






















APPENDIX F:

**EXISTING PLUS APPROVED PROJECTS CONDITIONS
ANALYSIS OUTPUT SHEETS**

HCM 2010 Signalized Intersection Summary
 1: American Ave/W Country Club Dr & Balfour Rd

Near-Term
 Timing Plan: AM-Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	236	354	791	469	92	123	213	728	73	471	6
Future Volume (veh/h)	13	236	354	791	469	92	123	213	728	73	471	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	14	257	385	860	510	100	134	232	791	79	512	7
Adj No. of Lanes	1	2	0	2	2	0	1	1	2	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	33	509	433	646	1323	258	164	618	1628	101	544	7
Arrive On Green	0.02	0.28	0.28	0.18	0.44	0.44	0.09	0.34	0.34	0.06	0.30	0.30
Sat Flow, veh/h	1757	1845	1568	3514	3000	586	1757	1845	3136	1757	1815	25
Grp Volume(v), veh/h	14	257	385	860	313	297	134	232	791	79	0	519
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1741	1757	1845	1568	1757	0	1840
Q Serve(g_s), s	0.9	12.7	25.6	20.0	12.4	12.5	8.1	10.4	17.6	4.8	0.0	29.9
Cycle Q Clear(g_c), s	0.9	12.7	25.6	20.0	12.4	12.5	8.1	10.4	17.6	4.8	0.0	29.9
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	33	509	433	646	813	768	164	618	1628	101	0	552
V/C Ratio(X)	0.42	0.50	0.89	1.33	0.38	0.39	0.82	0.38	0.49	0.78	0.00	0.94
Avail Cap(c_a), veh/h	323	848	721	646	848	801	323	618	1628	323	0	609
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.7	33.1	37.8	44.4	20.5	20.5	48.4	27.5	16.8	50.6	0.0	37.1
Incr Delay (d2), s/veh	3.1	0.3	4.4	159.4	0.1	0.1	3.8	0.1	0.1	4.8	0.0	21.1
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	6.5	11.6	23.9	6.4	6.1	4.1	5.3	7.6	2.5	0.0	18.4
LnGrp Delay(d),s/veh	55.8	33.4	42.2	203.8	20.6	20.6	52.3	27.6	16.9	55.3	0.0	58.2
LnGrp LOS	E	C	D	F	C	C	D	C	B	E		E
Approach Vol, veh/h		656		1470				1157			598	
Approach Delay, s/veh		39.0		127.8				23.2			57.8	
Approach LOS		D		F				C			E	
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	10.3	40.4	24.0	34.0	14.1	36.6	6.1	52.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	50.0	20.0	36.0	20.0	50.0				
Max Q Clear Time (g_c+I1), s	6.8	19.6	22.0	27.6	10.1	31.9	2.9	14.5				
Green Ext Time (p_c), s	0.1	3.5	0.0	2.4	0.2	0.7	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			70.8									
HCM 2010 LOS			E									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Foothill Dr/E Country Club Dr & Balfour Rd

Near-Term
 Timing Plan: AM-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	53	879	121	46	968	50	210	87	85	191	114	252
Future Volume (veh/h)	53	879	121	46	968	50	210	87	85	191	114	252
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	56	935	129	49	1030	53	223	93	90	203	121	268
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	1077	148	87	1151	59	264	510	434	244	136	300
Arrive On Green	0.06	0.34	0.34	0.05	0.33	0.33	0.15	0.28	0.28	0.14	0.27	0.27
Sat Flow, veh/h	1757	3174	438	1757	3479	179	1757	1845	1568	1757	512	1133
Grp Volume(v), veh/h	56	543	521	49	546	537	223	93	90	203	0	389
Grp Sat Flow(s),veh/h/ln	1757	1845	1767	1757	1845	1813	1757	1845	1568	1757	0	1645
Q Serve(g_s), s	2.5	22.5	22.5	2.2	23.0	23.0	10.1	3.1	3.6	9.2	0.0	18.6
Cycle Q Clear(g_c), s	2.5	22.5	22.5	2.2	23.0	23.0	10.1	3.1	3.6	9.2	0.0	18.6
Prop In Lane	1.00		0.25	1.00		0.10	1.00		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	101	626	599	87	610	600	264	510	434	244	0	436
V/C Ratio(X)	0.55	0.87	0.87	0.57	0.90	0.90	0.84	0.18	0.21	0.83	0.00	0.89
Avail Cap(c_a), veh/h	430	1130	1082	430	1130	1110	430	678	576	430	0	604
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	25.3	25.3	38.0	26.0	26.0	33.7	22.5	22.7	34.2	0.0	28.9
Incr Delay (d2), s/veh	1.7	1.5	1.6	2.1	1.9	2.0	3.9	0.1	0.1	2.8	0.0	9.8
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	1.3	11.7	11.3	1.1	12.0	11.8	5.2	1.6	1.6	4.6	0.0	9.6
LnGrp Delay(d),s/veh	39.2	26.8	26.8	40.1	27.9	27.9	37.7	22.6	22.7	37.1	0.0	38.7
LnGrp LOS	D	C	C	D	C	C	D	C	C	D		D
Approach Vol, veh/h		1120			1132			406			592	
Approach Delay, s/veh		27.4			28.5			30.9			38.1	
Approach LOS		C			C			C			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	15.3	26.6	8.0	31.7	16.3	25.6	8.7	31.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	50.0	20.0	30.0	20.0	50.0				
Max Q Clear Time (g_c+M), s	2.5	5.6	4.2	24.5	12.1	20.6	4.5	25.0				
Green Ext Time (p_c), s	0.3	1.3	0.0	2.1	0.3	1.0	2.0	2.0				
Intersection Summary												
HCM 2010 Ctrl Delay				30.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
3: John Muir Pkwy & Balfour Rd

Near-Term
Timing Plan: AM-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	985	129	44	1027	34	33	6	30	4	2	10
Future Volume (veh/h)	40	985	129	44	1027	34	33	6	30	4	2	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	42	1026	134	46	1070	35	34	6	31	4	2	10
Adj No. of Lanes	1	2	1	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	99	1669	709	212	1684	716	83	125	106	11	7	36
Arrive On Green	0.06	0.45	0.45	0.06	0.46	0.46	0.05	0.07	0.07	0.01	0.03	0.03
Sat Flow, veh/h	1757	3689	1568	3514	3689	1568	1757	1845	1568	1757	268	1340
Grp Volume(v), veh/h	42	1026	134	46	1070	35	34	6	31	4	0	12
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1845	1568	1757	0	1608
Q Serve(g_s), s	0.9	8.2	2.0	0.5	8.6	0.5	0.7	0.1	0.7	0.1	0.0	0.3
Cycle Q Clear(g_c), s	0.9	8.2	2.0	0.5	8.6	0.5	0.7	0.1	0.7	0.1	0.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.83
Lane Grp Cap(c), veh/h	99	1669	709	212	1684	716	83	125	106	11	0	43
V/C Ratio(X)	0.42	0.61	0.19	0.22	0.64	0.05	0.41	0.05	0.29	0.35	0.00	0.28
Avail Cap(c_a), veh/h	907	4761	2023	1814	4761	2023	907	1761	1497	907	0	1536
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	8.1	6.4	17.3	8.1	5.9	17.9	16.9	17.2	19.2	0.0	18.5
Incr Delay (d2), s/veh	1.1	0.1	0.0	0.2	0.1	0.0	1.2	0.1	0.6	6.6	0.0	1.3
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	0.5	4.2	0.8	0.2	4.3	0.2	0.4	0.1	0.3	0.1	0.0	0.1
LnGrp Delay(d),s/veh	18.7	8.2	6.4	17.5	8.2	5.9	19.1	16.9	17.7	25.8	0.0	19.8
LnGrp LOS	B	A	A	B	A	A	B	B	B	C		B
Approach Vol, veh/h		1202			1151			71			16	
Approach Delay, s/veh		8.4			8.5			18.3			21.3	
Approach LOS		A			A			B			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	4.3	6.6	6.3	21.5	5.8	5.0	6.2	21.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	37.0	20.0	50.0	20.0	37.0	20.0	50.0				
Max Q Clear Time (g_c+1), s	11.5	2.7	2.5	10.2	2.7	2.3	2.9	10.6				
Green Ext Time (p_c), s	0.0	0.1	0.1	7.1	0.0	0.1	0.0	7.1				
Intersection Summary												
HCM 2010 Ctrl Delay			8.8									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

