Appendix 4 Synchro Analysis Worksheets

Queues
Existing AM

1: Green Valley Rd & Sophia Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	7	619	36	178	1680	82	83	96	4
v/c Ratio	0.07	0.30	0.04	1.00	0.75	0.37	0.37	0.34	0.01
Control Delay	44.3	10.3	0.3	111.0	15.8	39.0	39.0	10.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	10.3	0.3	111.0	15.8	39.0	39.0	10.9	0.0
Queue Length 50th (ft)	3	68	0	92	250	42	42	0	0
Queue Length 95th (ft)	19	174	2	#245	521	77	78	27	0
Internal Link Dist (ft)		1395			1862		1185		889
Turn Bay Length (ft)	250		250	230		220		220	
Base Capacity (vph)	153	2235	936	178	2279	488	490	511	410
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.28	0.04	1.00	0.74	0.17	0.17	0.19	0.01

Intersection Summary

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

HCM 2010 Signalized Intersection Summary
Existing AM

1: Green Valley Rd & Sophia Pkwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	551	32	141	1327	0	122	3	73	0	0	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1624	1827	1696	1881	1863	1900	1900	1900	1827	1900	1900	1900
Adj Flow Rate, veh/h	7	619	36	178	1680	0	164	0	96	0	0	4
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.76	0.76	0.76	0.50	0.50	0.50
Percent Heavy Veh, %	17	4	12	1	2	2	0	0	4	0	0	0
Cap, veh/h	84	1915	779	205	2165	0	353	0	151	0	0	9
Arrive On Green	0.05	0.55	0.55	0.11	0.61	0.00	0.10	0.00	0.10	0.00	0.00	0.01
Sat Flow, veh/h	1547	3471	1411	1792	3632	0	3619	0	1553	0	0	1615
Grp Volume(v), veh/h	7	619	36	178	1680	0	164	0	96	0	0	4
Grp Sat Flow(s),veh/h/ln	1547	1736	1411	1792	1770	0	1810	0	1553	0	0	1615
Q Serve(g_s), s	0.3	7.1	0.9	7.2	25.7	0.0	3.1	0.0	4.4	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	7.1	0.9	7.2	25.7	0.0	3.1	0.0	4.4	0.0	0.0	0.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	84	1915	779	205	2165	0	353	0	151	0	0	9
V/C Ratio(X)	0.08	0.32	0.05	0.87	0.78	0.00	0.46	0.00	0.63	0.00	0.00	0.46
Avail Cap(c_a), veh/h	177	1915	779	205	2624	0	1186	0	509	0	0	247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	32.9	9.0	7.6	31.9	10.5	0.0	31.2	0.0	31.8	0.0	0.0	36.3
Incr Delay (d2), s/veh	0.2	0.1	0.0	29.2	1.3	0.0	1.0	0.0	4.5	0.0	0.0	35.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.4	0.3	5.2	12.8	0.0	1.6	0.0	2.1	0.0	0.0	0.2
LnGrp Delay(d),s/veh	33.1	9.1	7.6	61.0	11.8	0.0	32.2	0.0	36.3	0.0	0.0	71.9
LnGrp LOS	C	A	A	E	B		C		D			E
Approach Vol, veh/h		662			1858			260			4	
Approach Delay, s/veh		9.2			16.5			33.7			71.9	
Approach LOS		A			B			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	46.1		4.2	7.6	50.5		10.9
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	8.4	29.0		11.2	8.4	54.3		24.0
Max Q Clear Time (g_c+I1), s	9.2	9.1		2.2	2.3	27.7		6.4
Green Ext Time (p_c), s	0.0	16.6		0.0	0.0	17.1		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		16.5
HCM 2010 LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	200	267	262	64	934	122	364	220	158	374	477
v/c Ratio	0.65	0.21	0.35	0.54	0.77	0.20	0.78	0.24	0.73	0.78	0.87
Control Delay	58.5	26.6	5.2	65.6	39.8	6.7	57.4	31.3	64.7	49.1	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	26.6	5.2	65.6	39.8	6.7	57.4	31.3	64.7	49.1	40.3
Queue Length 50th (ft)	71	71	0	44	322	0	128	61	109	238	198
Queue Length 95th (ft)	96	101	39	86	#467	41	162	87	143	275	237
Internal Link Dist (ft)		1628			1835			301		375	
Turn Bay Length (ft)	300		225	210		455	225		200		
Base Capacity (vph)	363	1284	745	147	1215	611	556	1020	302	559	603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.21	0.35	0.44	0.77	0.20	0.65	0.22	0.52	0.67	0.79

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	162	216	212	56	813	106	306	180	6	122	288	367
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1810	1776	1845	1900	1881	1863	1845	1864	1900	1845	1881	1881
Adj Flow Rate, veh/h	200	267	262	64	934	122	364	214	6	158	374	477
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	1	1
Peak Hour Factor	0.81	0.81	0.81	0.87	0.87	0.87	0.84	0.84	1.00	0.77	0.77	0.77
Percent Heavy Veh, %	5	7	3	0	1	2	3	2	2	3	1	1
Cap, veh/h	265	1061	492	83	1005	444	433	1186	33	189	598	500
Arrive On Green	0.08	0.31	0.31	0.05	0.28	0.28	0.13	0.34	0.34	0.11	0.32	0.32
Sat Flow, veh/h	3343	3374	1563	1810	3574	1580	3408	3518	98	1757	1881	1573
Grp Volume(v), veh/h	200	267	262	64	934	122	364	107	113	158	374	477
Grp Sat Flow(s),veh/h/ln	1672	1687	1563	1810	1787	1580	1704	1771	1846	1757	1881	1573
Q Serve(g_s), s	5.9	5.9	13.9	3.5	25.6	6.1	10.5	4.3	4.3	8.9	17.0	29.9
Cycle Q Clear(g_c), s	5.9	5.9	13.9	3.5	25.6	6.1	10.5	4.3	4.3	8.9	17.0	29.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	265	1061	492	83	1005	444	433	597	622	189	598	500
V/C Ratio(X)	0.76	0.25	0.53	0.77	0.93	0.27	0.84	0.18	0.18	0.84	0.63	0.95
Avail Cap(c_a), veh/h	399	1061	492	162	1005	444	610	597	622	332	600	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.22	0.22	0.22	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	25.7	28.4	47.5	35.2	28.2	42.9	23.5	23.5	44.0	29.2	33.6
Incr Delay (d2), s/veh	1.7	0.6	4.1	1.3	4.4	0.3	5.3	0.1	0.1	3.7	1.9	28.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	2.8	6.5	1.8	13.2	2.7	5.3	2.1	2.2	4.5	9.1	16.9
LnGrp Delay(d),s/veh	47.1	26.2	32.5	48.7	39.6	28.5	48.2	23.6	23.7	47.7	31.1	62.4
LnGrp LOS	D	C	C	D	D	C	D	C	C	D	C	E
Approach Vol, veh/h		729			1120			584			1009	
Approach Delay, s/veh		34.2			38.9			39.0			48.5	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	46.7	16.8	37.9	12.0	43.4	14.8	39.8
Change Period (Y+Rc), s	4.0	5.7	4.0	* 5.9	4.0	5.7	4.0	* 5.9
Max Green Setting (Gmax), s	9.0	31.3	18.0	* 32	12.0	28.3	19.0	* 31
Max Q Clear Time (g_c+I1), s	5.5	15.9	12.5	31.9	7.9	27.6	10.9	6.3
Green Ext Time (p_c), s	0.0	7.7	0.3	0.1	0.1	0.6	0.1	5.1

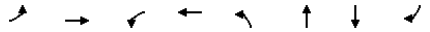
Intersection Summary	
HCM 2010 Ctrl Delay	40.7
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	35	387	76	926	70	147	353	188
v/c Ratio	0.30	0.50	0.56	1.10	0.31	0.64	1.09	0.43
Control Delay	53.4	24.8	62.8	89.9	43.0	46.6	117.6	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	24.8	62.8	89.9	43.0	46.6	117.6	9.6
Queue Length 50th (ft)	22	176	47	~699	42	75	~264	0
Queue Length 95th (ft)	52	270	#109	#1043	59	90	#465	53
Internal Link Dist (ft)		1835		789		492	524	
Turn Bay Length (ft)	140		140		230			
Base Capacity (vph)	144	824	150	843	411	400	323	433
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.47	0.51	1.10	0.17	0.37	1.09	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	305	12	66	765	41	45	58	36	85	215	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1727	1813	1900	1792	1858	1900	1900	1769	1900	1900	1860	1881
Adj Flow Rate, veh/h	35	372	15	76	879	47	70	91	56	100	253	188
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.82	0.82	0.82	0.87	0.87	0.87	0.64	0.64	0.64	0.85	0.85	0.85
Percent Heavy Veh, %	10	5	5	6	2	2	0	7	7	1	1	1
Cap, veh/h	42	751	30	96	812	43	206	117	72	93	236	287
Arrive On Green	0.03	0.43	0.43	0.06	0.46	0.46	0.11	0.11	0.11	0.18	0.18	0.18
Sat Flow, veh/h	1645	1731	70	1707	1748	93	1810	1024	630	520	1315	1596
Grp Volume(v), veh/h	35	0	387	76	0	926	70	0	147	353	0	188
Grp Sat Flow(s),veh/h/ln	1645	0	1801	1707	0	1842	1810	0	1655	1834	0	1596
Q Serve(g_s), s	2.0	0.0	14.7	4.2	0.0	44.0	3.4	0.0	8.2	17.0	0.0	10.4
Cycle Q Clear(g_c), s	2.0	0.0	14.7	4.2	0.0	44.0	3.4	0.0	8.2	17.0	0.0	10.4
Prop In Lane	1.00		0.04	1.00		0.05	1.00		0.38	0.28		1.00
Lane Grp Cap(c), veh/h	42	0	781	96	0	856	206	0	188	329	0	287
V/C Ratio(X)	0.83	0.00	0.50	0.79	0.00	1.08	0.34	0.00	0.78	1.07	0.00	0.66
Avail Cap(c_a), veh/h	148	0	781	153	0	856	420	0	385	329	0	287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.9	0.0	19.3	44.1	0.0	25.3	38.7	0.0	40.8	38.8	0.0	36.1
Incr Delay (d2), s/veh	25.6	0.0	1.0	10.1	0.0	55.4	0.4	0.0	2.7	70.0	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	7.5	2.2	0.0	35.3	1.7	0.0	3.9	14.9	0.0	4.9
LnGrp Delay(d),s/veh	71.6	0.0	20.4	54.2	0.0	80.7	39.0	0.0	43.5	108.8	0.0	40.4
LnGrp LOS	E		C	D		F	D		D	F		D
Approach Vol, veh/h		422			1002			217			541	
Approach Delay, s/veh		24.6			78.7			42.0			85.1	
Approach LOS		C			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	47.1		22.5	5.9	50.0		16.3
Change Period (Y+Rc), s	3.5	6.0		5.5	3.5	6.0		5.5
Max Green Setting (Gmax), s	8.5	34.0		17.0	8.5	44.0		22.0
Max Q Clear Time (g_c+I1), s	6.2	16.7		19.0	4.0	46.0		10.2
Green Ext Time (p_c), s	0.0	13.4		0.0	0.0	0.0		0.5

