	0	22	0	0	193	0	0	321	0	2	0
Lane Group Flow (vph)	0	42	2	298	297	47	20	1204	219	295	925	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8		2				
Actuated Green, G (s)		5.6	5.6	16.1	16.1	16.1	3.0	34.3	34.3	15.1	46.4	
Effective Green, g (s)		5.6	5.6	16.1	16.1	17.1	3.0	34.3	35.3	15.1	46.4	
Actuated g/C Ratio		0.06	0.06	0.18	0.18	0.20	0.03	0.39	0.41	0.17	0.53	
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)	114	102	311	314	311	61	1394	642	307	1878		
v/s Ratio Prot		c0.02		c0.18	0.17		0.01	c0.34		c0.17	0.26	
v/s Ratio Perm			0.00			0.03			0.14			
v/c Ratio		0.37	0.02	0.96	0.95	0.15	0.33	0.86	0.34	0.96	0.49	
Uniform Delay, d1		39.1	38.2	35.2	35.1	29.0	41.1	24.3	17.9	35.7	12.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.0	0.1	39.4	36.3	0.2	3.1	5.8	0.3	40.7	0.9	
Delay (s)		41.1	38.2	74.6	71.4	29.2	44.2	30.1	18.2	76.4	13.8	
Level of Service		D	D	E	E	C	D	C	B	E	B	
Approach Delay (s)		40.0			60.4			26.6			28.9	
Approach LOS		D			E			C			C	

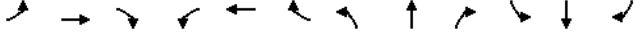
#### Intersection Summary

HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 18: Mt. Hermon Road & Washington Mutual Access-Project Access

8/5/2008



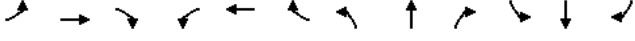
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	12	1575	22	162	791	38	2	0	111	52	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583		1770	1583		1770	1583
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.72	1.00		0.76	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583		1343	1583		1409	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	1658	23	171	833	40	2	0	117	55	0	6
RTOR Reduction (vph)	0	1	0	0	0	17	0	0	92	0	0	5
Lane Group Flow (vph)	13	1680	0	171	833	23	0	2	25	0	55	1
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases						8	2		2		6	6
Actuated Green, G (s)	4.0	40.0		10.0	46.0	46.0	17.0	17.0	17.0	17.0	17.0	17.0
Effective Green, g (s)	4.0	40.0		10.0	46.0	46.0	17.0	17.0	17.0	17.0	17.0	17.0
Actuated g/C Ratio	0.05	0.50		0.12	0.58	0.58	0.21	0.21	0.21	0.21	0.21	0.21
Clearance Time (s)	5.0	4.0		5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	89	1766		221	2035	910	285	336	299	336		336
v/s Ratio Prot	0.01	c0.48		c0.10	0.24							0.00
v/s Ratio Perm						0.01	0.00	0.02		c0.04		0.00
v/c Ratio	0.15	0.95		0.77	0.41	0.03	0.01	0.07		0.18		0.00
Uniform Delay, d1	36.4	19.1		33.9	9.4	7.3	24.8	25.2		25.8		24.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	3.4	12.6		22.8	0.6	0.1	0.0	0.4		1.4		0.0
Delay (s)	39.8	31.7		56.7	10.1	7.4	24.9	25.6		27.2		24.8
Level of Service	D	C		E	B	A	C	C		C		C
Approach Delay (s)		31.8			17.6		25.6			26.9		
Approach LOS		C			B		C			C		

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3: Mt. Hermon Road & Kings Village Road