4: Eagle Rock Ave/Cortona Wy & Balfour Rd

Near-Term
Timing Plan: AM-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	952	9	308	1074	44	4	29	300	114	28	38
Future Volume (veh/h)	47	952	9	308	1074	44	4	29	300	114	28	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	52	1046	10	338	1180	48	4	32	330	125	31	42
Adj No. of Lanes	1	2	1	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	87	1332	566	435	1605	682	11	440	374	158	229	310
Arrive On Green	0.05	0.36	0.36	0.12	0.43	0.43	0.01	0.24	0.24	0.09	0.32	0.32
Sat Flow, veh/h	1757	3689	1568	3514	3689	1568	1757	1845	1568	1757	711	963
Grp Volume(v), veh/h	52	1046	10	338	1180	48	4	32	330	125	0	73
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1845	1568	1757	0	1675
Q Serve(g_s), s	2.5	21.7	0.4	8.0	22.8	1.5	0.2	1.2	17.4	6.0	0.0	2.6
Cycle Q Clear(g_c), s	2.5	21.7	0.4	8.0	22.8	1.5	0.2	1.2	17.4	6.0	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	87	1332	566	435	1605	682	11	440	374	158	0	539
V/C Ratio(X)	0.60	0.79	0.02	0.78	0.74	0.07	0.36	0.07	0.88	0.79	0.00	0.14
Avail Cap(c_a), veh/h	410	2154	915	821	2154	915	410	905	769	410	0	821
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.8	24.4	17.6	36.4	20.1	14.1	42.4	25.3	31.5	38.2	0.0	20.6
Incr Delay (d2), s/veh	2.4	0.4	0.0	1.2	0.5	0.0	7.0	0.0	2.8	3.3	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	1.3	11.1	0.2	3.9	11.6	0.7	0.1	0.6	7.8	3.0	0.0	1.2
LnGrp Delay(d),s/veh	42.2	24.8	17.6	37.5	20.6	14.1	49.4	25.3	34.2	41.5	0.0	20.6
LnGrp LOS	D	C	B	D	C	B	D	C	C	D		C
Approach Vol, veh/h		1108			1566			366			198	
Approach Delay, s/veh		25.6			24.1			33.6			33.8	
Approach LOS		C			C			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	11.7	24.4	14.6	34.9	4.5	31.6	8.3	41.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	42.0	20.0	50.0	20.0	42.0	20.0	50.0				
Max Q Clear Time (g_c+1.0), s	19.4	19.4	10.0	23.7	2.2	4.6	4.5	24.8				
Green Ext Time (p_c), s	0.2	1.0	0.6	7.3	0.0	1.1	0.0	7.2				
Intersection Summary												
HCM 2010 Ctrl Delay				26.3								
HCM 2010 LOS				C								
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection

Intersection Delay, s/veh 16.8
Intersection LOS C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	78	33	139	461	12
Future Vol, veh/h	5	78	33	139	461	12
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	99	42	176	584	15
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.3	9.7	20.7
HCM LOS	A	A	C

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	6%	0%
Vol Thru, %	0%	100%	0%	97%
Vol Right, %	0%	0%	94%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	33	139	83	473
LT Vol	33	0	5	0
Through Vol	0	139	0	461
RT Vol	0	0	78	12
Lane Flow Rate	42	176	105	599
Geometry Grp	7	7	2	5
Degree of Util (X)	0.067	0.259	0.153	0.76
Departure Headway (Hd)	5.795	5.291	5.233	4.571
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	616	676	680	790
Service Time	3.554	3.049	3.305	2.614
HCM Lane V/C Ratio	0.068	0.26	0.154	0.758
HCM Control Delay	9	9.9	9.3	20.7
HCM Lane LOS	A	A	A	C
HCM 95th-tile Q	0.2	1	0.5	7.3

Intersection

Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	120	135	65	24	52	17	61	249	42	56	169	63
Future Vol, veh/h	120	135	65	24	52	17	61	249	42	56	169	63
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	158	178	86	32	68	22	80	328	55	74	222	83
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	17.1	12.8	26.1	19
HCM LOS	C	B	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	86%	0%	68%	0%	75%	0%	73%
Vol Right, %	0%	14%	0%	33%	0%	25%	0%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	291	120	200	24	69	56	232
LT Vol	61	0	120	0	24	0	56	0
Through Vol	0	249	0	135	0	52	0	169
RT Vol	0	42	0	65	0	17	0	63
Lane Flow Rate	80	383	158	263	32	91	74	305
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.173	0.758	0.353	0.534	0.077	0.205	0.162	0.611
Departure Headway (Hd)	7.744	7.129	8.055	7.308	8.811	8.115	7.91	7.202
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	463	505	447	492	406	441	453	501
Service Time	5.497	4.881	5.81	5.063	6.583	5.886	5.666	4.958
HCM Lane V/C Ratio	0.173	0.758	0.353	0.535	0.079	0.206	0.163	0.609
HCM Control Delay	12.1	29	15.2	18.2	12.3	13	12.2	20.7
HCM Lane LOS	B	D	C	C	B	B	B	C
HCM 95th-tile Q	0.6	6.6	1.6	3.1	0.2	0.8	0.6	4

Intersection

Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↘		↘	↘
Traffic Vol, veh/h	9	251	168	7	144	128
Future Vol, veh/h	9	251	168	7	144	128
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	344	230	10	197	175
Number of Lanes	1	0	1	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left NB			WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	12.7	11.8	11.7
HCM LOS	B	B	B

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	3%	100%	0%
Vol Thru, %	96%	0%	0%	100%
Vol Right, %	4%	97%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	175	260	144	128
LT Vol	0	9	144	0
Through Vol	168	0	0	128
RT Vol	7	251	0	0
Lane Flow Rate	240	356	197	175
Geometry Grp	5	2	7	7
Degree of Util (X)	0.368	0.493	0.347	0.284
Departure Headway (Hd)	5.524	4.985	6.331	5.824
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	650	727	568	617
Service Time	3.562	2.985	4.067	3.56
HCM Lane V/C Ratio	0.369	0.49	0.347	0.284
HCM Control Delay	11.8	12.7	12.4	10.9
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.7	2.8	1.5	1.2

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	74	95	55	52	76
Future Vol, veh/h	26	74	95	55	52	76
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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	32	91	117	68	64	94

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	373	151	0	0	185
Stage 1	151	-	-	-	-
Stage 2	222	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227
Pot Cap-1 Maneuver	626	893	-	-	1384
Stage 1	874	-	-	-	-
Stage 2	813	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	597	893	-	-	1384
Mov Cap-2 Maneuver	597	-	-	-	-
Stage 1	874	-	-	-	-
Stage 2	775	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	3.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	791	1384
HCM Lane V/C Ratio	-	-	0.156	0.046
HCM Control Delay (s)	-	-	10.4	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Intersection

Int Delay, s/veh 5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	1	34	0	0	70	0
Future Vol, veh/h	1	34	0	0	70	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	41	0	0	85	0

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	43	0	23
Stage 1	-	-	-	-	22
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1559	-	991
Stage 1	-	-	-	-	998
Stage 2	-	-	-	-	1020
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1559	-	991
Mov Cap-2 Maneuver	-	-	-	-	991
Stage 1	-	-	-	-	998
Stage 2	-	-	-	-	1020

Approach

	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt

	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	991	-	-	1559	-
HCM Lane V/C Ratio	0.086	-	-	-	-
HCM Control Delay (s)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	33.6
Intersection LOS	D

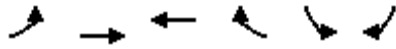
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↵		↵	↵	↵
Traffic Vol, veh/h	30	228	90	139	89	1	17	51	134	6	148	27
Future Vol, veh/h	30	228	90	139	89	1	17	51	134	6	148	27
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	42	317	125	193	124	1	24	71	186	8	206	38
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	2
HCM Control Delay	57.9	18.3	22	19.2
HCM LOS	F	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	28%	0%	72%	0%	99%	0%	100%	0%
Vol Right, %	0%	72%	0%	28%	0%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	185	30	318	139	90	6	148	27
LT Vol	17	0	30	0	139	0	6	0	0
Through Vol	0	51	0	228	0	89	0	148	0
RT Vol	0	134	0	90	0	1	0	0	27
Lane Flow Rate	24	257	42	442	193	125	8	206	38
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.062	0.596	0.099	0.966	0.489	0.298	0.022	0.512	0.086
Departure Headway (Hd)	9.401	8.354	8.587	7.872	9.117	8.594	9.489	8.97	8.244
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	381	432	417	459	396	418	377	401	434
Service Time	7.167	6.119	6.343	5.629	6.883	6.36	7.258	6.739	6.013
HCM Lane V/C Ratio	0.063	0.595	0.101	0.963	0.487	0.299	0.021	0.514	0.088
HCM Control Delay	12.8	22.8	12.3	62.2	20.4	15	12.5	20.8	11.8
HCM Lane LOS	B	C	B	F	C	B	B	C	B
HCM 95th-tile Q	0.2	3.8	0.3	11.9	2.6	1.2	0.1	2.8	0.3

