

APPENDIX C
INTERSECTION ANALYSIS SHEETS

8: Mooney Blvd & Cameron Ave
HCM 2010 Signalized Intersection Summary

Existing-AM
12/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	126	9	82	160	78	10	549	84	47	423	48
Future Volume (veh/h)	67	126	9	82	160	78	10	549	84	47	423	48
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	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	78	147	10	122	239	116	11	610	93	53	475	54
Adj No. of Lanes	1	2	0	1	2	0	2	3	1	2	3	1
Peak Hour Factor	0.86	0.86	0.86	0.67	0.67	0.67	0.90	0.90	0.90	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	578	39	157	446	210	49	1429	445	186	1632	508
Arrive On Green	0.07	0.17	0.17	0.09	0.19	0.19	0.01	0.28	0.28	0.05	0.32	0.32
Sat Flow, veh/h	1774	3365	227	1774	2339	1099	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	78	77	80	122	179	176	11	610	93	53	475	54
Grp Sat Flow(s),veh/h/ln	1774	1770	1823	1774	1770	1669	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	1.9	1.7	1.7	3.0	4.0	4.2	0.1	4.3	2.0	0.7	3.1	1.1
Cycle Q Clear(g_c), s	1.9	1.7	1.7	3.0	4.0	4.2	0.1	4.3	2.0	0.7	3.1	1.1
Prop In Lane	1.00		0.12	1.00		0.66	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	304	313	157	337	318	49	1429	445	186	1632	508
V/C Ratio(X)	0.63	0.25	0.26	0.78	0.53	0.55	0.22	0.43	0.21	0.28	0.29	0.11
Avail Cap(c_a), veh/h	322	723	745	322	723	682	625	2102	654	625	2102	654
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	1.00	1.00
Uniform Delay (d), s/veh	19.9	15.8	15.8	19.6	16.0	16.1	21.5	12.9	12.1	20.0	11.2	10.5
Incr Delay (d2), s/veh	5.2	0.4	0.4	7.9	1.3	1.5	2.3	0.2	0.2	0.8	0.1	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	1.1	0.8	0.9	1.8	2.1	2.0	0.1	2.0	0.9	0.3	1.4	0.5
LnGrp Delay(d),s/veh	25.1	16.2	16.2	27.6	17.3	17.6	23.7	13.1	12.3	20.8	11.3	10.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h	235			477			714			582		
Approach Delay, s/veh	19.2			20.1			13.2			12.1		
Approach LOS	B			C			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	6.4	17.3	7.9	12.5	4.6	19.0	7.1	13.3				
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9				
Max Green Setting (Gmax), s	8.0	18.2	8.0	18.0	8.0	18.2	8.0	18.0				
Max Q Clear Time (g_c+l1), s	2.7	6.3	5.0	3.7	2.1	5.1	3.9	6.2				
Green Ext Time (p_c), s	0.0	6.1	0.1	2.4	0.0	6.5	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			15.2									
HCM 2010 LOS			B									

8: Mooney Blvd & Cameron Ave
Queues

Existing-AM
12/18/2017

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	78	157	122	355	11	610	93	53	475	54
v/c Ratio	0.27	0.22	0.40	0.37	0.02	0.44	0.17	0.10	0.27	0.08
Control Delay	26.2	19.8	28.5	14.4	25.5	17.3	1.8	24.3	12.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	19.8	28.5	14.4	25.5	17.3	1.8	24.3	12.5	0.2
Queue Length 50th (ft)	23	22	37	37	1	62	0	8	33	0
Queue Length 95th (ft)	62	46	68	51	9	101	10	24	75	0
Internal Link Dist (ft)		375		740		681			1763	
Turn Bay Length (ft)	170		250		250		250	250		200
Base Capacity (vph)	342	1530	342	1529	664	2238	783	664	2509	859
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.10	0.36	0.23	0.02	0.27	0.12	0.08	0.19	0.06
Intersection Summary										

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	220	10	32	357	13	17
Future Vol, veh/h	220	10	32	357	13	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	1	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	78	78	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	256	12	41	458	17	23

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	267
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	1294
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1294
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	686	-	-	1294	-
HCM Lane V/C Ratio	0.058	-	-	0.032	-
HCM Control Delay (s)	10.6	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

10: Stonebrook St & Cameron Ave
HCM 2010 TWSC

Existing-AM
12/18/2017

Intersection

Int Delay, s/veh 3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	206	3	265	396	1	137
Future Vol, veh/h	206	3	265	396	1	137
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	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	258	4	353	528	1	183

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1494
Stage 1	-	-	259
Stage 2	-	-	1235
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1303	136
Stage 1	-	-	784
Stage 2	-	-	274
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1303	84
Mov Cap-2 Maneuver	-	-	84
Stage 1	-	-	784
Stage 2	-	-	169

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	84	780	-	-	1303	-
HCM Lane V/C Ratio	0.016	0.234	-	-	0.271	-
HCM Control Delay (s)	48.5	11	-	-	8.8	0
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	0	0.9	-	-	1.1	-