Intersection Summary			
HCM 2010 Ctrl Delay		66.2	
HCM 2010 LOS		E	

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	5	285	251	77	690	357	139	55
v/c Ratio	0.04	0.43	0.34	0.47	0.81	0.77	0.29	0.27
Control Delay	45.0	24.2	4.3	51.3	30.0	45.4	25.9	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	24.2	4.3	51.3	30.0	45.4	25.9	38.8
Queue Length 50th (ft)	3	113	0	38	275	173	44	26
Queue Length 95th (ft)	15	192	31	#113	#678	#353	100	56
Internal Link Dist (ft)		789			689		624	353
Turn Bay Length (ft)	225		225	350		150		
Base Capacity (vph)	184	1012	986	182	1050	465	484	502
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.28	0.25	0.42	0.66	0.77	0.29	0.11

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	228	201	68	597	11	268	56	48	3	36	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1792	1827	1881	1863	1900	1881	1900	1900	1900	1804	1900
Adj Flow Rate, veh/h	5	285	251	77	678	12	357	75	64	4	48	3
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	0	6	4	1	2	2	1	0	0	3	3	3
Cap, veh/h	10	734	636	99	839	15	414	219	187	5	62	4
Arrive On Green	0.01	0.41	0.41	0.06	0.46	0.46	0.23	0.23	0.23	0.04	0.04	0.04
Sat Flow, veh/h	1810	1792	1553	1792	1825	32	1792	948	809	129	1553	97
Grp Volume(v), veh/h	5	285	251	77	0	690	357	0	139	55	0	0
Grp Sat Flow(s),veh/h/ln	1810	1792	1553	1792	0	1858	1792	0	1757	1780	0	0
Q Serve(g_s), s	0.2	7.7	7.9	2.9	0.0	22.2	13.3	0.0	4.6	2.1	0.0	0.0
Cycle Q Clear(g_c), s	0.2	7.7	7.9	2.9	0.0	22.2	13.3	0.0	4.6	2.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.46	0.07		0.05
Lane Grp Cap(c), veh/h	10	734	636	99	0	854	414	0	406	72	0	0
V/C Ratio(X)	0.52	0.39	0.39	0.78	0.00	0.81	0.86	0.00	0.34	0.77	0.00	0.00
Avail Cap(c_a), veh/h	209	1145	992	207	0	1187	527	0	517	565	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.4	14.4	14.4	32.3	0.0	16.1	25.6	0.0	22.3	33.0	0.0	0.0
Incr Delay (d2), s/veh	28.9	0.3	0.4	9.2	0.0	3.0	10.6	0.0	0.4	12.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.9	3.4	1.7	0.0	12.0	7.8	0.0	2.2	1.3	0.0	0.0
LnGrp Delay(d),s/veh	63.4	14.7	14.8	41.6	0.0	19.1	36.2	0.0	22.6	45.0	0.0	0.0
LnGrp LOS	E	B	B	D		B	D		C	D		
Approach Vol, veh/h		541			767			496			55	
Approach Delay, s/veh		15.2			21.3			32.4			45.0	
Approach LOS		B			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	34.1		6.8	4.4	37.6		20.6
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.6
Max Green Setting (Gmax), s	8.0	44.3		22.0	8.0	44.3		20.4
Max Q Clear Time (g_c+I1), s	4.9	9.9		4.1	2.2	24.2		15.3
Green Ext Time (p_c), s	0.0	9.2		0.1	0.0	7.7		0.8

Intersection Summary			
HCM 2010 Ctrl Delay		23.2	
HCM 2010 LOS		C	

Two Way Analysis cannot be performed on Signalized Intersection.

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	284	18	8	575	26	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	87	87	77	77
Heavy Vehicles, %	3	6	0	2	4	0
Mvmt Flow	323	20	9	661	34	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	343	0	1012	333
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	679	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1227	-	263	713
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	500	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1227	-	260	713
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	494	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	306	-	-	1227	-
HCM Lane V/C Ratio	0.144	-	-	0.007	-
HCM Control Delay (s)	18.7	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	292	0	0	582	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	87	87	87	50	50	50
Heavy Vehicles, %	0	3	0	0	2	0	0	0	0
Mvmt Flow	1	328	0	0	669	0	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	669	0	0	328	0	0	999	999	328
Stage 1	-	-	-	-	-	-	330	330	-
Stage 2	-	-	-	-	-	-	669	669	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	931	-	-	1243	-	-	224	245	718
Stage 1	-	-	-	-	-	-	687	649	-
Stage 2	-	-	-	-	-	-	450	459	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	931	-	-	1243	-	-	224	245	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	224	245	-
Stage 1	-	-	-	-	-	-	686	648	-
Stage 2	-	-	-	-	-	-	450	459	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	931	-	-	1243	-	-	-
HCM Lane V/C Ratio	-	0.001	-	-	-	-	-	-
HCM Control Delay (s)	0	8.9	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	50	50	50
Heavy Vehicles, %	0	0	0
Mvmt Flow	0	0	0

Major/Minor	Minor2		
Conflicting Flow All	999	999	669
Stage 1	669	669	-
Stage 2	330	330	-
Critical Hdwy	7.1	6.5	6.2
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.3
Pot Cap-1 Maneuver	224	245	461
Stage 1	450	459	-
Stage 2	687	649	-
Platoon blocked, %			
Mov Cap-1 Maneuver	224	245	461
Mov Cap-2 Maneuver	224	245	-
Stage 1	450	459	-
Stage 2	686	648	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	285	564	3	7	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	92	92	72	72
Heavy Vehicles, %	20	4	4	0	0	0
Mvmt Flow	6	324	613	3	10	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	616	0	-	0	950	615
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	335	-
Critical Hdwy	4.3	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.38	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	882	-	-	-	291	495
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	729	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	882	-	-	-	289	495
Mov Cap-2 Maneuver	-	-	-	-	289	-
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	882	-	-	-	396
HCM Lane V/C Ratio	0.006	-	-	-	0.07
HCM Control Delay (s)	9.1	0	-	-	14.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	4	274	14	7	491	4	16	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	450	-	450	450	-	450	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	88	88	88	75	75	75
Heavy Vehicles, %	0	3	0	29	2	0	6	0	0
Mvmt Flow	5	319	16	8	558	5	21	0	17

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	558	0	0	319	0	0	927	902	319
Stage 1	-	-	-	-	-	-	328	328	-
Stage 2	-	-	-	-	-	-	599	574	-
Critical Hdwy	4.1	-	-	4.39	-	-	7.16	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-
Follow-up Hdwy	2.2	-	-	2.461	-	-	3.554	4	3.3
Pot Cap-1 Maneuver	1023	-	-	1103	-	-	245	280	726
Stage 1	-	-	-	-	-	-	676	651	-
Stage 2	-	-	-	-	-	-	481	506	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1023	-	-	1103	-	-	219	277	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	277	-
Stage 1	-	-	-	-	-	-	673	648	-
Stage 2	-	-	-	-	-	-	432	502	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.1	17.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	319	1023	-	-	1103	-	-	408
HCM Lane V/C Ratio	0.121	0.005	-	-	0.007	-	-	0.164
HCM Control Delay (s)	17.8	8.5	-	-	8.3	-	-	15.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	13	1	39
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	79	79	79
Heavy Vehicles, %	0	0	3
Mvmt Flow	16	1	49

Major/Minor	Minor2		
Conflicting Flow All	911	902	558
Stage 1	574	574	-
Stage 2	337	328	-
Critical Hdwy	7.1	6.5	6.23
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.327
Pot Cap-1 Maneuver	257	280	527
Stage 1	507	506	-
Stage 2	681	651	-
Platoon blocked, %			
Mov Cap-1 Maneuver	249	277	527
Mov Cap-2 Maneuver	249	277	-
Stage 1	505	502	-
Stage 2	661	648	-

Approach	SB
HCM Control Delay, s	15.6
HCM LOS	C

Minor Lane/Major Mvmt

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	299	434	643	122	68
v/c Ratio	0.68	0.63	0.47	0.41	0.24
Control Delay	28.3	24.1	6.7	27.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	24.1	6.7	27.7	9.0
Queue Length 50th (ft)	89	119	84	39	0
Queue Length 95th (ft)	178	230	167	37	0
Internal Link Dist (ft)	1072		1309	739	
Turn Bay Length (ft)		360		150	
Base Capacity (vph)	1171	700	1781	606	516
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.62	0.36	0.20	0.13

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Volume (veh/h)	220	37	321	476	49	27		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1822	1900	1881	1863	1900	1652		
Adj Flow Rate, veh/h	256	43	434	643	122	68		
Adj No. of Lanes	1	0	1	1	1	1		
Peak Hour Factor	0.86	0.86	0.74	0.74	0.40	0.40		
Percent Heavy Veh, %	5	5	1	2	0	15		
Cap, veh/h	477	80	511	1275	186	144		
Arrive On Green	0.31	0.31	0.29	0.68	0.10	0.10		
Sat Flow, veh/h	1521	256	1792	1863	1810	1404		
Grp Volume(v), veh/h	0	299	434	643	122	68		
Grp Sat Flow(s),veh/h/ln	0	1777	1792	1863	1810	1404		
Q Serve(g_s), s	0.0	6.5	10.7	7.8	3.0	2.1		
Cycle Q Clear(g_c), s	0.0	6.5	10.7	7.8	3.0	2.1		
Prop In Lane		0.14	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	0	558	511	1275	186	144		
V/C Ratio(X)	0.00	0.54	0.85	0.50	0.66	0.47		
Avail Cap(c_a), veh/h	0	1324	801	2380	694	538		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	13.3	15.8	3.6	20.3	19.9		
Incr Delay (d2), s/veh	0.0	0.3	4.3	0.3	1.5	0.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	3.2	5.9	4.0	1.6	0.9		
LnGrp Delay(d),s/veh	0.0	13.6	20.1	3.9	21.7	20.8		
LnGrp LOS		B	C	A	C	C		
Approach Vol, veh/h	299			1077	190			
Approach Delay, s/veh	13.6			10.4	21.4			
Approach LOS	B			B	C			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.4	19.7		9.8		37.1		
Change Period (Y+Rc), s	4.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	21.0	35.0		18.0		60.0		
Max Q Clear Time (g_c+I1), s	12.7	8.5		5.0		9.8		
Green Ext Time (p_c), s	0.7	6.2		0.2		6.8		