HCM 2010 Signalized Intersection Summary
 17: Balfour Rd & SR-4 SB Off Ramp

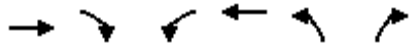
Near-Term
 Timing Plan: AM-Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖ ↗	↗ ↗	↗ ↗	↖ ↗	↖ ↗	↖ ↗		
Traffic Volume (veh/h)	267	1242	1015	134	334	394		
Future Volume (veh/h)	267	1242	1015	134	334	394		
Number	7	4	8	18	1	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	1845	1845	1845	1845	1845	1845		
Adj Flow Rate, veh/h	290	1350	1103	146	363	428		
Adj No. of Lanes	2	2	2	1	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	3	3	3	3	3	3		
Cap, veh/h	408	2267	1556	661	449	705		
Arrive On Green	0.12	0.61	0.42	0.42	0.26	0.26		
Sat Flow, veh/h	3408	3689	3689	1568	1757	2760		
Grp Volume(v), veh/h	290	1350	1103	146	363	428		
Grp Sat Flow(s),veh/h/ln	1704	1845	1845	1568	1757	1380		
Q Serve(g_s), s	5.0	13.7	15.2	3.7	11.9	8.4		
Cycle Q Clear(g_c), s	5.0	13.7	15.2	3.7	11.9	8.4		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	408	2267	1556	661	449	705		
V/C Ratio(X)	0.71	0.60	0.71	0.22	0.81	0.61		
Avail Cap(c_a), veh/h	925	4091	2819	1198	1251	1965		
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	26.1	7.2	14.7	11.3	21.5	20.2		
Incr Delay (d2), s/veh	0.9	0.1	0.2	0.1	1.3	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.4	6.8	7.7	1.6	5.9	6.4		
LnGrp Delay(d),s/veh	26.9	7.3	14.9	11.4	22.8	20.5		
LnGrp LOS	C	A	B	B	C	C		
Approach Vol, veh/h		1640	1249		791			
Approach Delay, s/veh		10.8	14.5		21.6			
Approach LOS		B	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				41.8		19.7	11.9	29.9
Change Period (Y+Rc), s				4.0		4.0	4.5	4.0
Max Green Setting (Gmax), s				68.2		43.8	16.7	47.0
Max Q Clear Time (g_c+I1), s				15.7		13.9	7.0	17.2
Green Ext Time (p_c), s				9.4		1.8	0.4	8.8
Intersection Summary								
HCM 2010 Ctrl Delay			14.4					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 18: SR-4 NB Off Ramp & Balfour Rd

Near-Term
 Timing Plan: AM-Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑		↑↑	↑↑	↑		
Traffic Volume (veh/h)	1046	530	0	1535	183	60		
Future Volume (veh/h)	1046	530	0	1535	183	60		
Number	4	14	3	8	5	12		
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	1845	1845	0	1845	1845	1845		
Adj Flow Rate, veh/h	1137	576	0	1668	199	65		
Adj No. of Lanes	2	1	0	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	3	3	0	3	3	3		
Cap, veh/h	2366	1006	0	2366	598	275		
Arrive On Green	0.64	0.64	0.00	0.64	0.18	0.18		
Sat Flow, veh/h	3689	1568	0	3689	3408	1568		
Grp Volume(v), veh/h	1137	576	0	1668	199	65		
Grp Sat Flow(s),veh/h/ln	1845	1568	0	1845	1704	1568		
Q Serve(g_s), s	7.0	9.1	0.0	12.9	2.2	1.6		
Cycle Q Clear(g_c), s	7.0	9.1	0.0	12.9	2.2	1.6		
Prop In Lane		1.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2366	1006	0	2366	598	275		
V/C Ratio(X)	0.48	0.57	0.00	0.70	0.33	0.24		
Avail Cap(c_a), veh/h	7174	3049	0	3798	3275	1506		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	4.1	4.4	0.0	5.1	15.8	15.5		
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.1	0.1	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	3.5	3.9	0.0	6.3	1.1	0.7		
LnGrp Delay(d),s/veh	4.1	4.6	0.0	5.3	15.9	15.7		
LnGrp LOS	A	A		A	B	B		
Approach Vol, veh/h	1713			1668	264			
Approach Delay, s/veh	4.3			5.3	15.8			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		11.7		32.0				32.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		42.0		85.0				45.0
Max Q Clear Time (g_c+I1), s		4.2		11.1				14.9
Green Ext Time (p_c), s		0.6		15.7				13.1
Intersection Summary								
HCM 2010 Ctrl Delay			5.6					
HCM 2010 LOS			A					
Notes								

User approved pedestrian interval to be less than phase max green.

Intersection

Intersection Delay, s/veh 9.1
 Intersection LOS A

Movement	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations		↶	↷			↶↷	
Traffic Vol, veh/h	17	74	65	22	2	133	48
Future Vol, veh/h	17	74	65	22	2	133	48
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	23	101	89	30	3	182	66
Number of Lanes	0	1	1	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	8.7	8.4	9.6
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	0%	73%
Vol Thru, %	81%	75%	0%
Vol Right, %	0%	25%	27%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	91	87	183
LT Vol	17	0	134
Through Vol	74	65	0
RT Vol	0	22	49
Lane Flow Rate	125	119	251
Geometry Grp	1	1	1
Degree of Util (X)	0.164	0.151	0.314
Departure Headway (Hd)	4.725	4.547	4.511
Convergence, Y/N	Yes	Yes	Yes
Cap	759	789	797
Service Time	2.754	2.576	2.537
HCM Lane V/C Ratio	0.165	0.151	0.315
HCM Control Delay	8.7	8.4	9.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.5	1.3

Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	123	51	113	64	34	240
Future Vol, veh/h	123	51	113	64	34	240
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	176	73	161	91	49	343






















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	253	0	-	0	631
Stage 1	-	-	-	-	207
Stage 2	-	-	-	-	424
Critical Hdwy	4.13	-	-	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	2.227	-	-	-	3.527
Pot Cap-1 Maneuver	1306	-	-	-	443
Stage 1	-	-	-	-	825
Stage 2	-	-	-	-	658
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1306	-	-	-	381
Mov Cap-2 Maneuver	-	-	-	-	381
Stage 1	-	-	-	-	825
Stage 2	-	-	-	-	566

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1306	-	-	-	381	831
HCM Lane V/C Ratio	0.135	-	-	-	0.127	0.413
HCM Control Delay (s)	8.2	0	-	-	15.8	12.3
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.4	2

HCM 2010 Signalized Intersection Summary
 1: American Ave/W Country Club Dr & Balfour Rd

Near-Term
 Timing Plan: PM-Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	389	68	313	394	159	85	265	682	187	159	31
Future Volume (veh/h)	52	389	68	313	394	159	85	265	682	187	159	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	57	423	74	340	428	173	92	288	741	203	173	34
Adj No. of Lanes	1	2	0	2	2	0	1	1	2	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	106	595	103	473	673	269	135	498	1269	253	506	99
Arrive On Green	0.06	0.19	0.19	0.13	0.27	0.27	0.08	0.27	0.27	0.14	0.34	0.34
Sat Flow, veh/h	1757	3063	532	3514	2509	1004	1757	1845	3136	1757	1498	294
Grp Volume(v), veh/h	57	253	244	340	314	287	92	288	741	203	0	207
Grp Sat Flow(s),veh/h/ln	1757	1845	1751	1757	1845	1668	1757	1845	1568	1757	0	1793
Q Serve(g_s), s	2.0	8.0	8.1	5.8	9.3	9.5	3.2	8.4	11.5	7.0	0.0	5.4
Cycle Q Clear(g_c), s	2.0	8.0	8.1	5.8	9.3	9.5	3.2	8.4	11.5	7.0	0.0	5.4
Prop In Lane	1.00		0.30	1.00		0.60	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	106	358	340	473	495	447	135	498	1269	253	0	605
V/C Ratio(X)	0.54	0.71	0.72	0.72	0.63	0.64	0.68	0.58	0.58	0.80	0.00	0.34
Avail Cap(c_a), veh/h	564	1481	1406	1129	1481	1339	564	889	1933	564	0	1037
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	23.4	23.5	25.8	20.1	20.1	28.0	19.7	14.5	25.8	0.0	15.4
Incr Delay (d2), s/veh	1.6	1.0	1.1	0.8	0.5	0.6	2.3	0.4	0.2	2.2	0.0	0.1
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	4.2	4.0	2.8	4.8	4.4	1.6	4.3	5.0	3.5	0.0	2.7
LnGrp Delay(d),s/veh	30.0	24.4	24.5	26.6	20.6	20.7	30.3	20.0	14.6	28.0	0.0	15.6
LnGrp LOS	C	C	C	C	C	C	C	C	B	C		B
Approach Vol, veh/h		554			941			1121			410	
Approach Delay, s/veh		25.0			22.8			17.3			21.7	
Approach LOS		C			C			B			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	13.0	20.8	12.4	16.1	8.8	25.0	7.8	20.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	50.0	20.0	36.0	20.0	50.0				
Max Q Clear Time (g_c+I1), s	9.0	13.5	7.8	10.1	5.2	7.4	4.0	11.5				
Green Ext Time (p_c), s	0.3	3.3	0.6	2.0	0.1	3.6	0.1	2.0				
Intersection Summary												
HCM 2010 Ctrl Delay			21.0									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 2: Foothill Dr/E Country Club Dr & Balfour Rd