8: Mooney Blvd & Cameron Ave
HCM 2010 Signalized Intersection Summary

Existing-PM
12/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	208	36	123	151	191	35	804	133	254	1019	119
Future Volume (veh/h)	180	208	36	123	151	191	35	804	133	254	1019	119
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	
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	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	214	248	43	135	166	210	40	914	151	282	1132	132
Adj No. of Lanes	1	2	0	1	2	0	2	3	1	2	3	1
Peak Hour Factor	0.84	0.84	0.84	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	708	121	172	350	313	140	1312	408	391	1683	524
Arrive On Green	0.13	0.23	0.23	0.10	0.20	0.20	0.04	0.26	0.26	0.11	0.33	0.33
Sat Flow, veh/h	1774	3024	517	1774	1770	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	214	144	147	135	166	210	40	914	151	282	1132	132
Grp Sat Flow(s),veh/h/ln	1774	1770	1772	1774	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	7.1	4.1	4.2	4.5	5.0	7.3	0.7	9.7	4.7	4.7	11.5	3.6
Cycle Q Clear(g_c), s	7.1	4.1	4.2	4.5	5.0	7.3	0.7	9.7	4.7	4.7	11.5	3.6
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	414	415	172	350	313	140	1312	408	391	1683	524
V/C Ratio(X)	0.90	0.35	0.36	0.78	0.47	0.67	0.29	0.70	0.37	0.72	0.67	0.25
Avail Cap(c_a), veh/h	237	532	532	237	532	476	460	1545	481	460	1683	524
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	1.00	1.00
Uniform Delay (d), s/veh	25.6	19.1	19.2	26.4	21.3	22.2	27.9	20.1	18.2	25.6	17.2	14.6
Incr Delay (d2), s/veh	33.8	0.5	0.5	11.1	1.0	2.5	1.1	1.1	0.6	4.5	1.1	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	5.7	2.0	2.1	2.7	2.5	3.4	0.3	4.7	2.1	2.5	5.5	1.6
LnGrp Delay(d),s/veh	59.4	19.6	19.7	37.5	22.3	24.7	29.0	21.2	18.8	30.1	18.3	14.9
LnGrp LOS	E	B	B	D	C	C	C	C	B	C	B	B
Approach Vol, veh/h	505				511				1105			
Approach Delay, s/veh	36.5				27.3				21.2			
Approach LOS	D				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	10.8	20.3	9.8	18.9	6.4	24.7	12.0	16.7				
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9				
Max Green Setting (Gmax), s	8.0	18.2	8.0	18.0	8.0	18.2	8.0	18.0				
Max Q Clear Time (g_c+l1), s	6.7	11.7	6.5	6.2	2.7	13.5	9.1	9.3				
Green Ext Time (p_c), s	0.1	3.7	0.0	3.0	0.0	4.2	0.0	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay	23.7											
HCM 2010 LOS	C											

8: Mooney Blvd & Cameron Ave
Queues

Existing-PM
12/18/2017

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	214	291	135	376	40	914	151	282	1132	132
v/c Ratio	0.91	0.40	0.60	0.54	0.11	0.64	0.27	0.63	0.54	0.18
Control Delay	72.4	22.3	39.3	13.6	26.7	21.7	5.1	33.3	16.4	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	22.3	39.3	13.6	26.7	21.7	5.1	33.3	16.4	3.5
Queue Length 50th (ft)	81	47	49	29	7	106	0	53	95	0
Queue Length 95th (ft)	#189	74	#120	64	20	152	34	#100	196	27
Internal Link Dist (ft)		375		740		681			1763	
Turn Bay Length (ft)	170		250		250		250	250		200
Base Capacity (vph)	234	1051	234	1114	455	1534	585	455	2094	743
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.28	0.58	0.34	0.09	0.60	0.26	0.62	0.54	0.18

Intersection Summary

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

9: Site Access & Cameron Ave
HCM 2010 TWSC

Existing-PM
12/18/2017

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	556	29	46	440	21	55
Future Vol, veh/h	556	29	46	440	21	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	1	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	579	30	48	458	24	64

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	609
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	966
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	966
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	563	-	-	966	-
HCM Lane V/C Ratio	0.157	-	-	0.05	-
HCM Control Delay (s)	12.6	-	-	8.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.2	-

10: Stonebrook St & Cameron Ave
HCM 2010 TWSC

Existing-PM
12/18/2017

Intersection						
Int Delay, s/veh	5.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	506	12	204	413	9	271
Future Vol, veh/h	506	12	204	413	9	271
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	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	97	97	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	538	13	210	426	10	301

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	551
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1019
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1019
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	20.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	115	538	-	-	1019	-
HCM Lane V/C Ratio	0.087	0.56	-	-	0.206	-
HCM Control Delay (s)	39.3	19.9	-	-	9.4	0
HCM Lane LOS	E	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	3.4	-	-	0.8	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	220	10	51	338	13	20	1	17	7	1	7
Future Vol, veh/h	13	220	10	51	338	13	20	1	17	7	1	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	1	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	78	78	78	75	75	75	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	256	12	65	433	17	27	1	23	8	1	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	0	267	0	0	640	873	134	731	870	225
Stage 1	-	-	-	-	-	-	292	292	-	572	572	-
Stage 2	-	-	-	-	-	-	348	581	-	159	298	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1107	-	-	1294	-	-	360	287	890	310	288	778
Stage 1	-	-	-	-	-	-	692	670	-	472	502	-
Stage 2	-	-	-	-	-	-	641	498	-	827	666	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1107	-	-	1294	-	-	338	269	890	286	270	778
Mov Cap-2 Maneuver	-	-	-	-	-	-	338	269	-	286	270	-
Stage 1	-	-	-	-	-	-	683	661	-	466	477	-
Stage 2	-	-	-	-	-	-	601	473	-	793	657	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1	13.7	14.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	463	1107	-	-	1294	-	-	286	630
HCM Lane V/C Ratio	0.109	0.014	-	-	0.051	-	-	0.027	0.014
HCM Control Delay (s)	13.7	8.3	-	-	7.9	-	-	17.9	10.8
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.2	-	-	0.1	0