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	8	806	237	812	306	117	6
v/c Ratio	0.08	0.95	0.76	0.64	1.10	0.33	0.04
Control Delay	48.8	47.5	54.8	14.5	122.2	9.1	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	47.5	54.8	14.5	122.2	9.1	36.2
Queue Length 50th (ft)	4	408	129	180	~196	0	2
Queue Length 95th (ft)	15	464	206	493	#295	6	10
Internal Link Dist (ft)		1341		1216	1582		878
Turn Bay Length (ft)	280		440				
Base Capacity (vph)	175	846	394	1278	279	358	361
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.95	0.60	0.64	1.10	0.33	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	351	141	173	589	4	194	2	75	1	1	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1583	1852	1900	1863	1863	1900	1900	1845	1900	1900	1900	1900
Adj Flow Rate, veh/h	8	575	231	237	807	5	303	3	117	2	2	2
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.61	0.61	0.61	0.73	0.73	0.73	0.64	0.64	0.64	0.63	0.63	0.63
Percent Heavy Veh, %	20	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	12	597	240	275	1152	7	285	3	264	5	5	5
Arrive On Green	0.01	0.48	0.48	0.15	0.62	0.62	0.16	0.16	0.16	0.01	0.01	0.01
Sat Flow, veh/h	1508	1254	504	1774	1849	11	1741	17	1610	586	586	586
Grp Volume(v), veh/h	8	0	806	237	0	812	306	0	117	6	0	0
Grp Sat Flow(s),veh/h/ln	1508	0	1758	1774	0	1861	1758	0	1610	1759	0	0
Q Serve(g_s), s	0.5	0.0	40.6	11.9	0.0	26.7	15.0	0.0	6.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	40.6	11.9	0.0	26.7	15.0	0.0	6.0	0.3	0.0	0.0
Prop In Lane	1.00		0.29	1.00		0.01	0.99		1.00	0.33		0.33
Lane Grp Cap(c), veh/h	12	0	837	275	0	1159	288	0	264	15	0	0
V/C Ratio(X)	0.66	0.00	0.96	0.86	0.00	0.70	1.06	0.00	0.44	0.39	0.00	0.00
Avail Cap(c_a), veh/h	181	0	864	407	0	1159	288	0	264	365	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.3	0.0	23.2	37.7	0.0	11.6	38.3	0.0	34.5	45.1	0.0	0.0
Incr Delay (d2), s/veh	47.4	0.0	21.7	10.5	0.0	1.8	70.4	0.0	0.9	15.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	24.5	6.7	0.0	14.1	12.8	0.0	2.7	0.2	0.0	0.0
LnGrp Delay(d),s/veh	92.7	0.0	44.9	48.2	0.0	13.3	108.7	0.0	35.4	60.3	0.0	0.0
LnGrp LOS	F		D	D		B	F		D	E		
Approach Vol, veh/h		814			1049			423			6	
Approach Delay, s/veh		45.4			21.2			88.4			60.3	
Approach LOS		D			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.2	48.6		4.8	4.7	62.0		20.0
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	* 5		5.0
Max Green Setting (Gmax), s	21.0	45.0		19.0	11.0	* 45		15.0
Max Q Clear Time (g_c+I1), s	13.9	42.6		2.3	2.5	28.7		17.0
Green Ext Time (p_c), s	0.3	0.9		0.0	0.0	9.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	42.3	
HCM 2010 LOS	D	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	11	646	25	715	291	74	76
v/c Ratio	0.06	0.81	0.16	0.80	0.64	0.17	0.35
Control Delay	45.0	30.6	45.3	26.4	37.8	11.4	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	30.6	45.3	26.4	37.8	11.4	25.2
Queue Length 50th (ft)	5	237	11	266	120	3	12
Queue Length 95th (ft)	20	312	40	461	204	20	35
Internal Link Dist (ft)		1216		2215		1920	584
Turn Bay Length (ft)	120		130		120		
Base Capacity (vph)	191	1339	229	1380	650	603	326
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.48	0.11	0.52	0.45	0.12	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	353	67	19	548	2	186	5	42	11	7	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1864	1900	1900	1845	1900	1881	1819	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	543	103	25	712	3	291	8	66	17	11	48
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.65	0.65	0.65	0.77	0.77	0.77	0.64	0.64	0.64	0.63	0.63	0.63
Percent Heavy Veh, %	0	1	1	0	3	3	1	0	0	0	0	0
Cap, veh/h	35	741	141	39	846	4	354	34	277	22	14	61
Arrive On Green	0.02	0.49	0.49	0.02	0.46	0.46	0.20	0.20	0.20	0.06	0.06	0.06
Sat Flow, veh/h	1810	1523	289	1810	1836	8	1792	170	1398	369	239	1043
Grp Volume(v), veh/h	11	0	646	25	0	715	291	0	74	76	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1812	1810	0	1844	1792	0	1568	1651	0	0
Q Serve(g_s), s	0.4	0.0	21.0	1.0	0.0	25.3	11.5	0.0	2.9	3.4	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	21.0	1.0	0.0	25.3	11.5	0.0	2.9	3.4	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.00	1.00		0.89	0.22		0.63
Lane Grp Cap(c), veh/h	35	0	882	39	0	849	354	0	310	97	0	0
V/C Ratio(X)	0.32	0.00	0.73	0.64	0.00	0.84	0.82	0.00	0.24	0.78	0.00	0.00
Avail Cap(c_a), veh/h	171	0	882	205	0	1353	581	0	509	250	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.8	0.0	15.2	35.9	0.0	17.6	28.4	0.0	25.0	34.4	0.0	0.0
Incr Delay (d2), s/veh	5.6	0.0	3.2	8.8	0.0	2.9	5.0	0.0	0.4	13.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	11.2	0.6	0.0	13.4	6.1	0.0	1.3	1.9	0.0	0.0
LnGrp Delay(d),s/veh	41.4	0.0	18.4	44.7	0.0	20.5	33.4	0.0	25.4	47.8	0.0	0.0
LnGrp LOS	D		B	D		C	C		C	D		
Approach Vol, veh/h		657			740			365			76	
Approach Delay, s/veh		18.8			21.3			31.8			47.8	
Approach LOS		B			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	41.7		8.1	7.1	39.8		18.9
Change Period (Y+Rc), s	3.6	5.7		3.8	5.7	* 5.7		4.3
Max Green Setting (Gmax), s	8.4	30.0		11.2	7.0	* 54		24.0
Max Q Clear Time (g_c+I1), s	3.0	23.0		5.4	2.4	27.3		13.5
Green Ext Time (p_c), s	0.0	4.8		0.1	0.0	6.8		1.0

Intersection Summary		
HCM 2010 Ctrl Delay		23.6
HCM 2010 LOS		C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	31	478	201	277	276	171	17	100
v/c Ratio	0.22	0.87	0.67	0.32	0.92	0.28	0.14	0.39
Control Delay	40.0	38.5	45.6	16.0	71.0	7.6	40.0	30.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	38.5	45.6	16.0	71.0	7.6	40.0	30.1
Queue Length 50th (ft)	13	166	85	62	123	9	7	35
Queue Length 95th (ft)	36	247	#212	166	#280	38	29	78
Internal Link Dist (ft)		2215		948		1066		1456
Turn Bay Length (ft)	275		150		110		50	
Base Capacity (vph)	307	879	301	959	301	690	287	620
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.54	0.67	0.29	0.92	0.25	0.06	0.16

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	154	190	163	211	14	207	23	105	15	64	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.97
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1819	1900	1863	1848	1900	1863	1869	1900	1776	1872	1900
Adj Flow Rate, veh/h	31	214	264	201	260	17	276	31	140	17	74	26
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.72	0.72	0.72	0.81	0.81	0.81	0.75	0.75	0.75	0.87	0.87	0.87
Percent Heavy Veh, %	0	5	5	2	3	3	2	0	0	7	2	2
Cap, veh/h	37	250	308	244	779	51	308	72	325	21	113	40
Arrive On Green	0.02	0.34	0.34	0.14	0.45	0.45	0.17	0.25	0.25	0.01	0.09	0.09
Sat Flow, veh/h	1810	741	914	1774	1716	112	1774	290	1311	1691	1313	461
Grp Volume(v), veh/h	31	0	478	201	0	277	276	0	171	17	0	100
Grp Sat Flow(s),veh/h/ln	1810	0	1655	1774	0	1828	1774	0	1601	1691	0	1774
Q Serve(g_s), s	1.1	0.0	17.8	7.3	0.0	6.5	10.1	0.0	6.0	0.7	0.0	3.6
Cycle Q Clear(g_c), s	1.1	0.0	17.8	7.3	0.0	6.5	10.1	0.0	6.0	0.7	0.0	3.6
Prop In Lane	1.00		0.55	1.00		0.06	1.00		0.82	1.00		0.26
Lane Grp Cap(c), veh/h	37	0	558	244	0	830	308	0	397	21	0	153
V/C Ratio(X)	0.83	0.00	0.86	0.82	0.00	0.33	0.90	0.00	0.43	0.83	0.00	0.65
Avail Cap(c_a), veh/h	314	0	742	308	0	957	308	0	452	294	0	616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	20.5	27.8	0.0	11.6	26.8	0.0	21.0	32.7	0.0	29.3
Incr Delay (d2), s/veh	15.8	0.0	6.1	10.9	0.0	0.1	26.2	0.0	0.3	25.2	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	9.0	4.3	0.0	3.3	7.1	0.0	2.6	0.5	0.0	1.9
LnGrp Delay(d),s/veh	48.2	0.0	26.6	38.7	0.0	11.7	53.0	0.0	21.3	57.8	0.0	31.1
LnGrp LOS	D		C	D		B	D		C	E		C
Approach Vol, veh/h		509			478			447			117	
Approach Delay, s/veh		27.9			23.1			40.9			35.0	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	27.6	15.0	11.0	4.9	35.4	4.3	21.7
Change Period (Y+Rc), s	3.5	5.3	3.5	5.3	3.5	5.3	3.5	* 5.3
Max Green Setting (Gmax), s	11.5	29.7	11.5	23.0	11.5	34.7	11.5	* 19
Max Q Clear Time (g_c+I1), s	9.3	19.8	12.1	5.6	3.1	8.5	2.7	8.0
Green Ext Time (p_c), s	0.0	2.5	0.0	1.0	0.0	3.5	0.0	0.8

Intersection Summary

HCM 2010 Ctrl Delay		30.7	
HCM 2010 LOS		C	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	15	160	232	9	26	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	59	59	90	90	82	82
Heavy Vehicles, %	7	1	2	11	0	0
Mvmt Flow	25	271	258	10	32	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	268	0	-	0	585	263
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	4.17	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.263	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1267	-	-	-	477	781
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1267	-	-	-	466	781
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1267	-	-	-	602
HCM Lane V/C Ratio	0.02	-	-	-	0.12
HCM Control Delay (s)	7.9	0	-	-	11.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	156	40	25	200	26	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	66	66	89	89	58	58
Heavy Vehicles, %	2	0	4	4	0	17
Mvmt Flow	236	61	28	225	45	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	297	0	548	267
Stage 1	-	-	-	-	267	-
Stage 2	-	-	-	-	281	-
Critical Hdwy	-	-	4.14	-	6.4	6.37
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.453
Pot Cap-1 Maneuver	-	-	1253	-	501	737
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1253	-	488	737
Mov Cap-2 Maneuver	-	-	-	-	488	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	546	-	-	1253	-
HCM Lane V/C Ratio	0.12	-	-	0.022	-
HCM Control Delay (s)	12.5	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	203	43	19	63	338	207
v/c Ratio	0.37	0.08	0.10	0.09	0.48	0.14
Control Delay	15.5	6.2	24.2	7.7	13.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	6.2	24.2	7.7	13.7	0.5
Queue Length 50th (ft)	28	0	3	7	45	0
Queue Length 95th (ft)	95	14	25	27	169	10
Internal Link Dist (ft)	2403			1153	1303	
Turn Bay Length (ft)		75	230			250
Base Capacity (vph)	1150	1034	434	1680	1650	1477
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.04	0.04	0.04	0.20	0.14