8/5/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	167	1053	4	125	1650	281	39	23	84	334	24	315
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	2.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.86	0.86
Fit Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3437		1770	3438	1583		1806	1583	1770	1603	1603
Fit Permitted	0.95	1.00		0.95	1.00	1.00		0.54	1.00	0.71	1.00	1.00
Satd. Flow (perm)	1770	3437		1770	3438	1583		1009	1583	1331	1603	1603
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	1108	4	132	1737	296	41	24	88	352	25	332
RTOR Reduction (vph)	0	1	0	0	0	143	0	0	65	0	150	0
Lane Group Flow (vph)	176	1111	0	132	1737	154	0	65	23	352	207	0
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6		8	8	8	4		4
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	9.3	43.2		11.1	45.0	45.0	23.7	23.7	23.7	23.7		23.7
Effective Green, g (s)	9.3	43.2		11.1	45.0	45.0	23.7	23.7	23.7	25.7		23.7
Actuated g/C Ratio	0.10	0.48		0.12	0.50	0.50	0.26	0.26	0.29	0.26		0.26
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	1650		218	1719	792	266	417	380	422		422
v/s Ratio Prot	c0.10	0.32		0.07	c0.51					0.13		
v/s Ratio Perm						0.10	0.06	0.01	c0.26			
v/c Ratio	0.96	0.67		0.61	1.01	0.19	0.24	0.06	0.93	0.49		
Uniform Delay, d1	40.2	18.0		37.4	22.5	12.5	26.1	24.8	31.2	28.0		
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	55.1	2.2		4.7	24.3	0.5	0.5	0.1	28.1	0.9		0.9
Delay (s)	95.3	20.2		42.1	46.8	13.0	26.6	24.8	59.3	28.9		28.9
Level of Service	F	C		D	D	B	C	C	E	C		C
Approach Delay (s)		30.5			41.9		25.6		44.0			
Approach LOS		C			D		C		D			

Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	649	1037	110	241	1492	238	161	109	143	267	119	703
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		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	0.95	1.00	1.00
Satd. Flow (prot)	3433	3376		3433	3438	1505	1770	1863	1526	3433	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3376		3433	3438	1505	1770	1863	1526	3433	1863	1550
Peak-hour factor, PHF	0.98	0.99	0.98	0.98	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	662	1047	112	246	1507	243	164	111	146	272	121	717
RTOR Reduction (vph)	0	5	0	0	83	0	0	111	0	0	0	0
Lane Group Flow (vph)	662	1154	0	246	1507	160	164	111	35	272	121	717
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot	custom	Prot		pm+ov	Prot			Free
Protected Phases	5!	2!		1!	6!	4	5!	8	1!	4		
Permitted Phases						6			8			Free
Actuated Green, G (s)	30.0	65.6		14.2	49.8	66.7	30.0	16.8	31.0	14.2	16.9	130.0
Effective Green, g (s)	30.0	65.6		14.2	50.8	66.7	30.0	16.8	31.0	14.2	16.9	130.0
Actuated g/C Ratio	0.23	0.50		0.11	0.39	0.51	0.23	0.13	0.24	0.11	0.13	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	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)	792	1704		375	1343	772	408	241	411	375	242	1550
v/s Ratio Prot	c0.19	0.34		0.07	c0.44	0.03	0.09	0.06	0.01	0.08	0.06	
v/s Ratio Perm						0.08			0.01			c0.46
v/c Ratio	0.84	0.68		0.66	1.12	0.21	0.40	0.46	0.08	0.73	0.50	0.46
Uniform Delay, d1	47.7	24.2		55.6	39.6	17.2	42.4	52.4	38.5	56.0	52.6	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
Incremental Delay, d2	7.6	2.2		4.1	65.3	0.1	0.7	1.4	0.1	6.8	1.6	1.0
Delay (s)	55.3	26.4		59.7	104.9	17.4	43.0	53.8	38.6	62.8	54.2	1.0
Level of Service	E	C		E	F	B	D	D	D	E	D	A
Approach Delay (s)		36.9			88.7			44.3			22.0	
Approach LOS		D			F			D			C	