Near-Term
 Timing Plan: PM-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	961	140	109	725	130	113	93	96	117	65	64
Future Volume (veh/h)	114	961	140	109	725	130	113	93	96	117	65	64
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	121	1022	149	116	771	138	120	99	102	124	69	68
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	297	1201	175	160	925	166	162	258	220	164	121	119
Arrive On Green	0.17	0.38	0.38	0.09	0.30	0.30	0.09	0.14	0.14	0.09	0.14	0.14
Sat Flow, veh/h	1757	3150	459	1757	3048	545	1757	1845	1568	1757	854	842
Grp Volume(v), veh/h	121	598	573	116	467	442	120	99	102	124	0	137
Grp Sat Flow(s),veh/h/ln	1757	1845	1764	1757	1845	1748	1757	1845	1568	1757	0	1696
Q Serve(g_s), s	3.3	16.1	16.2	3.5	12.8	12.8	3.6	2.7	3.3	3.7	0.0	4.1
Cycle Q Clear(g_c), s	3.3	16.1	16.2	3.5	12.8	12.8	3.6	2.7	3.3	3.7	0.0	4.1
Prop In Lane	1.00		0.26	1.00		0.31	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	297	703	672	160	560	531	162	258	220	164	0	239
V/C Ratio(X)	0.41	0.85	0.85	0.72	0.83	0.83	0.74	0.38	0.46	0.76	0.00	0.57
Avail Cap(c_a), veh/h	646	1696	1621	646	1696	1607	646	1017	865	646	0	936
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	15.4	15.4	24.0	17.7	17.7	24.0	21.3	21.5	24.1	0.0	21.8
Incr Delay (d2), s/veh	0.3	1.1	1.2	2.3	1.3	1.3	2.5	0.3	0.6	2.7	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	6	8.4	8.0	1.8	6.7	6.3	1.8	1.4	1.4	1.9	0.0	2.0
LnGrp Delay(d),s/veh	20.5	16.6	16.6	26.4	18.9	19.0	26.5	21.6	22.1	26.7	0.0	22.6
LnGrp LOS	C	B	B	C	B	B	C	C	C	C		C
Approach Vol, veh/h		1292			1025			321			261	
Approach Delay, s/veh		17.0			19.8			23.6			24.6	
Approach LOS		B			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	9.1	11.6	9.0	24.7	9.0	11.7	13.2	20.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	50.0	20.0	30.0	20.0	50.0				
Max Q Clear Time (g_c+1), s	11.7	5.3	5.5	18.2	5.6	6.1	5.3	14.8				
Green Ext Time (p_c), s	0.2	0.7	0.1	2.5	0.2	0.7	2.4	1.7				
Intersection Summary												
HCM 2010 Ctrl Delay				19.4								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 3: John Muir Pkwy & Balfour Rd

Near-Term
 Timing Plan: PM-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	1065	53	48	888	28	56	21	60	30	11	23
Future Volume (veh/h)	61	1065	53	48	888	28	56	21	60	30	11	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	64	1109	55	50	925	29	58	22	62	31	11	24
Adj No. of Lanes	1	2	1	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	1586	674	217	1544	656	120	212	180	75	46	101
Arrive On Green	0.07	0.43	0.43	0.06	0.42	0.42	0.07	0.11	0.11	0.04	0.09	0.09
Sat Flow, veh/h	1757	3689	1568	3514	3689	1568	1757	1845	1568	1757	517	1128
Grp Volume(v), veh/h	64	1109	55	50	925	29	58	22	62	31	0	35
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1845	1568	1757	0	1646
Q Serve(g_s), s	1.6	11.2	0.9	0.6	8.9	0.5	1.5	0.5	1.7	0.8	0.0	0.9
Cycle Q Clear(g_c), s	1.6	11.2	0.9	0.6	8.9	0.5	1.5	0.5	1.7	0.8	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	128	1586	674	217	1544	656	120	212	180	75	0	147
V/C Ratio(X)	0.50	0.70	0.08	0.23	0.60	0.04	0.48	0.10	0.34	0.41	0.00	0.24
Avail Cap(c_a), veh/h	770	4045	1719	1541	4045	1719	770	1496	1272	770	0	1335
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	10.6	7.7	20.4	10.3	7.9	20.5	18.1	18.6	21.3	0.0	19.3
Incr Delay (d2), s/veh	1.1	0.2	0.0	0.2	0.1	0.0	1.1	0.1	0.4	1.3	0.0	0.3
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	0.8	5.6	0.4	0.3	4.5	0.2	0.7	0.2	0.7	0.4	0.0	0.4
LnGrp Delay(d),s/veh	21.4	10.8	7.7	20.6	10.4	7.9	21.6	18.2	19.0	22.6	0.0	19.6
LnGrp LOS	C	B	A	C	B	A	C	B	B	C		B
Approach Vol, veh/h		1228			1004			142			66	
Approach Delay, s/veh		11.2			10.9			19.9			21.0	
Approach LOS		B			B			B			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	5.9	9.2	6.8	23.6	7.1	8.1	7.3	23.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	37.0	20.0	50.0	20.0	37.0	20.0	50.0				
Max Q Clear Time (g_c+1), s	11.8	3.7	2.6	13.2	3.5	2.9	3.6	10.9				
Green Ext Time (p_c), s	0.0	0.2	0.1	6.4	0.1	0.2	0.1	6.5				
Intersection Summary												
HCM 2010 Ctrl Delay				11.8								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary

4: Eagle Rock Ave/Cortona Wy & Balfour Rd

Near-Term
Timing Plan: PM-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1123	21	275	922	77	12	39	347	151	45	39
Future Volume (veh/h)	51	1123	21	275	922	77	12	39	347	151	45	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	56	1234	23	302	1013	85	13	43	381	166	49	43
Adj No. of Lanes	1	2	1	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	77	1397	594	372	1627	691	31	486	413	195	324	284
Arrive On Green	0.04	0.38	0.38	0.11	0.44	0.44	0.02	0.26	0.26	0.11	0.36	0.36
Sat Flow, veh/h	1757	3689	1568	3514	3689	1568	1757	1845	1568	1757	908	796
Grp Volume(v), veh/h	56	1234	23	302	1013	85	13	43	381	166	0	92
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1845	1568	1757	0	1704
Q Serve(g_s), s	3.6	35.6	1.1	9.6	24.1	3.6	0.8	2.0	26.9	10.6	0.0	4.2
Cycle Q Clear(g_c), s	3.6	35.6	1.1	9.6	24.1	3.6	0.8	2.0	26.9	10.6	0.0	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	77	1397	594	372	1627	691	31	486	413	195	0	609
V/C Ratio(X)	0.73	0.88	0.04	0.81	0.62	0.12	0.42	0.09	0.92	0.85	0.00	0.15
Avail Cap(c_a), veh/h	308	1620	688	617	1627	691	308	680	578	308	0	628
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	33.0	22.3	49.8	24.5	18.8	55.4	31.6	40.8	49.7	0.0	24.9
Incr Delay (d2), s/veh	4.9	5.0	0.0	1.6	0.6	0.0	3.3	0.0	13.7	7.1	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	1.8	19.0	0.5	4.7	12.4	1.6	0.4	1.0	13.2	5.5	0.0	2.0
LnGrp Delay(d),s/veh	58.7	38.0	22.3	51.5	25.1	18.9	58.6	31.6	54.5	56.7	0.0	24.9
LnGrp LOS	E	D	C	D	C	B	E	C	D	E		C
Approach Vol, veh/h		1313			1400			437			258	
Approach Delay, s/veh		38.6			30.4			52.4			45.4	
Approach LOS		D			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	16.7	34.0	16.1	47.1	6.0	44.7	9.0	54.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	42.0	20.0	50.0	20.0	42.0	20.0	50.0				
Max Q Clear Time (g_c+1/2), s	12.6	28.9	11.6	37.6	2.8	6.2	5.6	26.1				
Green Ext Time (p_c), s	0.2	1.1	0.5	5.6	0.0	1.3	0.1	7.4				
Intersection Summary												
HCM 2010 Ctrl Delay				37.5								
HCM 2010 LOS				D								

Intersection

Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	41	46	287	198	9
Future Vol, veh/h	8	41	46	287	198	9
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	10	52	58	363	251	11
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB		
Conflicting Lanes Left	1	1	0
Conflicting Approach Right		NB	EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	8.5	11.8	10
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	16%	0%
Vol Thru, %	0%	100%	0%	96%
Vol Right, %	0%	0%	84%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	287	49	207
LT Vol	46	0	8	0
Through Vol	0	287	0	198
RT Vol	0	0	41	9
Lane Flow Rate	58	363	62	262
Geometry Grp	7	7	2	5
Degree of Util (X)	0.087	0.494	0.086	0.337
Departure Headway (Hd)	5.402	4.9	5.011	4.634
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	664	737	714	776
Service Time	3.127	2.624	3.05	2.658
HCM Lane V/C Ratio	0.087	0.493	0.087	0.338
HCM Control Delay	8.6	12.3	8.5	10
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	2.8	0.3	1.5

Intersection

Intersection Delay, s/veh 16.6
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	90	116	33	23	88	6	69	205	27	48	146	116
Future Vol, veh/h	90	116	33	23	88	6	69	205	27	48	146	116
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	118	153	43	30	116	8	91	270	36	63	192	153
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	14.2	13	17.4	19.1
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	88%	0%	78%	0%	94%	0%	56%
Vol Right, %	0%	12%	0%	22%	0%	6%	0%	44%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	232	90	149	23	94	48	262
LT Vol	69	0	90	0	23	0	48	0
Through Vol	0	205	0	116	0	88	0	146
RT Vol	0	27	0	33	0	6	0	116
Lane Flow Rate	91	305	118	196	30	124	63	345
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.189	0.586	0.26	0.395	0.07	0.266	0.131	0.638
Departure Headway (Hd)	7.503	6.909	7.919	7.248	8.309	7.748	7.495	6.667
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	478	522	454	496	431	463	479	541
Service Time	5.248	4.653	5.668	4.996	6.065	5.504	5.238	4.41
HCM Lane V/C Ratio	0.19	0.584	0.26	0.395	0.07	0.268	0.132	0.638
HCM Control Delay	12	19	13.4	14.7	11.7	13.3	11.4	20.5
HCM Lane LOS	B	C	B	B	B	B	B	C
HCM 95th-tile Q	0.7	3.7	1	1.9	0.2	1.1	0.4	4.5