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	152	32	17	56	301	184		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1845	1792	1743	1845	1845		
Adj Flow Rate, veh/h	203	43	19	63	338	207		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.75	0.75	0.89	0.89	0.89	0.89		
Percent Heavy Veh, %	2	3	6	9	3	3		
Cap, veh/h	318	281	25	911	663	845		
Arrive On Green	0.18	0.18	0.01	0.52	0.36	0.36		
Sat Flow, veh/h	1774	1568	1707	1743	1845	1568		
Grp Volume(v), veh/h	203	43	19	63	338	207		
Grp Sat Flow(s),veh/h/ln	1774	1568	1707	1743	1845	1568		
Q Serve(g_s), s	3.8	0.8	0.4	0.6	5.1	2.5		
Cycle Q Clear(g_c), s	3.8	0.8	0.4	0.6	5.1	2.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	318	281	25	911	663	845		
V/C Ratio(X)	0.64	0.15	0.77	0.07	0.51	0.25		
Avail Cap(c_a), veh/h	1231	1088	465	1944	2058	2030		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.5	12.3	17.5	4.2	8.9	4.4		
Incr Delay (d2), s/veh	3.3	0.4	16.9	0.1	1.0	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.1	0.8	0.3	0.3	2.7	1.6		
LnGrp Delay(d),s/veh	16.9	12.7	34.4	4.3	9.9	4.6		
LnGrp LOS	B	B	C	A	A	A		
Approach Vol, veh/h	246			82	545			
Approach Delay, s/veh	16.1			11.2	7.9			
Approach LOS	B			B	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		23.9		11.7	5.8	18.1		
Change Period (Y+Rc), s		5.3		5.3	5.3	5.3		
Max Green Setting (Gmax), s		39.7		24.7	9.7	39.7		
Max Q Clear Time (g_c+I1), s		2.6		5.8	2.4	7.1		
Green Ext Time (p_c), s		5.8		1.2	0.0	5.7		

Intersection Summary	
HCM 2010 Ctrl Delay	10.5
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	46	52	102	99	108	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	72	72	89	89
Heavy Vehicles, %	4	12	2	2	4	1
Mvmt Flow	57	64	142	138	121	460

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	912	210	0	0	279	0
Stage 1	210	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Critical Hdwy	6.44	6.32	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.408	-	-	2.236	-
Pot Cap-1 Maneuver	302	806	-	-	1272	-
Stage 1	820	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	273	806	-	-	1272	-
Mov Cap-2 Maneuver	273	-	-	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	442	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	421	1272	-
HCM Lane V/C Ratio	-	-	0.287	0.095	-
HCM Control Delay (s)	-	-	17	8.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.3	-

Queues
1: Green Valley Rd & Sophia Pkwy

Existing PM

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	2	1455	148	161	1005	45	44	230	17
v/c Ratio	0.02	0.74	0.16	0.80	0.47	0.21	0.21	0.59	0.08
Control Delay	46.0	17.5	3.8	69.3	11.0	37.2	37.1	11.7	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	17.5	3.8	69.3	11.0	37.2	37.1	11.7	0.8
Queue Length 50th (ft)	1	208	4	72	99	20	20	0	0
Queue Length 95th (ft)	10	538	41	#260	283	60	58	63	0
Internal Link Dist (ft)		1395			1862		1185		889
Turn Bay Length (ft)	250		250	230		220		220	
Base Capacity (vph)	202	2588	1155	202	2632	543	543	650	309
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.56	0.13	0.80	0.38	0.08	0.08	0.35	0.06

Intersection Summary

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

HCM 2010 Signalized Intersection Summary
1: Green Valley Rd & Sophia Pkwy

Existing PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	2	1339	136	142	882	3	2	78	0	207	3	0
Number	5	2	12	1	6	16		3	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98		1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1879	1900		1880	1881	1881	1900	1712
Adj Flow Rate, veh/h	2	1455	148	161	1002	3		87	0	230	6	0
Adj No. of Lanes	1	2	1	1	2	0		2	0	1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88		0.90	0.90	0.90	0.54	0.54
Percent Heavy Veh, %	0	1	1	0	1	1		1	0	1	0	0
Cap, veh/h	83	1784	776	174	2006	6		687	0	299	10	0
Arrive On Green	0.05	0.50	0.50	0.10	0.55	0.55		0.19	0.00	0.19	0.02	0.00
Sat Flow, veh/h	1810	3574	1555	1810	3652	11		3582	0	1556	501	0
Grp Volume(v), veh/h	2	1455	148	161	490	515		87	0	230	17	0
Grp Sat Flow(s),veh/h/ln	1810	1787	1555	1810	1785	1877		1791	0	1556	1419	0
Q Serve(g_s), s	0.1	30.0	4.6	7.7	14.9	14.9		1.8	0.0	12.2	1.0	0.0
Cycle Q Clear(g_c), s	0.1	30.0	4.6	7.7	14.9	14.9		1.8	0.0	12.2	1.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01		1.00		1.00	0.35	
Lane Grp Cap(c), veh/h	83	1784	776	174	981	1031		687	0	299	27	0
V/C Ratio(X)	0.02	0.82	0.19	0.92	0.50	0.50		0.13	0.00	0.77	0.62	0.00
Avail Cap(c_a), veh/h	174	2224	967	174	981	1031		985	0	428	182	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.8	18.5	12.1	39.1	12.2	12.2		29.2	0.0	33.5	42.5	0.0
Incr Delay (d2), s/veh	0.1	2.1	0.1	46.4	0.4	0.4		0.1	0.0	5.5	21.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.3	2.0	6.1	7.3	7.7		0.9	0.0	5.7	0.6	0.0
LnGrp Delay(d),s/veh	39.8	20.5	12.2	85.5	12.6	12.6		29.3	0.0	38.9	63.8	0.0
LnGrp LOS	D	C	B	F	B	B		C		D	E	
Approach Vol, veh/h		1605			1166				317			17
Approach Delay, s/veh		19.8			22.7				36.3			63.8
Approach LOS		B			C				D			E

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	49.3		5.5	7.6	53.7		20.5
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	8.4	54.3		11.2	8.4	34.3		24.0
Max Q Clear Time (g_c+I1), s	9.7	32.0		3.0	2.1	16.9		14.2
Green Ext Time (p_c), s	0.0	11.5		0.0	0.0	15.1		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		22.8
HCM 2010 LOS		C

Notes

User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Volume (veh/h)	6
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.91
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	11
Adj No. of Lanes	0
Peak Hour Factor	0.54
Percent Heavy Veh, %	0
Cap, veh/h	18
Arrive On Green	0.02
Sat Flow, veh/h	918
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.65
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	468	847	311	156	572	106	324	288	131	217	236
v/c Ratio	0.81	0.57	0.37	0.76	0.44	0.17	0.76	0.42	0.72	0.67	0.51
Control Delay	57.1	29.2	4.7	70.8	30.1	6.6	58.4	38.9	69.4	51.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	29.2	4.7	70.8	30.1	6.6	58.4	38.9	69.4	51.8	8.3
Queue Length 50th (ft)	164	240	0	108	162	0	115	94	91	148	0
Queue Length 95th (ft)	#269	372	64	#199	240	39	161	117	146	188	50
Internal Link Dist (ft)		1628			1835			301		375	
Turn Bay Length (ft)	300		225	210		455	225		200		
Base Capacity (vph)	579	1483	830	224	1303	636	500	1022	225	512	600
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.57	0.37	0.70	0.44	0.17	0.65	0.28	0.58	0.42	0.39

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	445	805	295	137	503	93	298	243	22	113	187	203
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1881	1863	1881	1883	1900	1881	1863	1863
Adj Flow Rate, veh/h	468	847	311	156	572	106	324	264	24	131	217	236
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.88	0.88	0.88	0.92	0.92	0.92	0.86	0.86	0.86
Percent Heavy Veh, %	0	1	1	0	1	2	1	1	1	1	2	2
Cap, veh/h	541	1318	576	189	1142	498	401	737	66	162	368	307
Arrive On Green	0.15	0.37	0.37	0.10	0.32	0.32	0.12	0.22	0.22	0.09	0.20	0.20
Sat Flow, veh/h	3510	3574	1563	1810	3574	1560	3476	3316	299	1792	1863	1553
Grp Volume(v), veh/h	468	847	311	156	572	106	324	141	147	131	217	236
Grp Sat Flow(s),veh/h/ln	1755	1787	1563	1810	1787	1560	1738	1789	1827	1792	1863	1553
Q Serve(g_s), s	11.9	18.0	14.4	7.7	11.9	4.6	8.3	6.1	6.2	6.6	9.7	13.2
Cycle Q Clear(g_c), s	11.9	18.0	14.4	7.7	11.9	4.6	8.3	6.1	6.2	6.6	9.7	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	541	1318	576	189	1142	498	401	397	406	162	368	307
V/C Ratio(X)	0.87	0.64	0.54	0.82	0.50	0.21	0.81	0.36	0.36	0.81	0.59	0.77
Avail Cap(c_a), veh/h	612	1318	576	256	1142	498	606	624	637	273	591	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	23.9	22.8	40.2	25.3	22.8	39.6	30.1	30.2	40.9	33.4	34.8
Incr Delay (d2), s/veh	10.4	2.4	3.6	5.8	0.8	0.5	2.6	0.5	0.5	3.5	1.3	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	9.3	6.8	4.2	6.0	2.0	4.2	3.1	3.2	3.4	5.1	6.0
LnGrp Delay(d),s/veh	48.3	26.4	26.4	46.0	26.1	23.3	42.2	30.6	30.6	44.4	34.7	38.3
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		1626			834			612			584	
Approach Delay, s/veh		32.7			29.4			36.8			38.4	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	58.8	14.6	24.0	18.1	54.3	12.3	26.3
Change Period (Y+Rc), s	4.0	5.7	4.0	* 5.9	4.0	5.7	4.0	* 5.9
Max Green Setting (Gmax), s	13.0	32.3	16.0	* 29	16.0	29.3	14.0	* 32
Max Q Clear Time (g_c+I1), s	9.7	20.0	10.3	15.2	13.9	13.9	8.6	8.2
Green Ext Time (p_c), s	0.0	7.6	0.2	2.9	0.2	8.8	0.0	3.4

Intersection Summary

HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Queues
3: El Dorado Hills Blvd & Green Valley Rd

Existing PM

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	137	895	36	727	57	201	170	89
v/c Ratio	1.85	0.97	0.30	0.90	0.33	0.73	0.71	0.29
Control Delay	454.7	52.0	53.8	43.7	44.3	53.4	59.8	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	454.7	52.0	53.8	43.7	44.3	53.4	59.8	6.4
Queue Length 50th (ft)	~135	~642	23	424	34	114	106	0
Queue Length 95th (ft)	#281	#1042	57	#746	73	193	189	27
Internal Link Dist (ft)		1835		789		492	524	
Turn Bay Length (ft)	140		140		230			
Base Capacity (vph)	74	924	152	809	262	404	314	364
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.85	0.97	0.24	0.90	0.22	0.50	0.54	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
3: El Dorado Hills Blvd & Green Valley Rd