Intersection Summary

HCM Average Control Delay	53.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1017	269	187	1000	1900	0	300	0	246	7	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		0.95	1.00	1.00	0.95	0.97		1.00		1.00	1.00	0.88
Frt		1.00	0.85	1.00	1.00	1.00		0.85		1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95		1.00		1.00	1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539	3433		1583		1857	2707	2707
Flt Permitted		1.00	1.00	0.95	1.00	0.68		1.00		1.00	1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539	2468		1583		1857	2707	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1038	274	191	1020	0	306	0	251	7	108	500
RTOR Reduction (vph)	0	0	175	0	0	0	0	0	162	0	0	151
Lane Group Flow (vph)	0	1038	99	191	1020	0	306	0	89	0	115	349
Heavy Vehicles (%)		2%	5%	2%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		Perm		Prot		custom		custom		Split		Perm
Protected Phases		2		1		6				4		4
Permitted Phases			2				8		18			4
Actuated Green, G (s)		30.6	30.6	11.6	46.2		14.3		29.9		12.1	12.1
Effective Green, g (s)		30.6	30.6	11.6	46.2		14.3		29.9		12.1	12.1
Actuated g/C Ratio		0.36	0.36	0.14	0.55		0.17		0.35		0.14	0.14
Clearance Time (s)		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
Lane Grp Cap (vph)		1244	573	243	1933		417		559		266	387
v/s Ratio Prot		c0.30		c0.11	0.29						0.06	
v/s Ratio Perm			0.06				c0.12		0.06			c0.13
v/c Ratio		0.83	0.17	0.79	0.53		0.73		0.16		0.43	0.90
Uniform Delay, d1		24.7	18.4	35.3	12.2		33.3		18.7		33.1	35.7
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		5.0	0.1	15.3	0.3		6.6		0.1		1.1	23.5
Delay (s)		29.7	18.5	50.6	12.5		39.9		18.9		34.2	59.2
Level of Service		C	B	D	B		D		B		C	E
Approach Delay (s)		27.3			18.5		30.4				54.5	
Approach LOS		C			B		C				D	

Intersection Summary

HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
10: Civic Center Drive-Disc Drive & Scotts Valley Drive

8/5/2008

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↖	↗	↖	↗
Volume (vph)	32	16	38	328	46	261	0	883	236	343	1255	0
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	3.0	4.0	3.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95	0.95
Frt	1.00	0.85	1.00	0.89	0.85	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.97	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1803	1583	1770	1581	1504	3539	1583	1770	3539	1770	3539	3539
Flt Permitted	0.97	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1803	1583	1770	1581	1504	3539	1583	1770	3539	1770	3539	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	17	40	345	48	275	0	929	248	361	1321	0
RTOR Reduction (vph)	0	0	36	0	93	122	0	0	173	0	0	0
Lane Group Flow (vph)	0	51	4	345	73	35	0	929	75	361	1321	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		7.8	7.8	18.2	18.2	18.2		25.0	25.0	19.1	48.1	
Effective Green, g (s)		7.8	7.8	18.2	18.2	19.2		25.0	26.0	19.1	48.1	
Actuated g/C Ratio		0.09	0.09	0.21	0.21	0.22		0.29	0.30	0.22	0.56	
Clearance Time (s)		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	
Lane Grp Cap (vph)		163	143	374	334	335		1028	478	393	1977	
v/s Ratio Prot		c0.03		c0.19	0.05			c0.26		c0.20	0.37	
v/s Ratio Perm			0.00			0.02			0.05			
v/c Ratio		0.31	0.03	0.92	0.22	0.10		0.90	0.16	0.92	0.67	
Uniform Delay, d1		36.6	35.7	33.3	28.1	26.6		29.4	22.0	32.7	13.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1	0.1	27.8	0.3	0.1		11.0	0.2	25.9	1.8	
Delay (s)		37.7	35.8	61.1	28.4	26.7		40.4	22.2	58.6	15.2	
Level of Service		D	D	E	C	C		D	C	E	B	
Approach Delay (s)		36.9			44.9			36.6			24.5	
Approach LOS		D			D			D			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			32.5				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			86.1			Sum of lost time (s)		16.0				
Intersection Capacity Utilization			82.5%			ICU Level of Service		E				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
18: Mt. Hermon Road & Washington Mutual Access-Project Access