Intersection

Intersection Delay, s/veh 11
Intersection LOS B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↗		↘	↗
Traffic Vol, veh/h	12	218	172	18	91	115
Future Vol, veh/h	12	218	172	18	91	115
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	16	299	236	25	125	158
Number of Lanes	1	0	1	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left NB			WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	11.1	11.4	10.4
HCM LOS	B	B	B

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	5%	100%	0%
Vol Thru, %	91%	0%	0%	100%
Vol Right, %	9%	95%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	230	91	115
LT Vol	0	12	91	0
Through Vol	172	0	0	115
RT Vol	18	218	0	0
Lane Flow Rate	260	315	125	158
Geometry Grp	5	2	7	7
Degree of Util (X)	0.377	0.412	0.214	0.249
Departure Headway (Hd)	5.218	4.711	6.185	5.679
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	692	753	583	635
Service Time	3.225	2.807	3.891	3.385
HCM Lane V/C Ratio	0.376	0.418	0.214	0.249
HCM Control Delay	11.4	11.1	10.6	10.3
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.8	2	0.8	1

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	21	46	122	27	49	131
Future Vol, veh/h	21	46	122	27	49	131
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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	57	151	33	60	162

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	450	167	0	0	184
Stage 1	167	-	-	-	-
Stage 2	283	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227
Pot Cap-1 Maneuver	565	875	-	-	1385
Stage 1	860	-	-	-	-
Stage 2	763	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	541	875	-	-	1385
Mov Cap-2 Maneuver	541	-	-	-	-
Stage 1	860	-	-	-	-
Stage 2	730	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	733	1385
HCM Lane V/C Ratio	-	-	0.113	0.044
HCM Control Delay (s)	-	-	10.5	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

Intersection						
Int Delay, s/veh	4.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	3	47	0	6	52	3
Future Vol, veh/h	3	47	0	6	52	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	4	57	0	7	63	4

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	61	0	39
Stage 1	-	-	-	-	32
Stage 2	-	-	-	-	7
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1536	-	970
Stage 1	-	-	-	-	988
Stage 2	-	-	-	-	1013
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1536	-	970
Mov Cap-2 Maneuver	-	-	-	-	970
Stage 1	-	-	-	-	988
Stage 2	-	-	-	-	1013

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	974	-	-	1536	-
HCM Lane V/C Ratio	0.069	-	-	-	-
HCM Control Delay (s)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

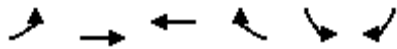
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	↶
Traffic Vol, veh/h	35	188	27	97	128	7	11	90	95	9	61	27
Future Vol, veh/h	35	188	27	97	128	7	11	90	95	9	61	27
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	49	261	38	135	178	10	15	125	132	13	85	38
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	2
HCM Control Delay	17.8	13.8	16.5	11.8
HCM LOS	C	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	49%	0%	87%	0%	95%	0%	100%	0%
Vol Right, %	0%	51%	0%	13%	0%	5%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	185	35	215	97	135	9	61	27
LT Vol	11	0	35	0	97	0	9	0	0
Through Vol	0	90	0	188	0	128	0	61	0
RT Vol	0	95	0	27	0	7	0	0	27
Lane Flow Rate	15	257	49	299	135	188	12	85	38
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.034	0.504	0.102	0.579	0.286	0.37	0.029	0.185	0.074
Departure Headway (Hd)	7.936	7.056	7.575	6.979	7.655	7.11	8.363	7.85	7.132
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	451	511	473	517	469	506	428	457	501
Service Time	5.68	4.799	5.321	4.724	5.404	4.859	6.118	5.605	4.886
HCM Lane V/C Ratio	0.033	0.503	0.104	0.578	0.288	0.372	0.028	0.186	0.076
HCM Control Delay	11	16.8	11.2	18.9	13.5	14	11.4	12.4	10.5
HCM Lane LOS	B	C	B	C	B	B	B	B	B
HCM 95th-tile Q	0.1	2.8	0.3	3.6	1.2	1.7	0.1	0.7	0.2

HCM 2010 Signalized Intersection Summary
 17: Balfour Rd & SR-4 SB Off Ramp

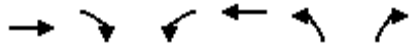
Near-Term
 Timing Plan: PM-Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖ ↗	↗ ↗	↗ ↗	↖ ↗	↖ ↗	↖ ↗		
Traffic Volume (veh/h)	171	1510	832	86	583	340		
Future Volume (veh/h)	171	1510	832	86	583	340		
Number	7	4	8	18	1	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	1845	1845	1845	1845	1845	1845		
Adj Flow Rate, veh/h	186	1641	904	93	634	370		
Adj No. of Lanes	2	2	2	1	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	3	3	3	3	3	3		
Cap, veh/h	262	1879	1392	592	690	1296		
Arrive On Green	0.08	0.51	0.38	0.38	0.39	0.39		
Sat Flow, veh/h	3408	3689	3689	1568	1757	2760		
Grp Volume(v), veh/h	186	1641	904	93	634	370		
Grp Sat Flow(s),veh/h/ln	1704	1845	1845	1568	1757	1380		
Q Serve(g_s), s	4.3	32.1	16.5	3.2	28.0	6.7		
Cycle Q Clear(g_c), s	4.3	32.1	16.5	3.2	28.0	6.7		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	262	1879	1392	592	690	1296		
V/C Ratio(X)	0.71	0.87	0.65	0.16	0.92	0.29		
Avail Cap(c_a), veh/h	288	2278	1989	845	895	1618		
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	36.8	17.7	21.0	16.8	23.6	13.3		
Incr Delay (d2), s/veh	5.6	3.0	0.2	0.0	10.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.2	17.0	8.4	1.4	15.6	6.4		
LnGrp Delay(d),s/veh	42.4	20.8	21.2	16.9	34.2	13.3		
LnGrp LOS	D	C	C	B	C	B		
Approach Vol, veh/h		1827	997		1004			
Approach Delay, s/veh		23.0	20.8		26.5			
Approach LOS		C	C		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				45.6		36.1	10.8	34.8
Change Period (Y+Rc), s				4.0		4.0	4.5	4.0
Max Green Setting (Gmax), s				50.4		41.6	6.9	44.0
Max Q Clear Time (g_c+I1), s				34.1		30.0	6.3	18.5
Green Ext Time (p_c), s				7.5		2.1	0.0	8.8
Intersection Summary								
HCM 2010 Ctrl Delay			23.3					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
 18: SR-4 NB Off Ramp & Balfour Rd

Near-Term
 Timing Plan: PM-Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗		↑↑	↖↗	↗		
Traffic Volume (veh/h)	1601	492	0	1240	189	187		
Future Volume (veh/h)	1601	492	0	1240	189	187		
Number	4	14	3	8	5	12		
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	1845	1845	0	1845	1845	1845		
Adj Flow Rate, veh/h	1740	535	0	1348	205	203		
Adj No. of Lanes	2	1	0	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	3	3	0	3	3	3		
Cap, veh/h	2500	1063	0	2500	596	274		
Arrive On Green	0.68	0.68	0.00	0.68	0.17	0.17		
Sat Flow, veh/h	3689	1568	0	3689	3408	1568		
Grp Volume(v), veh/h	1740	535	0	1348	205	203		
Grp Sat Flow(s),veh/h/ln	1845	1568	0	1845	1704	1568		
Q Serve(g_s), s	15.6	9.1	0.0	10.1	2.9	6.7		
Cycle Q Clear(g_c), s	15.6	9.1	0.0	10.1	2.9	6.7		
Prop In Lane		1.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2500	1063	0	2500	596	274		
V/C Ratio(X)	0.70	0.50	0.00	0.54	0.34	0.74		
Avail Cap(c_a), veh/h	5776	2455	0	2922	2637	1213		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	5.3	4.3	0.0	4.4	19.7	21.2		
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.1	0.1	1.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.8	3.9	0.0	4.9	1.3	3.0		
LnGrp Delay(d),s/veh	5.5	4.4	0.0	4.5	19.8	22.7		
LnGrp LOS	A	A		A	B	C		
Approach Vol, veh/h	2275			1348	408			
Approach Delay, s/veh	5.2			4.5	21.2			
Approach LOS	A			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		13.5		40.8				40.8
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		42.0		85.0				43.0
Max Q Clear Time (g_c+I1), s		8.7		17.6				12.1
Green Ext Time (p_c), s		0.9		19.2				15.3
Intersection Summary								
HCM 2010 Ctrl Delay			6.6					
HCM 2010 LOS			A					