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	556	29	90	396	29	63	1	55	31	1	31
Future Vol, veh/h	29	556	29	90	396	29	63	1	55	31	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	1	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	96	96	96	96	92	86	86	86	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	579	30	94	413	32	73	1	64	34	1	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	444	0	0	609	0	0	1051	1289	305	969	1288	222
Stage 1	-	-	-	-	-	-	657	657	-	616	616	-
Stage 2	-	-	-	-	-	-	394	632	-	353	672	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1112	-	-	966	-	-	181	162	691	208	163	782
Stage 1	-	-	-	-	-	-	420	460	-	445	480	-
Stage 2	-	-	-	-	-	-	602	472	-	637	453	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1112	-	-	966	-	-	156	142	691	170	143	782
Mov Cap-2 Maneuver	-	-	-	-	-	-	156	142	-	170	143	-
Stage 1	-	-	-	-	-	-	408	447	-	432	433	-
Stage 2	-	-	-	-	-	-	519	426	-	560	440	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.6	37.7	20.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	243	1112	-	-	966	-	-	170	686
HCM Lane V/C Ratio	0.569	0.028	-	-	0.097	-	-	0.198	0.051
HCM Control Delay (s)	37.7	8.3	-	-	9.1	-	-	31.3	10.5
HCM Lane LOS	E	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	3.2	0.1	-	-	0.3	-	-	0.7	0.2

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	220	10	51	338	19	20	1	17	11	1	11
Future Vol, veh/h	19	220	10	51	338	19	20	1	17	11	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	1	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	78	78	78	75	75	75	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	256	12	65	433	24	27	1	23	12	1	12

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	458	0	0	267	0	0	654	894	134	749	888	229
Stage 1	-	-	-	-	-	-	306	306	-	576	576	-
Stage 2	-	-	-	-	-	-	348	588	-	173	312	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1099	-	-	1294	-	-	352	279	890	300	281	774
Stage 1	-	-	-	-	-	-	679	660	-	470	500	-
Stage 2	-	-	-	-	-	-	641	494	-	812	656	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1099	-	-	1294	-	-	327	260	890	276	262	774
Mov Cap-2 Maneuver	-	-	-	-	-	-	327	260	-	276	262	-
Stage 1	-	-	-	-	-	-	665	647	-	461	475	-
Stage 2	-	-	-	-	-	-	598	469	-	774	643	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	0.6		1		14		14.4
HCM LOS					B		B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	452	1099	-	-	1294	-	-	276	666
HCM Lane V/C Ratio	0.112	0.02	-	-	0.051	-	-	0.043	0.02
HCM Control Delay (s)	14	8.3	-	-	7.9	-	-	18.6	10.5
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.2	-	-	0.1	0.1

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	556	29	90	396	43	63	1	55	47	1	47
Future Vol, veh/h	43	556	29	90	396	43	63	1	55	47	1	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	1	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	96	96	96	96	92	86	86	86	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	579	30	94	413	47	73	1	64	51	1	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	459	0	0	609	0	0	1082	1335	305	1007	1326	230
Stage 1	-	-	-	-	-	-	688	688	-	623	623	-
Stage 2	-	-	-	-	-	-	394	647	-	384	703	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1098	-	-	966	-	-	172	152	691	195	154	772
Stage 1	-	-	-	-	-	-	403	445	-	440	476	-
Stage 2	-	-	-	-	-	-	602	465	-	611	438	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1098	-	-	966	-	-	143	131	691	157	133	772
Mov Cap-2 Maneuver	-	-	-	-	-	-	143	131	-	157	133	-
Stage 1	-	-	-	-	-	-	386	426	-	421	430	-
Stage 2	-	-	-	-	-	-	506	420	-	529	419	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.5	43.6	24.4
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	225	1098	-	-	966	-	-	157	702
HCM Lane V/C Ratio	0.615	0.043	-	-	0.097	-	-	0.325	0.074
HCM Control Delay (s)	43.6	8.4	-	-	9.1	-	-	38.6	10.5
HCM Lane LOS	E	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	3.6	0.1	-	-	0.3	-	-	1.3	0.2

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	220	10	51	338	25	20	1	17	14	1	14
Future Vol, veh/h	25	220	10	51	338	25	20	1	17	14	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	1	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	78	78	78	75	75	75	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	256	12	65	433	32	27	1	23	15	1	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	465	0	0	267	0	0	668	916	134	767	906	233
Stage 1	-	-	-	-	-	-	320	320	-	580	580	-
Stage 2	-	-	-	-	-	-	348	596	-	187	326	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1093	-	-	1294	-	-	344	271	890	292	275	769
Stage 1	-	-	-	-	-	-	666	651	-	467	498	-
Stage 2	-	-	-	-	-	-	641	490	-	797	647	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1093	-	-	1294	-	-	317	251	890	267	254	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	251	-	267	254	-
Stage 1	-	-	-	-	-	-	648	634	-	455	473	-
Stage 2	-	-	-	-	-	-	595	465	-	755	630	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	1	14.2	14.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	441	1093	-	-	1294	-	-	267	677
HCM Lane V/C Ratio	0.115	0.027	-	-	0.051	-	-	0.057	0.024
HCM Control Delay (s)	14.2	8.4	-	-	7.9	-	-	19.3	10.4
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.2	-	-	0.2	0.1

Intersection												
Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	556	29	90	396	57	63	1	55	63	1	63
Future Vol, veh/h	57	556	29	90	396	57	63	1	55	63	1	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	1	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	96	96	96	96	92	86	86	86	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	579	30	94	413	62	73	1	64	68	1	68