8/5/2008

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Movement													
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↖	↗	↖	↗	
Volume (vph)	29	1114	45	294	1821	98	13	0	184	142	0	17	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99	1.00	1.00	0.85	1.00	0.85	1.00	0.85	1.00	0.85	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3519	1770	3539	1583	1770	1583	1770	1583	1770	1583	1583	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00	0.61	1.00	0.75	1.00	0.75	1.00	
Satd. Flow (perm)	1770	3519	1770	3539	1583	1770	1583	1131	1583	1770	1583	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	31	1173	47	309	1917	103	14	0	194	149	0	18	
RTOR Reduction (vph)	0	4	0	0	45	0	0	153	0	0	0	14	
Lane Group Flow (vph)	31	1216	0	309	1917	58	0	14	41	0	149	4	
Turn Type	Prot		Prot		Perm	Perm	Prot		Perm	Prot		Perm	
Protected Phases	7	4		3	8		2		2	6		6	
Permitted Phases					8		2		2	6		6	
Actuated Green, G (s)	4.0	30.0		16.0	42.0	42.0		16.0	16.0	16.0		16.0	
Effective Green, g (s)	4.0	30.0		16.0	42.0	42.0		16.0	16.0	16.0		16.0	
Actuated g/C Ratio	0.05	0.40		0.21	0.56	0.56		0.21	0.21	0.21		0.21	
Clearance Time (s)	5.0	4.0		5.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Grp Cap (vph)	94	1408		378	1982	886		241	338	297		338	
v/s Ratio Prot	0.02	0.35		c0.17	c0.54								
v/s Ratio Perm					0.04			0.01	0.03			c0.11	0.00
v/c Ratio	0.33	0.86		0.82	0.97	0.07		0.06	0.12	0.50		0.01	
Uniform Delay, d1	34.2	20.6		28.1	15.8	7.5		23.5	23.8	26.0		23.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	9.1	7.3		17.6	13.8	0.1		0.5	0.7	5.9		0.1	
Delay (s)	43.4	27.9		45.7	29.7	7.7		24.0	24.6	31.9		23.3	
Level of Service	D	C		D	C	A		C	C	C		C	
Approach Delay (s)		28.3			30.8			24.5		31.0			
Approach LOS		C			C			C		C			
<b>Intersection Summary</b>													
HCM Average Control Delay			29.7				HCM Level of Service			C			
HCM Volume to Capacity ratio			0.87										
Actuated Cycle Length (s)			75.0			Sum of lost time (s)		13.0					
Intersection Capacity Utilization			79.0%			ICU Level of Service		D					
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

5: Mt. Hermon Road & Scotts Valley Drive-Whispering Pines Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	653	1238	123	156	1371	421	162	102	142	454	92	678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		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	0.95	1.00	1.00
Satd. Flow (prot)	3433	3380		3433	3438	1504	1770	1863	1539	3433	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3380		3433	3438	1504	1770	1863	1539	3433	1863	1550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	666	1263	126	159	1399	430	165	104	145	463	94	692
RTOR Reduction (vph)	0	6	0	0	88	0	0	101	0	0	0	0
Lane Group Flow (vph)	666	1383	0	159	1399	342	165	104	44	463	94	692
Confl. Peds. (#/hr)			30			30			30			30
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot	custom	Prot	pm+ov	Prot			Free	
Protected Phases	5!	2!		1!	6!	4	5!	8	1!	4		
Permitted Phases						6		8				Free
Actuated Green, G (s)	30.0	57.5		22.7	50.2	66.8	30.0	16.7	39.4	22.7	16.6	130.0
Effective Green, g (s)	30.0	57.5		22.7	51.2	66.8	30.0	16.7	39.4	22.7	16.6	130.0
Actuated g/C Ratio	0.23	0.44		0.17	0.39	0.51	0.23	0.13	0.30	0.17	0.13	1.00
Clearance Time (s)	4.0	4.5		4.0	4.5	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)	792	1495		599	1354	773	408	239	514	599	238	1550
v/s Ratio Prot	c0.19	0.41		0.05	c0.41	0.06	0.09	0.06	0.01	0.13	0.05	
v/s Ratio Perm						0.17			0.01			c0.45
v/c Ratio	0.84	0.93		0.27	1.03	0.44	0.40	0.44	0.09	0.77	0.39	0.45
Uniform Delay, d1	47.7	34.2		46.4	39.4	19.9	42.4	52.3	32.4	51.2	52.1	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
Incremental Delay, d2	8.0	11.2		0.2	33.4	0.4	0.7	1.3	0.1	6.2	1.1	0.9
Delay (s)	55.8	45.4		46.7	72.8	20.3	43.1	53.6	32.5	57.3	53.2	0.9
Level of Service	E	D		D	E	C	D	D	C	E	D	A
Approach Delay (s)		48.8			59.4			42.0				25.8
Approach LOS		D			E			D				C