Intersection

Intersection Delay, s/veh 8.4
Intersection LOS A

Movement	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations		↶	↷			↶↷	
Traffic Vol, veh/h	7	83	44	29	6	84	67
Future Vol, veh/h	7	83	44	29	6	84	67
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	9	109	58	38	8	111	88
Number of Lanes	0	1	1	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	8.4	7.9	8.7
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	0%	56%
Vol Thru, %	92%	60%	0%
Vol Right, %	0%	40%	44%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	90	73	157
LT Vol	7	0	87
Through Vol	83	44	0
RT Vol	0	29	70
Lane Flow Rate	118	96	207
Geometry Grp	1	1	1
Degree of Util (X)	0.149	0.115	0.246
Departure Headway (Hd)	4.542	4.318	4.285
Convergence, Y/N	Yes	Yes	Yes
Cap	791	832	841
Service Time	2.56	2.336	2.3
HCM Lane V/C Ratio	0.149	0.115	0.246
HCM Control Delay	8.4	7.9	8.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.4	1

Intersection

Int Delay, s/veh 5.7

Movement	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations		↶	↷			↶	↷
Traffic Vol, veh/h	81	57	44	55	1	50	116
Future Vol, veh/h	81	57	44	55	1	50	116
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	-	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	-	0	-
Grade, %	-	0	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	98	69	53	66	1	60	140






















Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	119	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	4.13	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.227	-	-
Pot Cap-1 Maneuver	1463	-	-
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1463	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	0
Stage 2	-	-	0

Approach	EB	WB	SB
HCM Control Delay, s	4.5	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1463	-	-	-	600	970
HCM Lane V/C Ratio	0.067	-	-	-	0.1	0.144
HCM Control Delay (s)	7.6	0	-	-	11.7	9.3
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	0.5

HCM 2010 Signalized Intersection Summary
 1: American Ave/W Country Club Dr & Balfour Rd

Near-Term
 Timing Plan: WKND-Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	182	4	49	220	86	10	10	77	90	13	16
Future Volume (veh/h)	12	182	4	49	220	86	10	10	77	90	13	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	13	194	4	52	234	91	11	11	82	96	14	17
Adj No. of Lanes	1	2	0	2	2	0	1	1	2	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	36	872	18	238	740	279	31	250	637	182	168	204
Arrive On Green	0.02	0.24	0.24	0.07	0.29	0.29	0.02	0.14	0.14	0.10	0.22	0.22
Sat Flow, veh/h	1757	3602	74	3514	2555	964	1757	1845	3136	1757	760	922
Grp Volume(v), veh/h	13	99	99	52	167	158	11	11	82	96	0	31
Grp Sat Flow(s),veh/h/ln	1757	1845	1832	1757	1845	1675	1757	1845	1568	1757	0	1682
Q Serve(g_s), s	0.3	1.5	1.5	0.5	2.5	2.6	0.2	0.2	0.8	1.8	0.0	0.5
Cycle Q Clear(g_c), s	0.3	1.5	1.5	0.5	2.5	2.6	0.2	0.2	0.8	1.8	0.0	0.5
Prop In Lane	1.00		0.04	1.00		0.58	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	36	446	443	238	534	485	31	250	637	182	0	373
V/C Ratio(X)	0.36	0.22	0.22	0.22	0.31	0.33	0.36	0.04	0.13	0.53	0.00	0.08
Avail Cap(c_a), veh/h	991	2602	2583	1982	2602	2362	991	1561	2867	991	0	1708
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	10.8	10.8	15.6	9.8	9.9	17.2	13.3	11.6	15.1	0.0	10.9
Incr Delay (d2), s/veh	2.3	0.1	0.1	0.2	0.1	0.1	2.6	0.0	0.0	0.9	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	0.8	0.8	0.2	1.3	1.2	0.1	0.1	0.3	0.9	0.0	0.2
LnGrp Delay(d),s/veh	19.4	10.9	10.9	15.8	10.0	10.0	19.9	13.4	11.6	16.0	0.0	11.0
LnGrp LOS	B	B	B	B	A	B	B	B	B	B		B
Approach Vol, veh/h		211			377			104			127	
Approach Delay, s/veh		11.4			10.8			12.7			14.7	
Approach LOS		B			B			B			B	
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	8.8	6.4	12.6	4.6	11.9	4.7	14.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	50.0	20.0	36.0	20.0	50.0				
Max Q Clear Time (g_c+I1), s	3.8	2.8	2.5	3.5	2.2	2.5	2.3	4.6				
Green Ext Time (p_c), s	0.1	0.3	0.1	0.9	0.0	0.3	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			11.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

2: Foothill Dr/E Country Club Dr & Balfour Rd

Near-Term
Timing Plan: WKND-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	337	22	133	340	135	23	21	115	137	30	16
Future Volume (veh/h)	12	337	22	133	340	135	23	21	115	137	30	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	12	344	22	136	347	138	23	21	117	140	31	16
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	196	809	51	200	602	235	59	282	240	202	269	139
Arrive On Green	0.11	0.24	0.24	0.11	0.24	0.24	0.03	0.15	0.15	0.12	0.23	0.23
Sat Flow, veh/h	1757	3432	219	1757	2527	988	1757	1845	1568	1757	1148	592
Grp Volume(v), veh/h	12	184	182	136	252	233	23	21	117	140	0	47
Grp Sat Flow(s),veh/h/ln	1757	1845	1806	1757	1845	1670	1757	1845	1568	1757	0	1740
Q Serve(g_s), s	0.3	3.5	3.6	3.1	5.0	5.2	0.5	0.4	2.9	3.2	0.0	0.9
Cycle Q Clear(g_c), s	0.3	3.5	3.6	3.1	5.0	5.2	0.5	0.4	2.9	3.2	0.0	0.9
Prop In Lane	1.00		0.12	1.00		0.59	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	196	435	426	200	439	398	59	282	240	202	0	408
V/C Ratio(X)	0.06	0.42	0.43	0.68	0.57	0.59	0.39	0.07	0.49	0.69	0.00	0.12
Avail Cap(c_a), veh/h	840	2205	2159	840	2205	1996	840	1323	1124	840	0	1248
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	13.6	13.6	17.8	14.1	14.1	19.8	15.2	16.2	17.8	0.0	12.6
Incr Delay (d2), s/veh	0.0	0.2	0.3	1.5	0.4	0.5	1.5	0.0	0.6	1.6	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	0.1	1.8	1.8	1.6	2.6	2.4	0.3	0.2	1.3	1.6	0.0	0.4
LnGrp Delay(d),s/veh	16.7	13.8	13.8	19.3	14.5	14.6	21.3	15.2	16.8	19.4	0.0	12.6
LnGrp LOS	B	B	B	B	B	B	C	B	B	B		B
Approach Vol, veh/h		378			621			161			187	
Approach Delay, s/veh		13.9			15.6			17.2			17.7	
Approach LOS		B			B			B			B	
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	8.8	10.4	8.8	13.9	5.4	13.8	8.7	14.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	50.0	20.0	30.0	20.0	50.0				
Max Q Clear Time (g_c+1), s	1.2	4.9	5.1	5.6	2.5	2.9	2.3	7.2				
Green Ext Time (p_c), s	0.2	0.4	0.2	0.6	0.0	0.4	0.6	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				15.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 3: John Muir Pkwy & Balfour Rd

Near-Term
 Timing Plan: WKND-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	536	11	23	564	4	33	17	34	26	7	12
Future Volume (veh/h)	19	536	11	23	564	4	33	17	34	26	7	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	20	564	12	24	594	4	35	18	36	27	7	13
Adj No. of Lanes	1	2	1	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	54	1170	497	127	1190	506	88	177	150	70	50	92
Arrive On Green	0.03	0.32	0.32	0.04	0.32	0.32	0.05	0.10	0.10	0.04	0.09	0.09
Sat Flow, veh/h	1757	3689	1568	3514	3689	1568	1757	1845	1568	1757	579	1076
Grp Volume(v), veh/h	20	564	12	24	594	4	35	18	36	27	0	20
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1845	1568	1757	0	1655
Q Serve(g_s), s	0.3	3.9	0.2	0.2	4.1	0.1	0.6	0.3	0.7	0.5	0.0	0.4
Cycle Q Clear(g_c), s	0.3	3.9	0.2	0.2	4.1	0.1	0.6	0.3	0.7	0.5	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	54	1170	497	127	1190	506	88	177	150	70	0	142
V/C Ratio(X)	0.37	0.48	0.02	0.19	0.50	0.01	0.40	0.10	0.24	0.38	0.00	0.14
Avail Cap(c_a), veh/h	1122	5890	2503	2244	5890	2503	1122	2179	1852	1122	0	1955
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	8.6	7.4	14.6	8.6	7.2	14.4	12.9	13.1	14.7	0.0	13.3
Incr Delay (d2), s/veh	1.6	0.1	0.0	0.3	0.1	0.0	1.1	0.1	0.3	1.3	0.0	0.2
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	0.2	2.0	0.1	0.1	2.1	0.0	0.3	0.1	0.3	0.2	0.0	0.2
LnGrp Delay(d),s/veh	16.5	8.7	7.4	14.9	8.7	7.2	15.5	13.0	13.4	15.9	0.0	13.4
LnGrp LOS	B	A	A	B	A	A	B	B	B	B		B
Approach Vol, veh/h		596			622			89			47	
Approach Delay, s/veh		9.0			8.9			14.1			14.9	
Approach LOS		A			A			B			B	
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	5.3	7.0	5.1	13.9	5.6	6.7	5.0	14.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	37.0	20.0	50.0	20.0	37.0	20.0	50.0				
Max Q Clear Time (g_c+1/2), s	11.5	2.7	2.2	5.9	2.6	2.4	2.3	6.1				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.8	0.0	0.1	0.0	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			9.5									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
 4: Eagle Rock Ave/Cortona Wy & Balfour Rd