Existing PM

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	2	126	811	21	32	552	88	1	50	121	58	64
Number		5	2	12	1	6	16		3	8	18	7
Initial Q (Qb), veh		0	0	0	0	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98	1.00		0.98		1.00		0.98	1.00
Parking Bus, Adj		1.00	1.00	0.90	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1899	1882	1900	1900	1884	1900		1863	1875	1900	1900
Adj Flow Rate, veh/h		135	872	23	36	627	100		56	136	65	69
Adj No. of Lanes		1	1	0	1	1	0		1	1	0	0
Peak Hour Factor		0.93	0.93	0.93	0.88	0.88	0.88		0.89	0.89	0.89	0.93
Percent Heavy Veh, %		0	1	1	0	1	1		2	1	1	0
Cap, veh/h		165	809	21	45	675	108		255	172	82	90
Arrive On Green		0.09	0.49	0.49	0.03	0.43	0.43		0.14	0.14	0.14	0.12
Sat Flow, veh/h		1809	1641	43	1810	1580	252		1774	1193	570	756
Grp Volume(v), veh/h		135	0	895	36	0	727		56	0	201	170
Grp Sat Flow(s),veh/h/ln		1809	0	1685	1810	0	1832		1774	0	1763	1862
Q Serve(g_s), s		6.9	0.0	46.1	1.8	0.0	35.2		2.6	0.0	10.3	8.3
Cycle Q Clear(g_c), s		6.9	0.0	46.1	1.8	0.0	35.2		2.6	0.0	10.3	8.3
Prop In Lane		1.00		0.03	1.00		0.14		1.00		0.32	0.41
Lane Grp Cap(c), veh/h		165	0	831	45	0	783		255	0	254	221
V/C Ratio(X)		0.82	0.00	1.08	0.79	0.00	0.93		0.22	0.00	0.79	0.77
Avail Cap(c_a), veh/h		165	0	831	165	0	863		418	0	415	339
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	0.00	1.00	1.00	0.00	1.00		1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh		41.7	0.0	23.7	45.3	0.0	25.4		35.4	0.0	38.7	39.9
Incr Delay (d2), s/veh		26.3	0.0	54.2	20.0	0.0	16.5		0.2	0.0	2.1	2.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.6	0.0	33.7	1.2	0.0	21.4		1.3	0.0	5.2	4.4
LnGrp Delay(d),s/veh		68.0	0.0	77.9	65.4	0.0	41.9		35.5	0.0	40.8	42.2
LnGrp LOS		E		F	E		D		D		D	D
Approach Vol, veh/h			1030			763				257		
Approach Delay, s/veh			76.6			43.0				39.6		
Approach LOS			E			D				D		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	52.1		16.6	12.0	45.9		18.9
Change Period (Y+Rc), s	3.5	6.0		5.5	3.5	6.0		5.5
Max Green Setting (Gmax), s	8.5	34.0		17.0	8.5	44.0		22.0
Max Q Clear Time (g_c+I1), s	3.8	48.1		10.3	8.9	37.2		12.3
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	2.7		0.6

Intersection Summary

HCM 2010 Ctrl Delay		57.4	
HCM 2010 LOS		E	

Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	94	83
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900
Adj Flow Rate, veh/h	101	89
Adj No. of Lanes	1	1
Peak Hour Factor	0.93	0.93
Percent Heavy Veh, %	0	0
Cap, veh/h	131	189
Arrive On Green	0.12	0.12
Sat Flow, veh/h	1106	1595
Grp Volume(v), veh/h	0	89
Grp Sat Flow(s),veh/h/ln	0	1595
Q Serve(g_s), s	0.0	4.9
Cycle Q Clear(g_c), s	0.0	4.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	0	189
V/C Ratio(X)	0.00	0.47
Avail Cap(c_a), veh/h	0	290
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	1.00
Uniform Delay (d), s/veh	0.0	38.4
Incr Delay (d2), s/veh	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2
LnGrp Delay(d),s/veh	0.0	39.1
LnGrp LOS		D
Approach Vol, veh/h	259	
Approach Delay, s/veh	41.1	
Approach LOS	D	
Timer		

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	4	692	312	45	503	287	99	24
v/c Ratio	0.03	0.76	0.35	0.29	0.50	0.68	0.22	0.12
Control Delay	47.5	27.6	6.5	48.2	16.8	43.2	16.8	33.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	27.6	6.5	48.2	16.8	43.2	16.8	33.6
Queue Length 50th (ft)	2	272	20	23	118	137	14	9
Queue Length 95th (ft)	15	#717	102	62	344	#334	63	17
Internal Link Dist (ft)		789			689		624	353
Turn Bay Length (ft)	225		225	350		150		
Base Capacity (vph)	194	1123	1031	194	1212	491	510	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.62	0.30	0.23	0.42	0.58	0.19	0.04

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	644	290	36	395	7	247	29	56	1	8	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.96
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1882	1900	1881	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	4	692	312	45	494	9	287	34	65	2	16	6
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.80	0.80	0.80	0.86	0.86	0.86	0.50	0.50	0.50
Percent Heavy Veh, %	0	1	0	0	1	1	1	0	0	0	0	0
Cap, veh/h	8	902	756	61	937	17	347	111	212	4	29	11
Arrive On Green	0.00	0.48	0.48	0.03	0.51	0.51	0.19	0.19	0.19	0.02	0.02	0.02
Sat Flow, veh/h	1810	1881	1576	1810	1841	34	1792	573	1096	149	1194	448
Grp Volume(v), veh/h	4	692	312	45	0	503	287	0	99	24	0	0
Grp Sat Flow(s),veh/h/ln	1810	1881	1576	1810	0	1875	1792	0	1669	1791	0	0
Q Serve(g_s), s	0.2	20.6	8.8	1.7	0.0	12.3	10.5	0.0	3.5	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.2	20.6	8.8	1.7	0.0	12.3	10.5	0.0	3.5	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.66	0.08		0.25
Lane Grp Cap(c), veh/h	8	902	756	61	0	954	347	0	323	44	0	0
V/C Ratio(X)	0.52	0.77	0.41	0.74	0.00	0.53	0.83	0.00	0.31	0.55	0.00	0.00
Avail Cap(c_a), veh/h	213	1223	1025	213	0	1219	537	0	500	578	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.8	14.6	11.5	32.6	0.0	11.2	26.4	0.0	23.5	32.9	0.0	0.0
Incr Delay (d2), s/veh	34.4	2.1	0.4	12.1	0.0	0.5	5.1	0.0	0.4	7.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	11.1	3.9	1.0	0.0	6.4	5.7	0.0	1.6	0.5	0.0	0.0
LnGrp Delay(d),s/veh	68.2	16.6	11.9	44.8	0.0	11.7	31.4	0.0	23.9	40.7	0.0	0.0
LnGrp LOS	E	B	B	D		B	C		C	D		
Approach Vol, veh/h		1008			548			386			24	
Approach Delay, s/veh		15.4			14.4			29.5			40.7	
Approach LOS		B			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	38.4		5.7	4.3	40.4		17.8
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.6
Max Green Setting (Gmax), s	8.0	44.3		22.0	8.0	44.3		20.4
Max Q Clear Time (g_c+I1), s	3.7	22.6		2.9	2.2	14.3		12.5
Green Ext Time (p_c), s	0.0	10.0		0.0	0.0	11.6		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	652	31	9	427	20	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	81	81	81	81
Heavy Vehicles, %	2	0	0	1	0	25
Mvmt Flow	724	34	11	527	25	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	759	0	1291	742
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	549	-
Critical Hdwy	-	-	4.1	-	6.4	6.45
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.525
Pot Cap-1 Maneuver	-	-	862	-	182	380
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	583	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	862	-	179	380
Mov Cap-2 Maneuver	-	-	-	-	179	-
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	573	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	26.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	196	-	-	862	-
HCM Lane V/C Ratio	0.151	-	-	0.013	-
HCM Control Delay (s)	26.6	-	-	9.2	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	680	0	0	416	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	81	81	81	50	50	50
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0
Mvmt Flow	2	747	0	0	514	0	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	514	0	0	747	0	0	1266	1266	747
Stage 1	-	-	-	-	-	-	752	752	-
Stage 2	-	-	-	-	-	-	514	514	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1062	-	-	870	-	-	147	171	416
Stage 1	-	-	-	-	-	-	405	421	-
Stage 2	-	-	-	-	-	-	547	539	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1062	-	-	870	-	-	147	170	416
Mov Cap-2 Maneuver	-	-	-	-	-	-	147	170	-
Stage 1	-	-	-	-	-	-	404	420	-
Stage 2	-	-	-	-	-	-	547	539	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1062	-	-	870	-	-	-
HCM Lane V/C Ratio	-	0.002	-	-	-	-	-	-
HCM Control Delay (s)	0	8.4	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	50	50	50
Heavy Vehicles, %	0	0	0
Mvmt Flow	0	0	0

Major/Minor	Minor2		
Conflicting Flow All	1266	1266	514
Stage 1	514	514	-
Stage 2	752	752	-
Critical Hdwy	7.1	6.5	6.2
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.3
Pot Cap-1 Maneuver	147	171	564
Stage 1	547	539	-
Stage 2	405	421	-
Platoon blocked, %			
Mov Cap-1 Maneuver	147	170	564
Mov Cap-2 Maneuver	147	170	-
Stage 1	545	539	-
Stage 2	404	420	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	A

Minor Lane/Major Mvmt

7: Green Valley Rd & Malcolm Dixon Rd

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	17	664	408	11	13	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	77	77	60	60
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	18	722	530	14	22	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	544	0	-	0	1296	537
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	759	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1035	-	-	-	181	548
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	466	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1035	-	-	-	176	548
Mov Cap-2 Maneuver	-	-	-	-	176	-
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	452	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1035	-	-	-	244
HCM Lane V/C Ratio	0.018	-	-	-	0.15
HCM Control Delay (s)	8.5	0	-	-	22.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

8: Deer Valley Rd (W) & Green Valley Rd

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	40	596	20	14	389	6	13	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	450	-	450	450	-	450	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	82	82	82	70	70	70
Heavy Vehicles, %	2	1	0	0	1	0	0	0	0
Mvmt Flow	43	648	22	17	474	7	19	1	17

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	474	0	0	648	0	0	1261	1244	648
Stage 1	-	-	-	-	-	-	735	735	-
Stage 2	-	-	-	-	-	-	526	509	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1088	-	-	947	-	-	148	176	474
Stage 1	-	-	-	-	-	-	414	428	-
Stage 2	-	-	-	-	-	-	539	541	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1088	-	-	947	-	-	133	166	474
Mov Cap-2 Maneuver	-	-	-	-	-	-	133	166	-
Stage 1	-	-	-	-	-	-	398	411	-
Stage 2	-	-	-	-	-	-	499	531	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.3	26.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	201	1088	-	-	947	-	-	303
HCM Lane V/C Ratio	0.185	0.04	-	-	0.018	-	-	0.154
HCM Control Delay (s)	26.9	8.4	-	-	8.9	-	-	19
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	9	1	24
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	73	73	73
Heavy Vehicles, %	0	0	0
Mvmt Flow	12	1	33

Major/Minor	Minor2		
Conflicting Flow All	1253	1244	474
Stage 1	509	509	-
Stage 2	744	735	-
Critical Hdwy	7.1	6.5	6.2
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.3
Pot Cap-1 Maneuver	150	176	595
Stage 1	550	541	-
Stage 2	410	428	-
Platoon blocked, %			
Mov Cap-1 Maneuver	137	166	595
Mov Cap-2 Maneuver	137	166	-
Stage 1	528	531	-
Stage 2	378	411	-