Intersection Summary			
HCM Average Control Delay	46.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.  
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: Mt. Hermon Road & Hwy 17 SB Off Ramp-La Madrona Drive

8/5/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	0	1333	384	186	995	0	371	0	301	10	111	446
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
Lane Util. Factor		0.95	1.00	1.00	0.95		0.97		1.00		1.00	0.88
Frt		1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)		3438	1583	1770	3539		3433		1583		1855	2707
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00		1.00	1.00
Satd. Flow (perm)		3438	1583	1770	3539		2450		1583		1855	2707
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1360	392	190	1015	0	379	0	307	10	113	455
RTOR Reduction (vph)	0	0	240	0	0	0	0	0	171	0	0	134
Lane Group Flow (vph)	0	1360	152	190	1015	0	379	0	136	0	123	321
Heavy Vehicles (%)		2%	5%	2%	2%		2%		2%		2%	5%
Turn Type		Perm	Prot		custom		custom		Split		Perm	
Protected Phases		2		1	6				4		4	
Permitted Phases			2				8		18			4
Actuated Green, G (s)		34.0	34.0	11.7	49.7		15.7		31.4		12.0	12.0
Effective Green, g (s)		34.0	34.0	11.7	49.7		15.7		31.4		12.0	12.0
Actuated g/C Ratio		0.38	0.38	0.13	0.56		0.18		0.35		0.13	0.13
Clearance Time (s)		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
Lane Grp Cap (vph)		1308	602	232	1967		430		556		249	363
v/s Ratio Prot		c0.40		c0.11	0.29						0.07	
v/s Ratio Perm			0.10				c0.15		0.09			c0.12
v/c Ratio		1.04	0.25	0.82	0.52		0.88		0.24		0.49	0.88
Uniform Delay, d1		27.7	19.0	37.8	12.4		35.9		20.6		35.9	38.0
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		35.9	0.2	19.7	0.2		18.6		0.2		1.5	21.6
Delay (s)		63.6	19.2	57.5	12.6		54.6		20.8		37.4	59.6
Level of Service		E	B	E	B		D		C		D	E
Approach Delay (s)		53.6			19.7			39.5				54.9
Approach LOS		D			B			D				D

Intersection Summary			
HCM Average Control Delay	41.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	89.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

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Approved & Potential Projects Trip Generation