Near-Term
 Timing Plan: WKND-Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	581	3	115	608	50	4	9	145	124	13	19
Future Volume (veh/h)	54	581	3	115	608	50	4	9	145	124	13	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	56	605	3	120	633	52	4	9	151	129	14	20
Adj No. of Lanes	1	2	1	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	119	978	416	369	1116	474	11	289	245	190	178	254
Arrive On Green	0.07	0.27	0.27	0.11	0.30	0.30	0.01	0.16	0.16	0.11	0.26	0.26
Sat Flow, veh/h	1757	3689	1568	3514	3689	1568	1757	1845	1568	1757	688	983
Grp Volume(v), veh/h	56	605	3	120	633	52	4	9	151	129	0	34
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1845	1568	1757	0	1671
Q Serve(g_s), s	1.3	6.3	0.1	1.4	6.3	1.0	0.1	0.2	3.9	3.1	0.0	0.7
Cycle Q Clear(g_c), s	1.3	6.3	0.1	1.4	6.3	1.0	0.1	0.2	3.9	3.1	0.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	119	978	416	369	1116	474	11	289	245	190	0	432
V/C Ratio(X)	0.47	0.62	0.01	0.32	0.57	0.11	0.35	0.03	0.62	0.68	0.00	0.08
Avail Cap(c_a), veh/h	801	4207	1788	1603	4207	1788	801	1767	1502	801	0	1601
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	14.2	11.9	18.2	12.9	11.0	21.7	15.7	17.3	18.8	0.0	12.3
Incr Delay (d2), s/veh	1.1	0.2	0.0	0.2	0.2	0.0	6.6	0.0	0.9	1.6	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	0.7	3.2	0.0	0.7	3.2	0.5	0.1	0.1	1.7	1.6	0.0	0.3
LnGrp Delay(d),s/veh	20.8	14.4	11.9	18.4	13.0	11.1	28.3	15.7	18.2	20.4	0.0	12.3
LnGrp LOS	C	B	B	B	B	B	C	B	B	C		B
Approach Vol, veh/h		664			805			164			163	
Approach Delay, s/veh		14.9			13.7			18.3			18.7	
Approach LOS		B			B			B			B	
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	8.8	10.9	8.6	15.6	4.3	15.3	7.0	17.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	42.0	20.0	50.0	20.0	42.0	20.0	50.0				
Max Q Clear Time (g_c+1), s	11.5	5.9	3.4	8.3	2.1	2.7	3.3	8.3				
Green Ext Time (p_c), s	0.2	0.4	0.2	3.3	0.0	0.4	0.1	3.3				
Intersection Summary												
HCM 2010 Ctrl Delay				15.0								
HCM 2010 LOS				B								

Intersection

Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	38	35	130	148	2
Future Vol, veh/h	1	38	35	130	148	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	40	36	135	154	2
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB	EB	
Conflicting Lanes Right	2	0	1
HCM Control Delay	7.3	8.4	8.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	3%	0%
Vol Thru, %	0%	100%	0%	99%
Vol Right, %	0%	0%	97%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	130	39	150
LT Vol	35	0	1	0
Through Vol	0	130	0	148
RT Vol	0	0	38	2
Lane Flow Rate	36	135	41	156
Geometry Grp	7	7	2	5
Degree of Util (X)	0.053	0.177	0.047	0.184
Departure Headway (Hd)	5.202	4.701	4.123	4.238
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	686	760	874	836
Service Time	2.951	2.45	2.123	2.322
HCM Lane V/C Ratio	0.052	0.178	0.047	0.187
HCM Control Delay	8.2	8.5	7.3	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.1	0.7

Intersection

Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	78	6	5	42	8	5	67	5	7	63	102
Future Vol, veh/h	84	78	6	5	42	8	5	67	5	7	63	102
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	88	82	6	5	44	8	5	71	5	7	66	107
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.1	8.5	8.7	9
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	93%	0%	93%	0%	84%	0%	38%
Vol Right, %	0%	7%	0%	7%	0%	16%	0%	62%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	72	84	84	5	50	7	165
LT Vol	5	0	84	0	5	0	7	0
Through Vol	0	67	0	78	0	42	0	63
RT Vol	0	5	0	6	0	8	0	102
Lane Flow Rate	5	76	88	88	5	53	7	174
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.009	0.112	0.141	0.128	0.009	0.077	0.012	0.233
Departure Headway (Hd)	5.852	5.3	5.76	5.208	5.902	5.286	5.761	4.824
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	611	675	622	687	605	675	621	743
Service Time	3.593	3.041	3.506	2.953	3.655	3.039	3.496	2.559
HCM Lane V/C Ratio	0.008	0.113	0.141	0.128	0.008	0.079	0.011	0.234
HCM Control Delay	8.6	8.7	9.5	8.7	8.7	8.5	8.6	9
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.4	0.5	0.4	0	0.2	0	0.9

Intersection

Intersection Delay, s/veh 7.9
Intersection LOS A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	5	98	1	4	88
Future Vol, veh/h	1	5	98	1	4	88
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	5	108	1	4	97
Number of Lanes	1	0	1	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left NB			WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	7	7.8	8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	17%	100%	0%
Vol Thru, %	99%	0%	0%	100%
Vol Right, %	1%	83%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	6	4	88
LT Vol	0	1	4	0
Through Vol	98	0	0	88
RT Vol	1	5	0	0
Lane Flow Rate	109	7	4	97
Geometry Grp	5	2	7	7
Degree of Util (X)	0.125	0.007	0.006	0.124
Departure Headway (Hd)	4.131	3.963	5.116	4.616
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	866	909	701	778
Service Time	2.165	1.963	2.833	2.333
HCM Lane V/C Ratio	0.126	0.008	0.006	0.125
HCM Control Delay	7.8	7	7.9	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0	0	0.4

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	13	9	92	24	12	74
Future Vol, veh/h	13	9	92	24	12	74
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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	14	10	100	26	13	80

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	220	113	0	0	126	0
Stage 1	113	-	-	-	-	-
Stage 2	107	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	766	937	-	-	1454	-
Stage 1	909	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	759	937	-	-	1454	-
Mov Cap-2 Maneuver	759	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	823	1454
HCM Lane V/C Ratio	-	-	0.029	0.009
HCM Control Delay (s)	-	-	9.5	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection

Int Delay, s/veh 4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	3	45	1	5	60	0
Future Vol, veh/h	3	45	1	5	60	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	48	1	5	65	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	52	0	35
Stage 1	-	-	-	-	27
Stage 2	-	-	-	-	8
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1548	-	975
Stage 1	-	-	-	-	993
Stage 2	-	-	-	-	1012
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1548	-	974
Mov Cap-2 Maneuver	-	-	-	-	974
Stage 1	-	-	-	-	993
Stage 2	-	-	-	-	1011

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	974	-	-	1548	-
HCM Lane V/C Ratio	0.066	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	↰
Traffic Vol, veh/h	21	109	2	52	53	2	4	42	45	1	19	6
Future Vol, veh/h	21	109	2	52	53	2	4	42	45	1	19	6
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	24	127	2	60	62	2	5	49	52	1	22	7
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	2
HCM Control Delay	9	8.8	8.6	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	48%	0%	98%	0%	96%	0%	100%	0%
Vol Right, %	0%	52%	0%	2%	0%	4%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	87	21	111	52	55	1	19	6
LT Vol	4	0	21	0	52	0	1	0	0
Through Vol	0	42	0	109	0	53	0	19	0
RT Vol	0	45	0	2	0	2	0	0	6
Lane Flow Rate	5	101	24	129	60	64	1	22	7
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.008	0.142	0.039	0.186	0.097	0.093	0.002	0.034	0.009
Departure Headway (Hd)	5.932	5.064	5.696	5.182	5.75	5.224	6.073	5.57	4.865
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	603	706	628	692	623	685	588	640	732
Service Time	3.674	2.806	3.435	2.921	3.49	2.963	3.827	3.324	2.619
HCM Lane V/C Ratio	0.008	0.143	0.038	0.186	0.096	0.093	0.002	0.034	0.01
HCM Control Delay	8.7	8.6	8.7	9.1	9.1	8.5	8.8	8.5	7.7
HCM Lane LOS	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.5	0.1	0.7	0.3	0.3	0	0.1	0