Approach	SB
HCM Control Delay, s	19
HCM LOS	C

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	6	690	102	495	197	206	25
v/c Ratio	0.04	0.75	0.46	0.42	0.64	0.47	0.14
Control Delay	46.8	26.6	46.7	11.6	48.4	10.1	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	26.6	46.7	11.6	48.4	10.1	28.9
Queue Length 50th (ft)	3	251	51	84	97	0	7
Queue Length 95th (ft)	18	#670	123	343	#219	46	19
Internal Link Dist (ft)		1341		1216	1582		878
Turn Bay Length (ft)	280		440				
Base Capacity (vph)	252	1046	482	1358	345	472	429
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.66	0.21	0.36	0.57	0.44	0.06

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	488	112	94	453	3	156	3	167	6	2	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1881	1900	1900	1900	1881	1900	1900	1900
Adj Flow Rate, veh/h	6	561	129	102	492	3	193	4	206	10	3	12
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.87	0.87	0.87	0.92	0.92	0.92	0.81	0.81	0.81	0.60	0.60	0.60
Percent Heavy Veh, %	0	1	1	0	1	1	0	0	1	0	0	0
Cap, veh/h	11	687	158	134	998	6	291	6	262	15	5	18
Arrive On Green	0.01	0.47	0.47	0.07	0.53	0.53	0.16	0.16	0.16	0.02	0.02	0.02
Sat Flow, veh/h	1810	1473	339	1810	1868	11	1774	37	1599	688	206	826
Grp Volume(v), veh/h	6	0	690	102	0	495	197	0	206	25	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1811	1810	0	1879	1811	0	1599	1720	0	0
Q Serve(g_s), s	0.2	0.0	21.7	3.7	0.0	11.0	6.7	0.0	8.2	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	21.7	3.7	0.0	11.0	6.7	0.0	8.2	1.0	0.0	0.0
Prop In Lane	1.00		0.19	1.00		0.01	0.98		1.00	0.40		0.48
Lane Grp Cap(c), veh/h	11	0	845	134	0	1005	297	0	262	38	0	0
V/C Ratio(X)	0.53	0.00	0.82	0.76	0.00	0.49	0.66	0.00	0.78	0.65	0.00	0.00
Avail Cap(c_a), veh/h	301	0	1235	576	0	1281	412	0	363	495	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.7	0.0	15.2	30.0	0.0	9.7	25.9	0.0	26.5	32.0	0.0	0.0
Incr Delay (d2), s/veh	32.7	0.0	2.4	6.4	0.0	0.3	1.9	0.0	6.4	17.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	11.3	2.1	0.0	5.7	3.5	0.0	4.1	0.6	0.0	0.0
LnGrp Delay(d),s/veh	65.4	0.0	17.5	36.4	0.0	10.0	27.8	0.0	32.9	49.2	0.0	0.0
LnGrp LOS	E		B	D		A	C		C	D		
Approach Vol, veh/h		696			597			403			25	
Approach Delay, s/veh		18.0			14.5			30.4			49.2	
Approach LOS		B			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	35.8		5.5	4.4	40.3		15.8
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	* 5		5.0
Max Green Setting (Gmax), s	21.0	45.0		19.0	11.0	* 45		15.0
Max Q Clear Time (g_c+I1), s	5.7	23.7		3.0	2.2	13.0		10.2
Green Ext Time (p_c), s	0.1	7.1		0.1	0.0	8.1		0.7

Intersection Summary		
HCM 2010 Ctrl Delay		20.1
HCM 2010 LOS		C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	22	682	49	444	159	94	30
v/c Ratio	0.12	0.73	0.28	0.41	0.47	0.26	0.16
Control Delay	46.5	23.1	46.8	14.1	38.2	13.0	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	23.1	46.8	14.1	38.2	13.0	35.6
Queue Length 50th (ft)	11	283	24	103	75	5	9
Queue Length 95th (ft)	42	555	75	297	152	43	38
Internal Link Dist (ft)		1216		2215		1920	584
Turn Bay Length (ft)	120		130		120		
Base Capacity (vph)	191	1345	229	1420	648	621	310
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.51	0.21	0.31	0.25	0.15	0.10

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	500	141	46	405	8	132	10	68	8	7	9
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1900	1900	1881	1852	1900	1900	1900	1900
Adj Flow Rate, veh/h	22	532	150	49	435	9	159	12	82	10	9	11
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.83	0.83	0.83	0.80	0.80	0.80
Percent Heavy Veh, %	0	1	1	0	0	0	1	0	0	0	0	0
Cap, veh/h	65	709	200	67	875	18	246	27	187	19	17	21
Arrive On Green	0.04	0.51	0.51	0.04	0.47	0.47	0.14	0.14	0.14	0.03	0.03	0.03
Sat Flow, veh/h	1810	1403	396	1810	1854	38	1792	199	1358	581	523	640
Grp Volume(v), veh/h	22	0	682	49	0	444	159	0	94	30	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1799	1810	0	1892	1792	0	1557	1744	0	0
Q Serve(g_s), s	0.7	0.0	18.3	1.6	0.0	9.8	5.1	0.0	3.4	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	18.3	1.6	0.0	9.8	5.1	0.0	3.4	1.0	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.02	1.00		0.87	0.33		0.37
Lane Grp Cap(c), veh/h	65	0	909	67	0	893	246	0	214	57	0	0
V/C Ratio(X)	0.34	0.00	0.75	0.73	0.00	0.50	0.65	0.00	0.44	0.53	0.00	0.00
Avail Cap(c_a), veh/h	209	0	1614	251	0	1072	710	0	617	323	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.5	0.0	11.9	28.8	0.0	11.0	24.7	0.0	24.0	28.8	0.0	0.0
Incr Delay (d2), s/veh	3.3	0.0	1.4	7.9	0.0	0.4	3.0	0.0	1.5	7.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	9.3	1.0	0.0	5.2	2.7	0.0	1.5	0.6	0.0	0.0
LnGrp Delay(d),s/veh	31.8	0.0	13.3	36.8	0.0	11.5	27.7	0.0	25.5	36.4	0.0	0.0
LnGrp LOS	C		B	D		B	C		C	D		
Approach Vol, veh/h		704			493			253			30	
Approach Delay, s/veh		13.9			14.0			26.8			36.4	
Approach LOS		B			B			C			D	

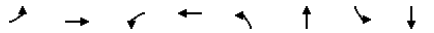
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	36.3		5.8	7.9	34.3		12.6
Change Period (Y+Rc), s	3.6	5.7		3.8	5.7	* 5.7		4.3
Max Green Setting (Gmax), s	8.4	54.3		11.2	7.0	* 34		24.0
Max Q Clear Time (g_c+I1), s	3.6	20.3		3.0	2.7	11.8		7.1
Green Ext Time (p_c), s	0.0	10.3		0.0	0.0	8.9		0.9

Intersection Summary			
HCM 2010 Ctrl Delay		16.6	
HCM 2010 LOS		B	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	526	94	213	320	267	16	86
v/c Ratio	0.33	0.84	0.48	0.29	0.71	0.39	0.14	0.35
Control Delay	46.1	39.0	47.7	21.9	41.4	16.7	44.9	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	39.0	47.7	21.9	41.4	16.7	44.9	36.4
Queue Length 50th (ft)	27	234	49	77	156	73	8	40
Queue Length 95th (ft)	70	#546	108	167	#330	153	30	79
Internal Link Dist (ft)		2215		948		1066		1456
Turn Bay Length (ft)	275		150		110		50	
Base Capacity (vph)	299	906	307	976	575	929	290	642
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.58	0.31	0.22	0.56	0.29	0.06	0.13

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	247	253	82	165	20	275	101	129	14	62	11
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1827	1881	1900	1881	1890	1900	1881	1889	1900	1776	1900	1900
Adj Flow Rate, veh/h	51	260	266	94	190	23	320	117	150	16	73	13
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.87	0.87	0.87	0.86	0.86	0.86	0.85	0.85	0.85
Percent Heavy Veh, %	4	0	0	1	0	0	1	0	0	7	0	0
Cap, veh/h	63	304	311	121	642	78	372	207	265	20	124	22
Arrive On Green	0.04	0.36	0.36	0.07	0.39	0.39	0.21	0.27	0.27	0.01	0.08	0.08
Sat Flow, veh/h	1740	848	868	1792	1648	199	1792	752	965	1691	1569	279
Grp Volume(v), veh/h	51	0	526	94	0	213	320	0	267	16	0	86
Grp Sat Flow(s),veh/h/ln	1740	0	1716	1792	0	1847	1792	0	1717	1691	0	1849
Q Serve(g_s), s	1.8	0.0	17.3	3.2	0.0	4.9	10.5	0.0	8.2	0.6	0.0	2.7
Cycle Q Clear(g_c), s	1.8	0.0	17.3	3.2	0.0	4.9	10.5	0.0	8.2	0.6	0.0	2.7
Prop In Lane	1.00		0.51	1.00		0.11	1.00		0.56	1.00		0.15
Lane Grp Cap(c), veh/h	63	0	614	121	0	719	372	0	472	20	0	146
V/C Ratio(X)	0.82	0.00	0.86	0.78	0.00	0.30	0.86	0.00	0.57	0.81	0.00	0.59
Avail Cap(c_a), veh/h	327	0	834	337	0	1049	630	0	526	318	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.3	0.0	18.2	28.0	0.0	12.9	23.4	0.0	19.0	30.1	0.0	27.2
Incr Delay (d2), s/veh	9.2	0.0	5.2	3.9	0.0	0.1	2.7	0.0	0.5	24.3	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	9.1	1.7	0.0	2.5	5.4	0.0	3.9	0.4	0.0	1.4
LnGrp Delay(d),s/veh	38.4	0.0	23.4	32.0	0.0	13.0	26.0	0.0	19.5	54.4	0.0	28.6
LnGrp LOS	D		C	C		B	C		B	D		C
Approach Vol, veh/h		577			307			587			102	
Approach Delay, s/veh		24.7			18.8			23.1			32.6	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	27.2	16.2	10.1	5.7	29.1	4.2	22.1
Change Period (Y+Rc), s	3.5	5.3	3.5	5.3	3.5	5.3	3.5	* 5.3
Max Green Setting (Gmax), s	11.5	29.7	21.5	23.0	11.5	34.7	11.5	* 19
Max Q Clear Time (g_c+I1), s	5.2	19.3	12.5	4.7	3.8	6.9	2.6	10.2
Green Ext Time (p_c), s	0.0	2.5	0.2	1.3	0.0	3.4	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

13: Green Valley Rd & Deer Valley Rd E

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	37	252	141	32	29	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	86	86	68	68
Heavy Vehicles, %	0	1	2	3	3	5
Mvmt Flow	46	315	164	37	43	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	201	0	-	0	591	183
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	4.1	-	-	-	6.43	6.25
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.2	-	-	-	3.527	3.345
Pot Cap-1 Maneuver	1383	-	-	-	468	852
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	669	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1383	-	-	-	449	852
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1383	-	-	-	560
HCM Lane V/C Ratio	0.033	-	-	-	0.131
HCM Control Delay (s)	7.7	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