Trip Generation			7th Edition Rates																															
AREA	TAZ	Number of Units	Units	Land Use Number	Land Use No./Type	AM PEAK						PM PEAK						Weekday		Saturday Midday Peak						Saturday								
						Trip Rate per Unit	Number of Trips	In %	In Rate	In Trips	Out %	Out Rate	Out Trips	Trip Rate per Unit	Number of Trips	In %	In Rate	In Trips	Out %	Out Rate	Out Trips	Trip Rate per Unit	Total Trips	Trip Rate per Unit	Number of Trips	In %	In Rate	In Trips	Out %	Out Rate	Out Trips	Trip Rate per Unit	Total Trips	
B2		1	30	units	220	Apartment	0.51	15	20	0.10	3	80	0.41	12	0.62	19	65	0.40	12	35	0.22	7	6.72	202	0.52	16	50	0.26	8	50	0.26	8	6.39	192
C13		1	1	units	210	Single Family Detached Housing	0.75	1	25	0.19	0	75	0.56	1	1.01	1	63	0.64	1	37	0.37	0	9.57	10	0.94	1	54	0.51	1	46	0.43	0	10.1	10
		1				TOTAL		16		3				13		20		13		7		0	6.72	212		17		9		26		8	6.39	203
C7		2	1	units	210	Single Family Detached Housing	0.75	1	25	0.19	0	75	0.56	1	1.01	1	63	0.64	1	37	0.37	0	9.57	10	0.94	1	54	0.51	1	46	0.43	0	10.1	10
C16		2	8	units	210	Single Family Detached Housing	0.75	7	25	0.19	2	75	0.56	5	1.01	8	63	0.64	5	37	0.37	3	9.57	77	0.94	7	54	0.51	4	46	0.43	3	10.1	81
C9		2	41	units	210	Single Family Detached Housing	0.75	31	25	0.19	8	75	0.56	23	1.01	41	63	0.64	26	37	0.37	15	9.57	392	0.94	39	54	0.51	21	46	0.43	18	10.1	414
		2				TOTAL		39		10				29		50		32		18		0	9.57	479		47		26		21		21	505	
B8		3	2	units	210	Single Family Detached Housing	0.75	2	25	0.19	1	75	0.56	1	1.01	2	63	0.64	1	37	0.37	1	9.57	19	0.94	2	54	0.51	1	46	0.43	1	10.1	20
C3		3	3	units	210	Single Family Detached Housing	0.75	3	25	0.19	1	75	0.56	2	1.01	3	63	0.64	2	37	0.37	1	9.57	29	0.94	3	54	0.51	2	46	0.43	1	10.1	30
		3				TOTAL		5		2				3		5		3		2		2	9.57	48		5		3		2		2	51	
A4		4	6.3	kfsf	150	Warehouse	0.45	3	82	0.37	2	18	0.08	1	0.47	3	25	0.12	1	75	0.35	2	4.96	31	0.12	0	64	0.08	0	36	0.04	0	1.22	8
B10		4	1	units	210	Single Family Detached Housing	0.75	1	25	0.19	0	75	0.56	1	1.01	1	63	0.64	1	37	0.37	0	9.57	10	0.94	1	54	0.51	1	46	0.43	0	10.1	10
B14		4	1	units	210	Single Family Detached Housing	0.75	1	25	0.19	0	75	0.56	1	1.01	1	63	0.64	1	37	0.37	0	9.57	10	0.94	1	54	0.51	1	46	0.43	0	10.1	10
		4				TOTAL		5		2				3		5		3		2		2	9.57	51		2		2		0		0	29	
B7		5	1	units	210	Single Family Detached Housing	0.75	1	25	0.19	0	75	0.56	1	1.01	1	63	0.64	1	37	0.37	0	9.57	10	0.94	1	54	0.51	1	46	0.43	0	10.1	10
		5				TOTAL		1		0				1		1		1		0		0	9.57	10		1		1		0	0	10		
B12		6	94	dwellings	230	Residential Condominium/Townhome	0.44	41	17	0.07	7	83	0.37	34	0.52	49	67	0.35	33	33	0.17	16	5.86	551	0.47	44	54	0.25	24	46	0.22	20	5.67	533
B12		6	31.5	kfsf	814	Specialty Retail (am from 820)	1.03	33	61	0.63	20	39	0.40	13	2.71	86	44	1.19	38	56	1.52	48	44.32	1396	4.97	156	52	2.58	81	48	2.39	75	49.97	1574
		6				TOTAL		74		27				47		135		71		64		64	5.86	1947		200		105		95		2107		
C10		7	4.53	kfsf	814	Specialty Retail (am from 820)	1.03	5	61	0.63	3	39	0.40	2	2.71	12	44	1.19	5	56	1.52	7	44.32	201	4.97	23	52	2.58	12	48	2.39	11	49.97	226