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	474	0	0	609	0	0	1112	1380	305	1045	1364	237
Stage 1	-	-	-	-	-	-	718	718	-	631	631	-
Stage 2	-	-	-	-	-	-	394	662	-	414	733	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1084	-	-	966	-	-	163	143	691	183	146	764
Stage 1	-	-	-	-	-	-	386	431	-	436	473	-
Stage 2	-	-	-	-	-	-	602	457	-	586	424	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1084	-	-	966	-	-	131	122	691	146	124	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	122	-	146	124	-
Stage 1	-	-	-	-	-	-	364	406	-	411	427	-
Stage 2	-	-	-	-	-	-	493	413	-	500	400	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	1.5	50.7	30
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	209	1084	-	-	966	-	-	146	707
HCM Lane V/C Ratio	0.662	0.057	-	-	0.097	-	-	0.469	0.098
HCM Control Delay (s)	50.7	8.5	-	-	9.1	-	-	49.7	10.6
HCM Lane LOS	F	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	4	0.2	-	-	0.3	-	-	2.2	0.3

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	220	10	51	338	38	20	1	17	21	1	21
Future Vol, veh/h	38	220	10	51	338	38	20	1	17	21	1	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	1	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	78	78	78	75	75	75	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	256	12	65	433	49	27	1	23	23	1	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	482	0	0	267	0	0	698	963	134	805	944	241
Stage 1	-	-	-	-	-	-	350	350	-	588	588	-
Stage 2	-	-	-	-	-	-	348	613	-	217	356	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1077	-	-	1294	-	-	327	254	890	274	261	760
Stage 1	-	-	-	-	-	-	639	631	-	462	494	-
Stage 2	-	-	-	-	-	-	641	481	-	765	628	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1077	-	-	1294	-	-	295	231	890	248	238	760
Mov Cap-2 Maneuver	-	-	-	-	-	-	295	231	-	248	238	-
Stage 1	-	-	-	-	-	-	613	605	-	443	469	-
Stage 2	-	-	-	-	-	-	589	457	-	713	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.9	14.8	15.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	417	1077	-	-	1294	-	-	248	691
HCM Lane V/C Ratio	0.122	0.041	-	-	0.051	-	-	0.092	0.035
HCM Control Delay (s)	14.8	8.5	-	-	7.9	-	-	21	10.4
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.2	-	-	0.3	0.1

Intersection												
Int Delay, s/veh	14.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	556	29	90	396	86	63	1	55	94	1	94
Future Vol, veh/h	86	556	29	90	396	86	63	1	55	94	1	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	1	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	96	96	96	96	92	86	86	86	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	579	30	94	413	93	73	1	64	102	1	102

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	506	0	0	609	0	0	1175	1474	305	1124	1443	253
Stage 1	-	-	-	-	-	-	781	781	-	647	647	-
Stage 2	-	-	-	-	-	-	394	693	-	477	796	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1055	-	-	966	-	-	147	125	691	160	131	746
Stage 1	-	-	-	-	-	-	354	403	-	426	465	-
Stage 2	-	-	-	-	-	-	602	443	-	538	397	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1055	-	-	966	-	-	109	103	691	124	108	746
Mov Cap-2 Maneuver	-	-	-	-	-	-	109	103	-	124	108	-
Stage 1	-	-	-	-	-	-	323	367	-	388	420	-
Stage 2	-	-	-	-	-	-	468	400	-	444	362	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.4	73	58
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	178	1055	-	-	966	-	-	124	702
HCM Lane V/C Ratio	0.777	0.089	-	-	0.097	-	-	0.824	0.147
HCM Control Delay (s)	73	8.7	-	-	9.1	-	-	105.5	11
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	5.1	0.3	-	-	0.3	-	-	5	0.5

APPENDIX D
TRAFFIC SIGNAL WARRANTS

Warrant 3: Peak Hour

9: Site Access & Cameron Ave Existing Plus Project 10%

Intersection Information

	Major Street	Minor Street
Street Name	Cameron Ave	Site Access
Direction	EB/WB	NB/SB
Number of Lane:	2	2
Approach Speed	45	30

Warrant 3 Met? **No**

Details

Low Population? **No**

Condition A Met? **No**

Condition B Met? **No**

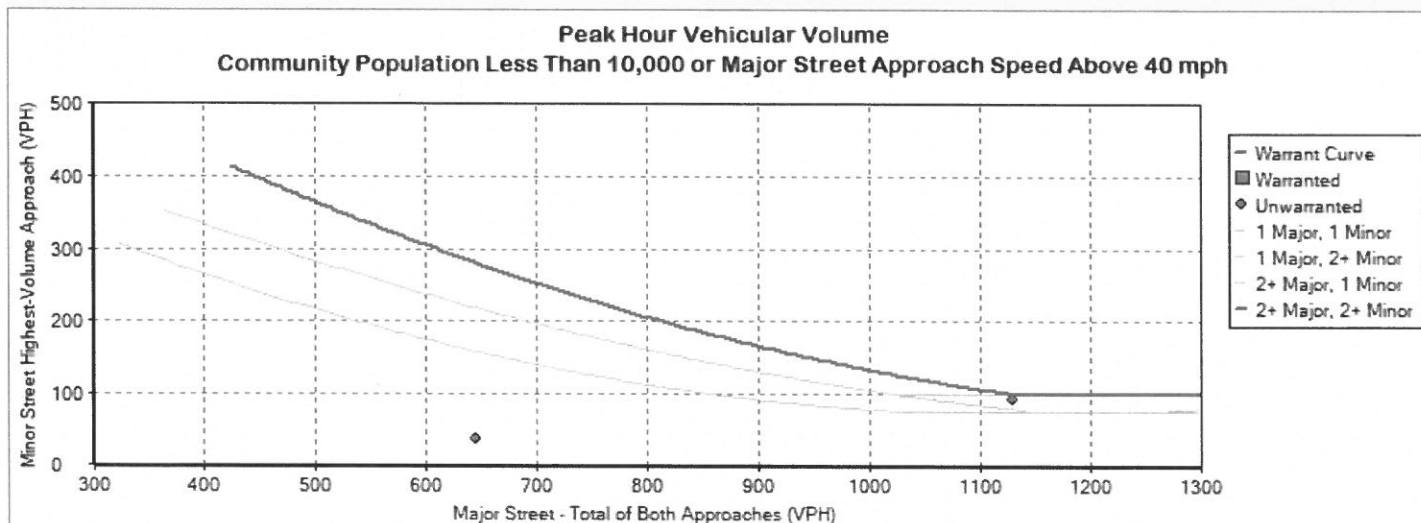
Notes 0 Hours met (1 required)