Intersection

Intersection Delay, s/veh 7.4
Intersection LOS A

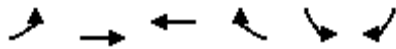
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	0	1	78	49	19
Future Vol, veh/h	35	0	1	78	49	19
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	39	0	1	88	55	21
Number of Lanes	1	0	1	2	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left SB		EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right NB			EB
Conflicting Lanes Right	3	0	1
HCM Control Delay	8.4	6.8	7.6
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	100%	0%	100%	46%
Vol Right, %	0%	0%	0%	0%	0%	54%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	39	39	35	33	35
LT Vol	1	0	0	35	0	0
Through Vol	0	39	39	0	33	16
RT Vol	0	0	0	0	0	19
Lane Flow Rate	1	44	44	39	37	40
Geometry Grp	7	7	7	7	8	8
Degree of Util (X)	0.002	0.057	0.035	0.058	0.048	0.048
Departure Headway (Hd)	5.16	4.659	2.906	5.317	4.746	4.369
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	689	763	1213	668	748	811
Service Time	2.924	2.423	0.668	3.092	2.519	2.142
HCM Lane V/C Ratio	0.001	0.058	0.036	0.058	0.049	0.049
HCM Control Delay	7.9	7.7	5.8	8.4	7.8	7.4
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.2	0.1	0.2	0.2	0.2

HCM 2010 Signalized Intersection Summary
 17: Balfour Rd & SR-4 SB Off Ramp

Near-Term
 Timing Plan: WKND-Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↶↷	↶↷	↶↷	↶	↶	↶↷		
Traffic Volume (veh/h)	130	752	503	113	633	316		
Future Volume (veh/h)	130	752	503	113	633	316		
Number	7	4	8	18	1	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	1845	1845	1845	1845	1845	1845		
Adj Flow Rate, veh/h	141	817	547	123	688	343		
Adj No. of Lanes	2	2	2	1	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	3	3	3	3	3	3		
Cap, veh/h	696	1307	1307	555	802	1259		
Arrive On Green	0.35	0.35	0.35	0.35	0.46	0.46		
Sat Flow, veh/h	1468	3689	3689	1568	1757	2760		
Grp Volume(v), veh/h	141	817	547	123	688	343		
Grp Sat Flow(s),veh/h/ln	734	1845	1845	1568	1757	1380		
Q Serve(g_s), s	3.4	7.8	4.7	2.3	14.8	3.3		
Cycle Q Clear(g_c), s	8.1	7.8	4.7	2.3	14.8	3.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	696	1307	1307	555	802	1259		
V/C Ratio(X)	0.20	0.63	0.42	0.22	0.86	0.27		
Avail Cap(c_a), veh/h	1916	4372	4372	1858	1707	2681		
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	13.4	11.3	10.3	9.5	10.3	7.1		
Incr Delay (d2), s/veh	0.1	0.2	0.1	0.1	1.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	3.9	2.4	1.0	7.3	1.2		
LnGrp Delay(d),s/veh	13.5	11.5	10.4	9.6	11.3	7.2		
LnGrp LOS	B	B	B	A	B	A		
Approach Vol, veh/h		958	670		1031			
Approach Delay, s/veh		11.8	10.3		9.9			
Approach LOS		B	B		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				18.9		23.3		18.9
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				50.0		41.0		50.0
Max Q Clear Time (g_c+I1), s				10.1		16.8		6.7
Green Ext Time (p_c), s				4.8		2.5		4.8
Intersection Summary								
HCM 2010 Ctrl Delay			10.7					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 18: SR-4 NB Off Ramp & Balfour Rd

Near-Term
 Timing Plan: WKND-Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗		↑↑	↖↗	↗		
Traffic Volume (veh/h)	1014	371	0	1181	107	129		
Future Volume (veh/h)	1014	371	0	1181	107	129		
Number	4	14	3	8	5	12		
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	1845	1845	0	1845	1845	1845		
Adj Flow Rate, veh/h	1102	403	0	1284	116	140		
Adj No. of Lanes	2	1	0	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	3	3	0	3	3	3		
Cap, veh/h	2093	889	0	2093	707	325		
Arrive On Green	0.57	0.57	0.00	0.57	0.21	0.21		
Sat Flow, veh/h	3689	1568	0	3689	3408	1568		
Grp Volume(v), veh/h	1102	403	0	1284	116	140		
Grp Sat Flow(s),veh/h/ln	1845	1568	0	1845	1704	1568		
Q Serve(g_s), s	6.5	5.3	0.0	8.2	1.0	2.8		
Cycle Q Clear(g_c), s	6.5	5.3	0.0	8.2	1.0	2.8		
Prop In Lane		1.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2093	889	0	2093	707	325		
V/C Ratio(X)	0.53	0.45	0.00	0.61	0.16	0.43		
Avail Cap(c_a), veh/h	5198	2209	0	5198	3938	1812		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	4.7	4.5	0.0	5.1	11.5	12.2		
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.1	0.0	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.2	2.3	0.0	4.1	0.5	1.2		
LnGrp Delay(d),s/veh	4.8	4.6	0.0	5.2	11.6	12.6		
LnGrp LOS	A	A		A	B	B		
Approach Vol, veh/h	1505			1284	256			
Approach Delay, s/veh	4.8			5.2	12.1			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		11.4		24.1				24.1
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		41.0		50.0				50.0
Max Q Clear Time (g_c+I1), s		4.8		8.5				10.2
Green Ext Time (p_c), s		0.5		10.0				9.9
Intersection Summary								
HCM 2010 Ctrl Delay				5.6				
HCM 2010 LOS				A				

Arterial Level of Service: EB Balfour Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
American Ave	II	39	13.1	44.8	57.9	0.11	7.1	F
Foothill Dr	II	45	42.4	40.5	82.9	0.48	20.9	D
John Muir Pkwy	II	35	21.2	18.2	39.4	0.17	15.5	E
Eagle Rock Ave	II	35	11.5	47.0	58.5	0.09	5.7	F
SR-4 SB Off Ramp	II	45	12.0	13.7	25.7	0.11	15.4	E
SR-4 NB Off Ramp	II	30	21.7	12.2	33.9	0.16	17.2	D
Total	II		121.9	176.4	298.3	1.13	13.6	E

Arterial Level of Service: WB Balfour Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
SR-4 NB Off Ramp	II	45	10.9	17.6	28.5	0.10	12.6	F
SR-4 SB Off Ramp	II	30	21.7	28.4	50.1	0.16	11.6	F
Cortona Wy	II	35	13.8	36.3	50.1	0.11	7.9	F
John Muir Pkwy	II	45	10.1	19.7	29.8	0.09	11.1	F
E Country Club Dr	II	45	18.5	41.8	60.3	0.17	10.1	F
W Country Club Dr	II	45	42.4	24.3	66.7	0.48	26.0	C
Total	II		117.4	168.1	285.5	1.11	14.1	E

Arterial Level of Service: EB Balfour Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
American Ave	II	39	13.1	34.6	47.7	0.11	8.6	F
Foothill Dr	II	45	42.4	38.0	80.4	0.48	21.6	D
John Muir Pkwy	II	35	21.2	20.2	41.4	0.17	14.7	E
Eagle Rock Ave	II	35	11.5	53.2	64.7	0.09	5.1	F
SR-4 SB Off Ramp	II	45	12.0	29.5	41.5	0.11	9.5	F
SR-4 NB Off Ramp	II	30	21.7	15.6	37.3	0.16	15.6	E
Total	II		121.9	191.1	313.0	1.13	13.0	F

Arterial Level of Service: WB Balfour Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
SR-4 NB Off Ramp	II	45	10.9	11.9	22.8	0.10	15.8	E
SR-4 SB Off Ramp	II	30	21.7	27.2	48.9	0.16	11.9	F
Cortona Wy	II	35	13.8	34.2	48.0	0.11	8.3	F
John Muir Pkwy	II	45	10.1	22.6	32.7	0.09	10.2	F
E Country Club Dr	II	45	18.5	38.5	57.0	0.17	10.7	F
W Country Club Dr	II	45	42.4	27.1	69.5	0.48	24.9	C
Total	II		117.4	161.5	278.9	1.11	14.4	E

Arterial Level of Service: EB Balfour Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
American Ave	II	39	13.1	15.5	28.6	0.11	14.3	E
Foothill Dr	II	45	42.4	27.1	69.5	0.48	24.9	C
John Muir Pkwy	II	35	21.2	16.9	38.1	0.17	16.0	E
Eagle Rock Ave	II	35	11.5	34.9	46.4	0.09	7.2	F
SR-4 SB Off Ramp	II	45	12.0	21.9	33.9	0.11	11.7	F
SR-4 NB Off Ramp	II	30	21.7	14.8	36.5	0.16	16.0	E
Total	II		121.9	131.1	253.0	1.13	16.1	E

Arterial Level of Service: WB Balfour Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
SR-4 NB Off Ramp	II	45	10.9	17.0	27.9	0.10	12.9	F
SR-4 SB Off Ramp	II	30	21.7	18.5	40.2	0.16	14.5	E
Cortona Wy	II	35	13.8	31.1	44.9	0.11	8.8	F
John Muir Pkwy	II	45	10.1	17.4	27.5	0.09	12.1	F
E Country Club Dr	II	45	18.5	20.5	39.0	0.17	15.6	E
W Country Club Dr	II	45	42.4	11.1	53.5	0.48	32.4	B
Total	II		117.4	115.6	233.0	1.11	17.2	D