C10		7	6.687	kfsf	814	Specialty Retail (am from 820)	1.03	7	61	0.63	4	39	0.40	3	2.71	18	44	1.19	8	56	1.52	10	44.32	296	4.97	33	52	2.58	17	48	2.39	16	49.97	334
		7				TOTAL		12		7				5		30		13		17		17	44.32	497		56		29		27		27	561	
A5		8	3	units	220	Apartment	0.51	2	20	0.10	1	80	0.41	1	0.62	2	65	0.40	1	35	0.22	1	6.72	20	0.52	2	50	0.26	1	50	0.26	1	6.39	19
		8				TOTAL		2		1				1		2		1		1		1	6.72	20		2		1		1		1	19	
A2		9	1.6	kfsf	814	Specialty Retail (am from 820)	1.03	2	61	0.63	1	39	0.40	1	2.71	4	44	1.19	2	56	1.52	2	44.32	71	4.97	8	52	2.58	4	48	2.39	4	49.97	80
A2		9	3	units	220	Apartment	0.51	2	20	0.10	1	80	0.41	1	0.62	2	65	0.40	1	35	0.22	1	6.72	20	0.52	2	50	0.26	1	50	0.26	1	6.39	19
		9				TOTAL		4		2				2		6		3		3		3	6.72	91		10		5		5		5	99	
B13		10	3	units	210	Single Family Detached Housing	0.75	3	25	0.19	1	75	0.56	2	1.01	3	63	0.64	2	37	0.37	1	9.57	29	0.94	3	54	0.51	2	46	0.43	1	10.1	30
		10				TOTAL		3		1				2		3		2		1		1	9.57	29		3		2		1		1	30	
A1		11	1	units	210	Single Family Detached Housing	0.75	1	25	0.19	0	75	0.56	1	1.01	1	63	0.64	1	37	0.37	0	9.57	10	0.94	1	54	0.51	1	46	0.43	0	10.1	10
B9		11	18.45	kfsf	110	General Light Industrial	0.92	17	88	0.81	15	12	0.11	2	0.98	18	12	0.12	2	88	0.86	16	6.97	129	0.14	2	47	0.81	1	53	0.11	1	1.32	24
C4		11	17	units	210	Single Family Detached Housing	0.75	13	25	0.19	3	75	0.56	10	1.01	17	63	0.64	11	37	0.37	6	9.57	163	0.94	16	54	0.51	9	46	0.43	7	10.1	172
		11				TOTAL		31		18				13		36		14		22		22	9.57	302		19		11		8		8	207	
B3		12	3	dwellings	230	Residential Condominium/Townhome	0.44	1	17	0.07	0	83	0.37	1	0.52	2	67	0.35	1	33	0.17	1	5.86	18	0.47	2	54	0.25	1	46	0.22	1	5.67	17
C1		12	6	dwellings	230	Residential Condominium/Townhome	0.44	3	17	0.07	1	83	0.37	2	0.52	3	67	0.35	2	33	0.17	1	5.86	35	0.47	3	54	0.25	2	46	0.22	1	5.67	34
C9		12	6	dwellings	230	Residential Condominium/Townhome	0.44	3	17	0.07	1	83	0.37	2	0.52	3	67	0.35	2	33	0.17	1	5.86	35	0.47	3	54	0.25	2	46	0.22	1	5.67	34
C11		12	6	dwellings	230	Residential Condominium/Townhome	0.44	3	17	0.07	1	83	0.37	2	0.52	3	67	0.35	2	33	0.17	1	5.86	35	0.47	3	54	0.25	2	46	0.22	1	5.67	34
C15		12	2	dwellings	230	Residential Condominium/Townhome	0.44	1	17	0.07	0	83	0.37	1	0.52	1	67	0.35	1	33	0.17	0	5.86	12	0.47	1	54	0.25	1	46	0.22	0	5.67	11
		12				TOTAL		11		3				8		12		8		4		4	5.86	135		12		8		4		4	130	
C12		13	5	dwellings	230	Residential Condominium/Townhome	0.44	2	17	0.07	0	83	0.37	2	0.52	3	67	0.35	2	33	0.17	1	5.86	29	0.47	2	54	0.25	1	46	0.22	1	5.67	28
		13				TOTAL		2		0				2		3		2		1		1	5.86	29		2		1		1		1	28	
B15		14	6.3	kfsf	814	Specialty Retail (am from 820)	1.03	6	61	0.63	3	39	0.40	3	2.71	18	44	1.19	8	56	1.52	10	44.32	279	4.97	31	52	2.58	16	48	2.39	15	49.97	315
		14				TOTAL		6		3				3		18		8		10		10	44.32	279		31		16		15		15	315	
C2		114	48	dwellings	230	Residential Condominium/Townhome	0.44																											