14: Ponderosa Rd & Green Valley Rd

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	249	25	11	163	26	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	79	79	71	71
Heavy Vehicles, %	1	4	9	0	4	6
Mvmt Flow	307	31	14	206	37	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	338	0	557	323
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	-	-	4.19	-	6.44	6.26
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.281	-	3.536	3.354
Pot Cap-1 Maneuver	-	-	1183	-	488	709
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1183	-	482	709
Mov Cap-2 Maneuver	-	-	-	-	482	-
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	790	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	555	-	-	1183	-
HCM Lane V/C Ratio	0.112	-	-	0.012	-
HCM Control Delay (s)	12.3	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	245	30	35	374	162	179
v/c Ratio	0.43	0.06	0.17	0.49	0.28	0.12
Control Delay	15.4	6.8	23.2	11.6	14.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	6.8	23.2	11.6	14.8	0.8
Queue Length 50th (ft)	38	1	7	55	21	0
Queue Length 95th (ft)	118	15	34	132	82	10
Internal Link Dist (ft)	2403			1153	1303	
Turn Bay Length (ft)		75	230			250
Base Capacity (vph)	1127	1029	447	1834	1591	1471
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.03	0.08	0.20	0.10	0.12

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	218	27	31	329	138	152
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1900	1900	1863	1776	1900
Adj Flow Rate, veh/h	245	30	35	374	162	179
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.88	0.88	0.85	0.85
Percent Heavy Veh, %	1	0	0	2	7	0
Cap, veh/h	369	332	45	927	577	858
Arrive On Green	0.21	0.21	0.02	0.50	0.33	0.33
Sat Flow, veh/h	1792	1615	1810	1863	1776	1615
Grp Volume(v), veh/h	245	30	35	374	162	179
Grp Sat Flow(s),veh/h/ln	1792	1615	1810	1863	1776	1615
Q Serve(g_s), s	4.5	0.5	0.7	4.5	2.4	2.1
Cycle Q Clear(g_c), s	4.5	0.5	0.7	4.5	2.4	2.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	369	332	45	927	577	858
V/C Ratio(X)	0.66	0.09	0.79	0.40	0.28	0.21
Avail Cap(c_a), veh/h	1237	1115	491	2067	1970	2124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	11.5	17.4	5.6	9.0	4.4
Incr Delay (d2), s/veh	3.2	0.2	10.6	0.4	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.5	0.5	2.4	1.2	1.4
LnGrp Delay(d),s/veh	16.3	11.7	28.0	6.1	9.4	4.6
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	275			409	341	
Approach Delay, s/veh	15.8			8.0	6.9	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		23.1		12.7	6.2	16.9		
Change Period (Y+Rc), s		5.3		5.3	5.3	5.3		
Max Green Setting (Gmax), s		39.7		24.7	9.7	39.7		
Max Q Clear Time (g_c+I1), s		6.5		6.5	2.7	4.4		
Green Ext Time (p_c), s		7.1		1.4	0.0	7.2		

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

Intersection	
Int Delay, s/veh	8.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	113	86	431	82	55	176
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	86	86	94	94
Heavy Vehicles, %	0	0	2	1	7	3
Mvmt Flow	151	115	501	95	59	187

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	853	549	0	0	597	0
Stage 1	549	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.17	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.263	-
Pot Cap-1 Maneuver	332	539	-	-	956	-
Stage 1	583	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	312	539	-	-	956	-
Mov Cap-2 Maneuver	312	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	707	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.5	0	2.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	381	956	-
HCM Lane V/C Ratio	-	-	0.696	0.061	-
HCM Control Delay (s)	-	-	33.5	9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	5.1	0.2	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	144	890	60	520	94	322	186	93
v/c Ratio	0.93	1.23	0.47	0.80	0.26	0.87	0.74	0.30
Control Delay	105.6	145.3	60.7	38.7	38.4	61.5	61.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.6	145.3	60.7	38.7	38.4	61.5	61.6	7.3
Queue Length 50th (ft)	97	~776	38	300	52	191	118	0
Queue Length 95th (ft)	#180	#741	87	442	77	219	190	24
Internal Link Dist (ft)		877		789		492	524	
Turn Bay Length (ft)	140		140		230			
Base Capacity (vph)	155	834	148	823	398	409	317	356
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	1.07	0.41	0.63	0.24	0.79	0.59	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

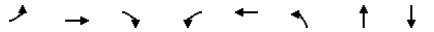
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	628	22	55	414	59	63	138	78	43	113	78
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1846	1900	1776	1845	1900	1845	1824	1900	1900	1835	1792
Adj Flow Rate, veh/h	144	860	30	60	455	65	94	206	116	51	135	93
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.73	0.73	0.73	0.91	0.91	0.91	0.67	0.67	0.67	0.84	0.84	0.84
Percent Heavy Veh, %	2	3	3	7	3	3	3	2	2	3	3	6
Cap, veh/h	161	711	25	76	560	80	368	229	129	63	166	187
Arrive On Green	0.09	0.40	0.40	0.04	0.36	0.36	0.21	0.21	0.21	0.13	0.13	0.13
Sat Flow, veh/h	1774	1772	62	1691	1574	225	1757	1096	617	496	1314	1478
Grp Volume(v), veh/h	144	0	890	60	0	520	94	0	322	186	0	93
Grp Sat Flow(s),veh/h/ln	1774	0	1834	1691	0	1799	1757	0	1713	1810	0	1478
Q Serve(g_s), s	7.5	0.0	37.7	3.3	0.0	24.6	4.2	0.0	17.2	9.4	0.0	5.5
Cycle Q Clear(g_c), s	7.5	0.0	37.7	3.3	0.0	24.6	4.2	0.0	17.2	9.4	0.0	5.5
Prop In Lane	1.00		0.03	1.00		0.13	1.00		0.36	0.27		1.00
Lane Grp Cap(c), veh/h	161	0	736	76	0	640	368	0	359	229	0	187
V/C Ratio(X)	0.90	0.00	1.21	0.79	0.00	0.81	0.26	0.00	0.90	0.81	0.00	0.50
Avail Cap(c_a), veh/h	161	0	736	153	0	843	412	0	401	328	0	268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	28.1	44.4	0.0	27.4	31.0	0.0	36.2	39.9	0.0	38.2
Incr Delay (d2), s/veh	42.2	0.0	106.8	12.8	0.0	6.7	0.1	0.0	19.7	6.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	40.8	1.8	0.0	13.3	2.1	0.0	10.1	5.1	0.0	2.3
LnGrp Delay(d),s/veh	84.5	0.0	134.9	57.2	0.0	34.1	31.2	0.0	55.8	46.4	0.0	39.0
LnGrp LOS	F		F	E		C	C		E	D		D
Approach Vol, veh/h		1034			580			416			279	
Approach Delay, s/veh		127.9			36.5			50.2			44.0	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	43.7		17.4	12.0	39.4		25.2
Change Period (Y+Rc), s	3.5	6.0		5.5	3.5	6.0		5.5
Max Green Setting (Gmax), s	8.5	34.0		17.0	8.5	44.0		22.0
Max Q Clear Time (g_c+I1), s	5.3	39.7		11.4	9.5	26.6		19.2
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	6.8		0.4

Intersection Summary												
HCM 2010 Ctrl Delay			80.8									
HCM 2010 LOS			F									

Two Way Analysis cannot be performed on Signalized Intersection.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	12	667	300	44	376	327	129	24
v/c Ratio	0.10	0.79	0.36	0.30	0.40	0.71	0.26	0.14
Control Delay	47.4	30.0	6.3	48.8	16.2	43.3	21.4	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	30.0	6.3	48.8	16.2	43.3	21.4	35.8
Queue Length 50th (ft)	6	260	17	21	81	155	28	10
Queue Length 95th (ft)	23	479	54	65	270	#258	61	28
Internal Link Dist (ft)		789			689		624	353
Turn Bay Length (ft)	225		225	350		150		
Base Capacity (vph)	170	1068	997	179	1142	463	493	480
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.62	0.30	0.25	0.33	0.71	0.26	0.05

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	507	228	37	315	1	216	34	51	1	14	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1712	1845	1863	1810	1840	1900	1827	1856	1900	1900	1710	1900
Adj Flow Rate, veh/h	12	667	300	44	375	1	327	52	77	1	19	4
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.76	0.76	0.76	0.84	0.84	0.84	0.66	0.66	0.66	0.70	0.72	0.72
Percent Heavy Veh, %	11	3	2	5	3	3	4	0	0	14	14	14
Cap, veh/h	19	846	711	57	880	2	383	149	220	2	32	7
Arrive On Green	0.01	0.46	0.46	0.03	0.48	0.48	0.22	0.22	0.22	0.02	0.02	0.02
Sat Flow, veh/h	1630	1845	1549	1723	1834	5	1740	676	1001	69	1311	276
Grp Volume(v), veh/h	12	667	300	44	0	376	327	0	129	24	0	0
Grp Sat Flow(s),veh/h/ln	1630	1845	1549	1723	0	1839	1740	0	1676	1655	0	0
Q Serve(g_s), s	0.5	21.3	9.0	1.8	0.0	9.3	12.5	0.0	4.5	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	21.3	9.0	1.8	0.0	9.3	12.5	0.0	4.5	1.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.60	0.04		0.17
Lane Grp Cap(c), veh/h	19	846	711	57	0	882	383	0	369	40	0	0
V/C Ratio(X)	0.62	0.79	0.42	0.77	0.00	0.43	0.85	0.00	0.35	0.60	0.00	0.00
Avail Cap(c_a), veh/h	188	1178	989	199	0	1174	512	0	493	525	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.1	15.9	12.6	33.3	0.0	11.8	26.0	0.0	22.9	33.5	0.0	0.0
Incr Delay (d2), s/veh	21.4	2.5	0.4	15.2	0.0	0.3	9.4	0.0	0.4	10.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	11.3	3.9	1.1	0.0	4.8	7.0	0.0	2.1	0.6	0.0	0.0
LnGrp Delay(d),s/veh	55.5	18.4	13.0	48.5	0.0	12.1	35.4	0.0	23.3	43.6	0.0	0.0
LnGrp LOS	E	B	B	D		B	D		C	D		
Approach Vol, veh/h		979			420			456			24	
Approach Delay, s/veh		17.2			15.9			32.0			43.6	
Approach LOS		B			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	37.5		5.7	4.8	39.0		19.9
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.6
Max Green Setting (Gmax), s	8.0	44.3		22.0	8.0	44.3		20.4
Max Q Clear Time (g_c+I1), s	3.8	23.3		3.0	2.5	11.3		14.5
Green Ext Time (p_c), s	0.0	8.6		0.0	0.0	10.1		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		20.8
HCM 2010 LOS		C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	518	216	369	84	206
v/c Ratio	0.77	0.55	0.30	0.31	0.52
Control Delay	25.7	28.4	4.9	28.6	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	28.4	4.9	28.6	10.0
Queue Length 50th (ft)	135	60	36	24	0
Queue Length 95th (ft)	250	151	93	27	0
Internal Link Dist (ft)	1072		1309	739	
Turn Bay Length (ft)		360		150	
Base Capacity (vph)	1235	709	1723	620	648
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.30	0.21	0.14	0.32

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	352	21	173	295	27	66
Number	2	12	1	6	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1865	1900	1863	1863	1900	1759
Adj Flow Rate, veh/h	489	29	216	369	84	206
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.72	0.72	0.80	0.80	0.32	0.32
Percent Heavy Veh, %	2	2	2	2	0	8
Cap, veh/h	659	39	278	1151	319	264
Arrive On Green	0.38	0.38	0.16	0.62	0.18	0.18
Sat Flow, veh/h	1741	103	1774	1863	1810	1495
Grp Volume(v), veh/h	0	518	216	369	84	206
Grp Sat Flow(s),veh/h/ln	0	1844	1774	1863	1810	1495
Q Serve(g_s), s	0.0	11.8	5.7	4.6	1.9	6.4
Cycle Q Clear(g_c), s	0.0	11.8	5.7	4.6	1.9	6.4
Prop In Lane		0.06	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	699	278	1151	319	264
V/C Ratio(X)	0.00	0.74	0.78	0.32	0.26	0.78
Avail Cap(c_a), veh/h	0	1328	767	2300	670	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	13.0	19.7	4.4	17.3	19.1
Incr Delay (d2), s/veh	0.0	0.6	3.5	0.2	0.2	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	3.0	2.3	1.0	2.8
LnGrp Delay(d),s/veh	0.0	13.6	23.2	4.6	17.4	21.0
LnGrp LOS		B	C	A	B	C
Approach Vol, veh/h	518			585	290	
Approach Delay, s/veh	13.6			11.5	20.0	
Approach LOS	B			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.6	23.4		13.6		35.0		
Change Period (Y+Rc), s	4.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	21.0	35.0		18.0		60.0		
Max Q Clear Time (g_c+I1), s	7.7	13.8		8.4		6.6		
Green Ext Time (p_c), s	0.4	4.6		0.4		5.2		

Intersection Summary			
HCM 2010 Ctrl Delay		14.0	
HCM 2010 LOS		B	

Two Way Analysis cannot be performed on Signalized Intersection.