Notes 0 Hours met (1 required)

Minor Approach Time Delay Condition Met? **Not Met**

Minor Approach Volume Condition Met? **Met**

Total Entering Intersection Volume Condition Met? **Not Met**



Warrant 3: Peak Hour

9: Site Access & Cameron Ave / Existing Plus Project 15%

Intersection Information

	Major Street	Minor Street
Street Name	Cameron Ave	Site Access
Direction	EB/WB	NB/SB
Number of Lane:	2	2
Approach Speed	45	30

Warrant 3 Met? **No**

Details

Low Population? **No**

Condition A Met? **No**

Condition B Met? **No**

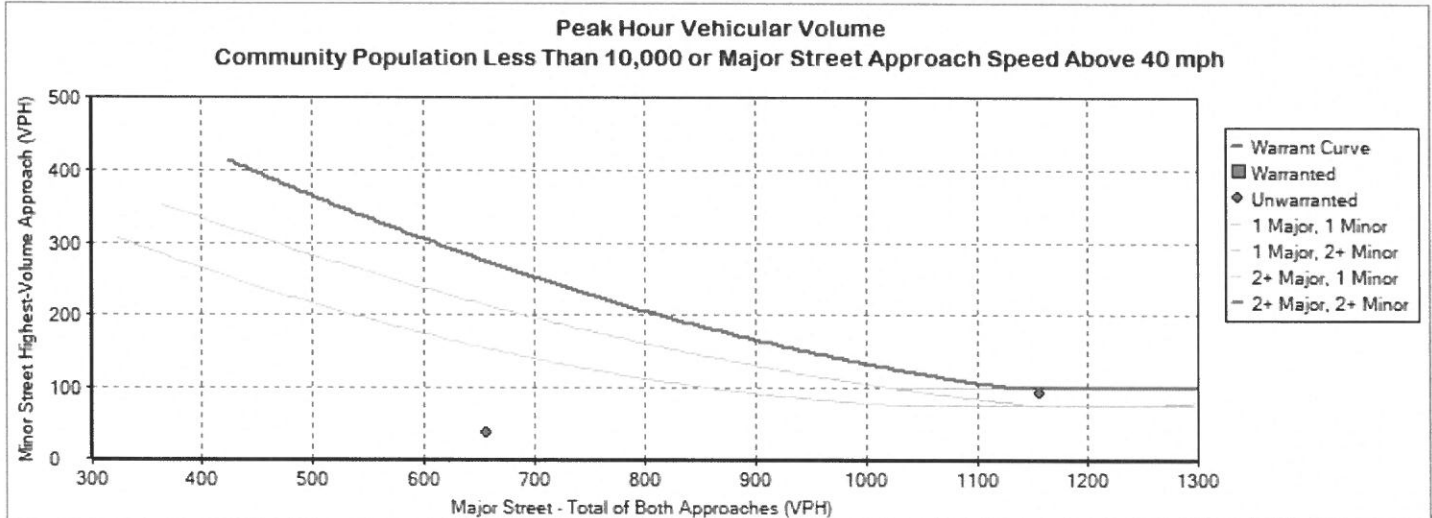
Notes 0 Hours met (1 required)

Notes 0 Hours met (1 required)

Minor Approach Time Delay Condition Met? **Not Met**

Minor Approach Volume Condition Met? **Met**

Total Entering Intersection Volume Condition Met? **Not Met**



Warrant 3: Peak Hour

9: Site Access & Cameron Ave

Intersection Information

	Major Street	Minor Street
Street Name	Cameron Ave	Site Access
Direction	EB/WB	NB/SB
Number of Lane	2	2
Approach Speed	45	30

Warrant 3 Met? **Yes**

Details

Low Population? **No**

Condition A Met? **No**

Condition B Met? **Yes**

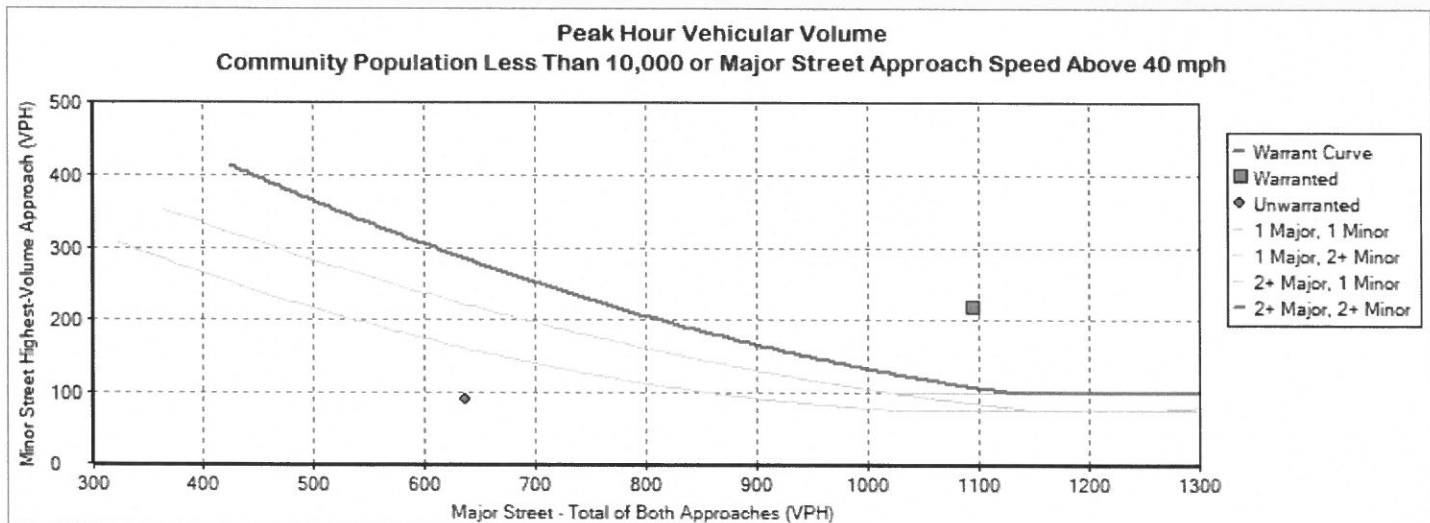
Notes 0 Hours met (1 required)