E10	26	5	dwelling	230	Residential Condominium/Townho	0.44	2	17	0.07	0	83	0.37	2	0.52	3	67	0.35	2	33	0.17	1	5.86	29	0.47	2	54	0.25	1	46	0.22	1	5.67	28
	26				TOTAL		17			4			13		20						7		222		17		9		8		214		
D2	27	23	ksf	814	Specialty Retail (am from 820)	1.03	23	61	0.63	14	39	0.40	9	2.71	62	44	1.19	27	56	1.52	35	44.32	1019	4.97	114	52	2.58	59	48	2.39	55	49.97	1149
	27				TOTAL		23			14			9		62			27			35		1019		114		59		55		1149		
E4	28	10	dwelling	230	Residential Condominium/Townho	0.44	5	17	0.07	1	83	0.37	4	0.52	5	67	0.35	3	33	0.17	2	5.86	59	0.47	5	54	0.25	3	46	0.22	2	5.67	57
E5	28	17	dwelling	230	Residential Condominium/Townho	0.44	7	17	0.07	1	83	0.37	6	0.52	9	67	0.35	6	33	0.17	3	5.86	100	0.47	8	54	0.25	4	46	0.22	4	5.67	96
E6	28	5	dwelling	230	Residential Condominium/Townho	0.44	2	17	0.07	0	83	0.37	2	0.52	3	67	0.35	2	33	0.17	1	5.86	29	0.47	2	54	0.25	1	46	0.22	1	5.67	28
E7	28	34	dwelling	230	Residential Condominium/Townho	0.44	15	17	0.07	3	83	0.37	12	0.52	18	67	0.35	12	33	0.17	6	5.86	199	0.47	16	54	0.25	9	46	0.22	7	5.67	193
E8	28	22	dwelling	230	Residential Condominium/Townho	0.44	10	17	0.07	2	83	0.37	8	0.52	12	67	0.35	8	33	0.17	4	5.86	129	0.47	11	54	0.25	6	46	0.22	5	5.67	125
	28				TOTAL		39			7			32		47			31		16		516		42		23		19		499			
E3	29	41	dwelling	230	Residential Condominium/Townho	0.44	18	17	0.07	3	83	0.37	15	0.52	21	67	0.35	14	33	0.17	7	5.86	240	0.47	19	54	0.25	10	46	0.22	9	5.67	232
	29				TOTAL		18			3			15		21			14		7		240		19		10		9		232			
E11	30	20	dwelling	230	Residential Condominium/Townho	0.44	9	17	0.07	2	83	0.37	7	0.52	10	67	0.35	7	33	0.17	3	5.86	117	0.47	9	54	0.25	5	46	0.22	4	5.67	113
E11	30	10.89	ksf	814	Specialty Retail (am from 820)	1.03	11	61	0.63	7	39	0.40	4	2.71	30	44	1.19	13	56	1.52	17	44.32	483	4.97	54	52	2.58	28	48	2.39	26	49.97	544
	30				TOTAL		20			9			11		40			20		20		600		63		33		30		658			