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	1153	1051	1139	1166	1085	1144	1136
Vehs Exited	1152	1066	1139	1179	1102	1150	1128
Starting Vehs	29	31	34	39	38	27	25
Ending Vehs	30	16	34	26	21	21	33
Travel Distance (mi)	1024	935	1013	1037	970	1027	1011
Travel Time (hr)	63.3	43.5	45.4	38.8	42.7	50.2	39.9
Total Delay (hr)	36.0	18.6	18.6	11.9	17.1	23.3	13.3
Total Stops	891	743	656	601	658	773	589
Fuel Used (gal)	38.0	31.7	33.7	33.3	32.2	35.3	32.7

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	1106	1142	1142	1127
Vehs Exited	1121	1150	1156	1133
Starting Vehs	27	39	31	31
Ending Vehs	12	31	17	25
Travel Distance (mi)	990	1011	1018	1004
Travel Time (hr)	44.0	54.3	45.2	46.7
Total Delay (hr)	18.2	27.7	18.0	20.3
Total Stops	680	815	690	710
Fuel Used (gal)	32.9	36.2	33.7	34.0

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6
Vehs Entered	229	209	207	242	215	231	197
Vehs Exited	233	219	222	262	232	238	197
Starting Vehs	29	31	34	39	38	27	25
Ending Vehs	25	21	19	19	21	20	25
Travel Distance (mi)	213	192	194	227	202	217	177
Travel Time (hr)	5.6	5.1	5.2	6.2	5.7	5.8	4.8
Total Delay (hr)	0.6	0.5	0.4	0.7	0.6	0.6	0.5
Total Stops	53	52	54	70	64	71	57
Fuel Used (gal)	6.5	5.7	5.7	6.7	6.1	6.5	5.3

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	7	8	9	Avg
Vehs Entered	235	220	217	221
Vehs Exited	237	242	230	231
Starting Vehs	27	39	31	31
Ending Vehs	25	17	18	22
Travel Distance (mi)	220	207	199	205
Travel Time (hr)	5.9	5.7	5.7	5.6
Total Delay (hr)	0.7	0.6	0.7	0.6
Total Stops	51	60	74	61
Fuel Used (gal)	6.4	6.3	6.0	6.1

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	488	432	453	445	425	473	447
Vehs Exited	334	338	339	377	325	359	357
Starting Vehs	25	21	19	19	21	20	25
Ending Vehs	179	115	133	87	121	134	115
Travel Distance (mi)	341	336	345	362	325	357	355
Travel Time (hr)	26.7	20.6	18.2	16.4	18.0	20.6	16.9
Total Delay (hr)	17.3	11.3	8.8	6.4	8.9	10.9	7.1
Total Stops	494	436	356	319	395	446	300
Fuel Used (gal)	13.2	12.1	11.9	11.9	11.2	12.6	11.7

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	431	479	462	454
Vehs Exited	336	344	358	346
Starting Vehs	25	17	18	22
Ending Vehs	120	152	122	130
Travel Distance (mi)	327	350	360	346
Travel Time (hr)	19.5	24.2	18.2	19.9
Total Delay (hr)	10.4	14.5	8.2	10.4
Total Stops	398	450	352	395
Fuel Used (gal)	11.5	13.3	11.8	12.1

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6
Vehs Entered	228	206	220	241	216	203	236
Vehs Exited	376	304	330	301	317	315	319
Starting Vehs	179	115	133	87	121	134	115
Ending Vehs	31	17	23	27	20	22	32
Travel Distance (mi)	282	221	244	237	234	236	243
Travel Time (hr)	25.5	12.6	15.4	10.4	13.6	17.8	11.9
Total Delay (hr)	17.5	6.3	8.5	4.1	7.2	11.2	5.1
Total Stops	273	194	172	138	155	198	172
Fuel Used (gal)	12.6	8.4	9.4	8.1	8.8	9.8	8.8

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	7	8	9	Avg
Vehs Entered	218	203	228	221
Vehs Exited	319	332	324	324
Starting Vehs	120	152	122	130
Ending Vehs	19	23	26	23
Travel Distance (mi)	239	240	242	242
Travel Time (hr)	13.1	18.6	15.2	15.4
Total Delay (hr)	6.5	11.9	8.3	8.7
Total Stops	173	239	194	190
Fuel Used (gal)	8.9	10.3	9.4	9.4

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6
Vehs Entered	208	204	259	238	229	237	256
Vehs Exited	209	205	248	239	228	238	255
Starting Vehs	31	17	23	27	20	22	32
Ending Vehs	30	16	34	26	21	21	33
Travel Distance (mi)	188	186	229	210	209	217	235
Travel Time (hr)	5.4	5.2	6.5	5.8	5.4	5.9	6.2
Total Delay (hr)	0.6	0.6	0.8	0.6	0.4	0.6	0.7
Total Stops	71	61	74	74	44	58	60
Fuel Used (gal)	5.7	5.6	6.7	6.6	6.1	6.4	7.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	7	8	9	Avg
Vehs Entered	222	240	235	233
Vehs Exited	229	232	244	232
Starting Vehs	19	23	26	23
Ending Vehs	12	31	17	25
Travel Distance (mi)	205	215	217	211
Travel Time (hr)	5.5	5.8	6.1	5.8
Total Delay (hr)	0.6	0.6	0.7	0.6
Total Stops	58	66	70	63
Fuel Used (gal)	6.0	6.3	6.6	6.3

9: Pleasant Grove Access (Signal) & Green Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.3	0.3	1.2	0.8	2.3	0.3	0.9
Total Del/Veh (s)	13.7	11.8	128.5	46.1	19.7	6.0	59.8

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	62.1

Intersection: 9: Pleasant Grove Access (Signal) & Green Valley Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	L	T	L	R
Maximum Queue (ft)	216	450	2331	109	82
Average Queue (ft)	67	191	473	34	17
95th Queue (ft)	149	486	1843	82	55
Link Distance (ft)	1117		3848		783
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		410		150	
Storage Blk Time (%)		21	0	0	
Queuing Penalty (veh)		105	0	0	

Network Summary

Network wide Queuing Penalty: 105

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	144	890	60	520	94	322	51	228
v/c Ratio	0.70	1.04	0.46	0.72	0.48	0.86	0.34	0.69
Control Delay	62.7	71.8	58.8	33.3	50.3	59.0	50.4	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	71.8	58.8	33.3	50.3	59.0	50.4	47.4
Queue Length 50th (ft)	91	~679	38	283	60	189	33	123
Queue Length 95th (ft)	136	#741	87	#503	77	219	65	#240
Internal Link Dist (ft)		877		789		492		524
Turn Bay Length (ft)	140		140		230			
Base Capacity (vph)	237	856	152	764	407	419	309	347
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	1.04	0.39	0.68	0.23	0.77	0.17	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	628	22	55	414	59	63	138	78	43	113	78
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1846	1900	1776	1845	1900	1845	1824	1900	1810	1823	1900
Adj Flow Rate, veh/h	144	860	30	60	455	65	94	206	116	51	135	93
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.73	0.73	0.73	0.91	0.91	0.91	0.67	0.67	0.67	0.84	0.84	0.84
Percent Heavy Veh, %	2	3	3	7	3	3	3	2	2	5	3	3
Cap, veh/h	176	839	29	76	659	94	131	231	130	88	186	128
Arrive On Green	0.10	0.47	0.47	0.04	0.42	0.42	0.07	0.21	0.21	0.05	0.19	0.19
Sat Flow, veh/h	1774	1772	62	1691	1574	225	1757	1096	617	1723	995	685
Grp Volume(v), veh/h	144	0	890	60	0	520	94	0	322	51	0	228
Grp Sat Flow(s),veh/h/ln	1774	0	1834	1691	0	1799	1757	0	1713	1723	0	1680
Q Serve(g_s), s	7.4	0.0	44.0	3.3	0.0	22.0	4.9	0.0	17.0	2.7	0.0	11.9
Cycle Q Clear(g_c), s	7.4	0.0	44.0	3.3	0.0	22.0	4.9	0.0	17.0	2.7	0.0	11.9
Prop In Lane	1.00		0.03	1.00		0.13	1.00		0.36	1.00		0.41
Lane Grp Cap(c), veh/h	176	0	868	76	0	753	131	0	361	88	0	313
V/C Ratio(X)	0.82	0.00	1.03	0.79	0.00	0.69	0.72	0.00	0.89	0.58	0.00	0.73
Avail Cap(c_a), veh/h	242	0	868	155	0	770	416	0	406	315	0	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.0	0.0	24.5	44.0	0.0	22.1	42.0	0.0	35.7	43.1	0.0	35.6
Incr Delay (d2), s/veh	12.5	0.0	37.1	12.8	0.0	3.4	2.7	0.0	18.6	2.3	0.0	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	31.1	1.8	0.0	11.5	2.4	0.0	9.9	1.3	0.0	6.1
LnGrp Delay(d),s/veh	53.5	0.0	61.6	56.7	0.0	25.5	44.7	0.0	54.3	45.4	0.0	42.8
LnGrp LOS	D		F	E		C	D		D	D		D
Approach Vol, veh/h		1034			580			416			279	
Approach Delay, s/veh		60.4			28.7			52.2			43.3	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	50.0	12.4	22.8	12.7	44.9	10.2	25.1
Change Period (Y+Rc), s	3.5	6.0	5.5	5.5	3.5	6.0	5.5	5.5
Max Green Setting (Gmax), s	8.5	44.0	22.0	17.0	12.7	39.8	17.0	22.0
Max Q Clear Time (g_c+I1), s	5.3	46.0	6.9	13.9	9.4	24.0	4.7	19.0
Green Ext Time (p_c), s	0.0	0.0	0.1	0.8	0.1	12.9	0.0	0.5

Intersection Summary		
HCM 2010 Ctrl Delay		48.9
HCM 2010 LOS		D