Notes 1 Hours met (1 required)

Minor Approach Time Delay Condition Met? **Not Met**

Minor Approach Volume Condition Met? **Met**

Total Entering Intersection Volume Condition Met? **Not Met**



Warrant 3: Peak Hour

9: Site Access & Cameron Ave / Existing Plus Project 30%

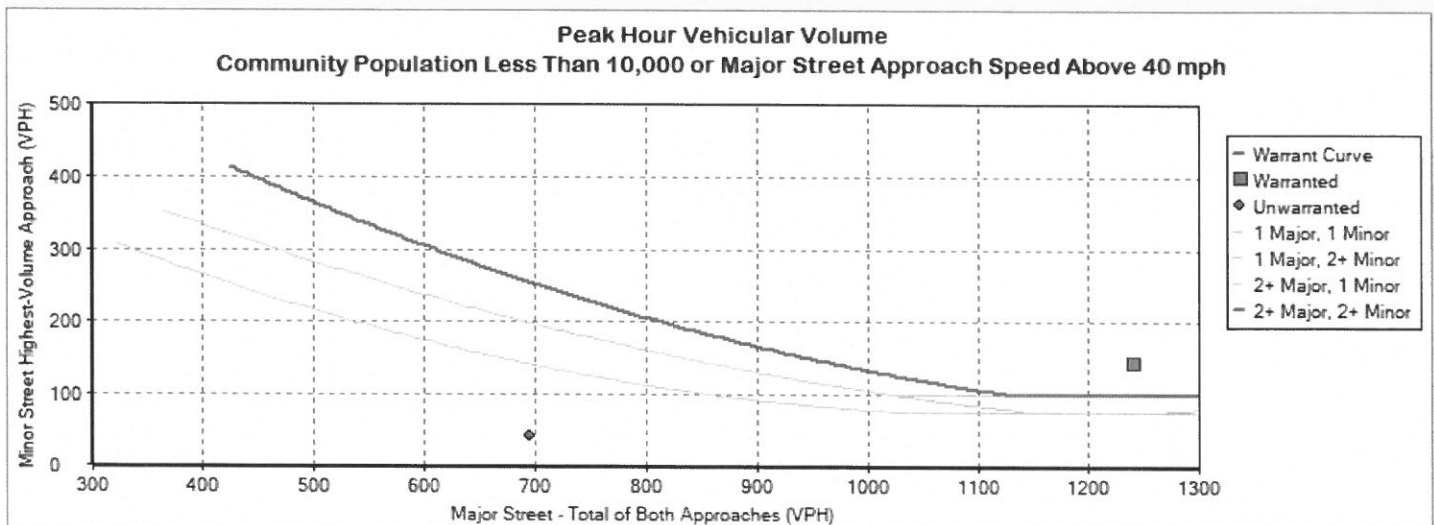
Intersection Information

	Major Street	Minor Street
Street Name	Cameron Ave	Site Access
Direction	EB/WB	NB/SB
Number of Lane	2	2
Approach Speed	45	30

Warrant 3 Met? **Yes**

Details

Low Population?	No		
Condition A Met?	No	Condition B Met?	Yes
Notes	0 Hours met (1 required)	Notes	1 Hours met (1 required)
Minor Approach Time Delay Condition Met?	Not Met		
Minor Approach Volume Condition Met?	Met		
Total Entering Intersection Volume Condition Met?	Not Met		



APPENDIX E
MITIGATED INTERSECTION ANALYSIS SHEETS

9: Site Access & Cameron Ave
HCM 2010 Signalized Intersection Summary

Existing Plus Project 30%-AM-Mitigated
11/14/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	220	10	51	338	38	20	1	17	21	1	21
Future Volume (veh/h)	38	220	10	51	338	38	20	1	17	21	1	21
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	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	256	12	65	433	49	27	1	23	23	1	23
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.86	0.86	0.86	0.78	0.78	0.78	0.75	0.75	0.75	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	939	44	124	934	105	275	51	117	481	11	255
Arrive On Green	0.05	0.27	0.27	0.07	0.29	0.29	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1774	3443	161	1774	3207	361	545	306	699	1381	66	1527
Grp Volume(v), veh/h	44	131	137	65	238	244	51	0	0	23	0	24
Grp Sat Flow(s), veh/h/ln	1774	1770	1834	1774	1770	1799	1550	0	0	1381	0	1593
Q Serve(g_s), s	0.7	1.7	1.8	1.1	3.3	3.3	0.0	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.7	1.7	1.8	1.1	3.3	3.3	0.8	0.0	0.0	0.3	0.0	0.4
Prop In Lane	1.00		0.09	1.00		0.20	0.53		0.45	1.00		0.96
Lane Grp Cap(c), veh/h	91	483	500	124	515	524	442	0	0	481	0	266
V/C Ratio(X)	0.48	0.27	0.27	0.53	0.46	0.47	0.12	0.00	0.00	0.05	0.00	0.09
Avail Cap(c_a), veh/h	420	1069	1108	420	1069	1087	1185	0	0	1177	0	1069
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.8	8.6	8.6	13.5	8.7	8.7	10.7	0.0	0.0	10.5	0.0	10.6
Incr Delay (d2), s/veh	4.0	0.3	0.3	3.4	0.6	0.6	0.1	0.0	0.0	0.0	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	0.5	0.9	0.9	0.6	1.7	1.7	0.4	0.0	0.0	0.2	0.0	0.2
LnGrp Delay(d),s/veh	17.8	8.9	8.9	16.9	9.3	9.4	10.8	0.0	0.0	10.6	0.0	10.7
LnGrp LOS	B	A	A	B	A	A	B			B		B
Approach Vol, veh/h	312			547			51			47		
Approach Delay, s/veh	10.1			10.2			10.8			10.6		
Approach LOS	B			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.9	7.0	13.1		9.9	6.4	13.6				
Change Period (Y+Rc), s		4.9	4.9	4.9		4.9	4.9	4.9				
Max Green Setting (Gmax), s		20.1	7.1	18.1		20.1	7.1	18.1				
Max Q Clear Time (g_c+I1), s		2.8	3.1	3.8		2.4	2.7	5.3				
Green Ext Time (p_c), s		0.4	0.0	3.6		0.4	0.0	3.4				
Intersection Summary												
HCM 2010 Ctrl Delay	10.3											
HCM 2010 LOS	B											

9: Site Access & Cameron Ave
Queues

Existing Plus Project 30%-AM-Mitigated

11/14/2018

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	44	268	65	482	51	23	24
v/c Ratio	0.11	0.24	0.16	0.43	0.15	0.08	0.07
Control Delay	14.6	9.3	14.7	10.3	11.1	14.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	9.3	14.7	10.3	11.1	14.5	8.5
Queue Length 50th (ft)	4	10	5	19	2	2	0
Queue Length 95th (ft)	29	43	34	65	21	19	14
Internal Link Dist (ft)		740		535	298		152
Turn Bay Length (ft)			1				
Base Capacity (vph)	444	2254	444	2240	1028	959	1141
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	0.10	0.12	0.15	0.22	0.05	0.02	0.02
Intersection Summary							

9: Site Access & Cameron Ave
HCM 2010 Signalized Intersection Summary

Existing Plus Project 30%-PM-Mitigated

11/14/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	556	29	90	396	86	63	1	55	94	1	94
Future Volume (veh/h)	86	556	29	90	396	86	63	1	55	94	1	94
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	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	579	30	94	412	93	73	1	64	102	1	102
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.92	0.86	0.86	0.86	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	1129	58	151	955	214	259	39	123	505	3	306
Arrive On Green	0.08	0.33	0.33	0.09	0.33	0.33	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1774	3424	177	1774	2875	643	532	199	632	1331	15	1570
Grp Volume(v), veh/h	90	299	310	94	252	253	138	0	0	102	0	103
Grp Sat Flow(s),veh/h/ln	1774	1770	1831	1774	1770	1749	1363	0	0	1331	0	1586
Q Serve(g_s), s	1.7	4.8	4.8	1.8	3.9	4.0	1.4	0.0	0.0	0.0	0.0	2.0
Cycle Q Clear(g_c), s	1.7	4.8	4.8	1.8	3.9	4.0	3.3	0.0	0.0	1.7	0.0	2.0
Prop In Lane	1.00		0.10	1.00		0.37	0.53		0.46	1.00		0.99
Lane Grp Cap(c), veh/h	147	583	604	151	587	581	421	0	0	505	0	309
V/C Ratio(X)	0.61	0.51	0.51	0.62	0.43	0.44	0.33	0.00	0.00	0.20	0.00	0.33
Avail Cap(c_a), veh/h	401	906	938	401	906	896	949	0	0	1002	0	902
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	9.6	9.6	15.6	9.2	9.2	12.7	0.0	0.0	12.2	0.0	12.3
Incr Delay (d2), s/veh	4.1	0.7	0.7	4.1	0.5	0.5	0.4	0.0	0.0	0.2	0.0	0.6
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	1.0	2.4	2.5	1.1	2.0	2.0	1.2	0.0	0.0	0.9	0.0	0.9
LnGrp Delay(d),s/veh	19.7	10.3	10.2	19.7	9.7	9.7	13.2	0.0	0.0	12.4	0.0	12.9
LnGrp LOS	B	B	B	B	A	A	B			B		B
Approach Vol, veh/h		699			599			138			205	
Approach Delay, s/veh		11.5			11.3			13.2			12.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.8	7.0	16.6		11.8	6.9	16.6				
Change Period (Y+Rc), s		4.9	4.0	4.9		4.9	4.0	4.9				
Max Green Setting (Gmax), s		20.1	8.0	18.1		20.1	8.0	18.1				
Max Q Clear Time (g_c+I1), s		5.3	3.8	6.8		4.0	3.7	6.0				
Green Ext Time (p_c), s		1.5	0.1	4.8		1.6	0.1	5.0				
Intersection Summary												
HCM 2010 Ctrl Delay			11.7									
HCM 2010 LOS			B									

9: Site Access & Cameron Ave
Queues

Existing Plus Project 30%-PM-Mitigated

11/14/2018

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	90	609	94	506	138	102	103
v/c Ratio	0.26	0.51	0.27	0.43	0.38	0.29	0.23
Control Delay	19.8	13.3	19.9	11.6	13.0	17.6	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	13.3	19.9	11.6	13.0	17.6	6.0
Queue Length 50th (ft)	20	64	21	46	16	22	0
Queue Length 95th (ft)	60	116	62	90	52	59	29
Internal Link Dist (ft)		740		535	298		152
Turn Bay Length (ft)			1				
Base Capacity (vph)	405	1824	405	1804	809	869	955
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	0.22	0.33	0.23	0.28	0.17	0.12	0.11
Intersection Summary							

9: Site Access & Cameron Ave
HCM 2010 Signalized Intersection Summary

Year 2040 With Project 30%-AM-Mitigated

11/14/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	277	13	59	430	38	23	1	22	21	1	21
Future Volume (veh/h)	38	277	13	59	430	38	23	1	22	21	1	21
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	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	322	15	76	551	49	31	1	29	23	1	23
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.86	0.86	0.86	0.78	0.78	0.78	0.75	0.75	0.75	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1042	48	136	1082	96	256	43	116	456	10	240
Arrive On Green	0.05	0.30	0.30	0.08	0.33	0.33	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1774	3444	160	1774	3289	292	538	273	735	1374	66	1527
Grp Volume(v), veh/h	44	165	172	76	296	304	61	0	0	23	0	24
Grp Sat Flow(s),veh/h/ln	1774	1770	1835	1774	1770	1811	1546	0	0	1374	0	1593
Q Serve(g_s), s	0.8	2.3	2.3	1.3	4.3	4.3	0.0	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.8	2.3	2.3	1.3	4.3	4.3	1.0	0.0	0.0	0.4	0.0	0.4
Prop In Lane	1.00		0.09	1.00		0.16	0.51		0.48	1.00		0.96
Lane Grp Cap(c), veh/h	90	536	555	136	582	596	414	0	0	456	0	251
V/C Ratio(X)	0.49	0.31	0.31	0.56	0.51	0.51	0.15	0.00	0.00	0.05	0.00	0.10
Avail Cap(c_a), veh/h	397	1009	1046	397	1009	1032	1117	0	0	1109	0	1009
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.7	8.5	8.5	14.1	8.6	8.6	11.7	0.0	0.0	11.4	0.0	11.4
Incr Delay (d2), s/veh	4.1	0.3	0.3	3.5	0.7	0.7	0.2	0.0	0.0	0.0	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	0.5	1.1	1.2	0.8	2.2	2.2	0.5	0.0	0.0	0.2	0.0	0.2
LnGrp Delay(d),s/veh	18.8	8.8	8.8	17.7	9.3	9.3	11.8	0.0	0.0	11.5	0.0	11.6
LnGrp LOS	B	A	A	B	A	A	B			B		B
Approach Vol, veh/h	381				676				61			
Approach Delay, s/veh	10.0				10.2				11.8			
Approach LOS	A				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	9.9		7.3	14.5	9.9		6.5	15.3				
Change Period (Y+Rc), s	4.9		4.9	4.9	4.9		4.9	4.9				
Max Green Setting (Gmax), s	20.1		7.1	18.1	20.1		7.1	18.1				
Max Q Clear Time (g_c+l1), s	3.0		3.3	4.3	2.4		2.8	6.3				
Green Ext Time (p_c), s	0.4		0.0	4.5	0.4		0.0	4.1				
Intersection Summary												
HCM 2010 Ctrl Delay	10.3											
HCM 2010 LOS	B											

9: Site Access & Cameron Ave
Queues

Year 2040 With Project 30%-AM-Mitigated

11/14/2018

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	44	337	76	600	61	23	24
v/c Ratio	0.12	0.27	0.20	0.48	0.19	0.08	0.07
Control Delay	16.1	9.1	16.3	10.5	11.7	15.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	9.1	16.3	10.5	11.7	15.7	9.0
Queue Length 50th (ft)	4	13	7	25	3	2	0
Queue Length 95th (ft)	31	53	42	82	25	20	15
Internal Link Dist (ft)		740		535	298		152
Turn Bay Length (ft)			1				
Base Capacity (vph)	423	2144	423	2137	985	903	1086
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	0.10	0.16	0.18	0.28	0.06	0.03	0.02
Intersection Summary							

9: Site Access & Cameron Ave
HCM 2010 Signalized Intersection Summary

Year 2040 Project 30%-PM-Mitigated

11/14/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	699	36	102	509	86	68	1	71	94	1	94
Future Volume (veh/h)	86	699	36	102	509	86	68	1	71	94	1	94
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	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	728	38	106	530	93	79	1	83	102	1	102
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.92	0.86	0.86	0.86	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	1260	66	154	1132	198	233	35	140	476	3	314
Arrive On Green	0.08	0.37	0.37	0.09	0.38	0.38	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	3422	179	1774	3013	527	499	176	700	1308	15	1570
Grp Volume(v), veh/h	90	376	390	106	310	313	163	0	0	102	0	103
Grp Sat Flow(s),veh/h/ln	1774	1770	1831	1774	1770	1770	1375	0	0	1308	0	1586
Q Serve(g_s), s	2.0	6.8	6.8	2.3	5.3	5.3	2.2	0.0	0.0	0.0	0.0	2.2
Cycle Q Clear(g_c), s	2.0	6.8	6.8	2.3	5.3	5.3	4.4	0.0	0.0	2.2	0.0	2.2
Prop In Lane	1.00		0.10	1.00		0.30	0.48		0.51	1.00		0.99
Lane Grp Cap(c), veh/h	140	652	674	154	665	665	408	0	0	476	0	317
V/C Ratio(X)	0.64	0.58	0.58	0.69	0.47	0.47	0.40	0.00	0.00	0.21	0.00	0.33
Avail Cap(c_a), veh/h	355	877	908	355	877	877	780	0	0	817	0	730
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	10.1	10.1	17.7	9.4	9.5	14.5	0.0	0.0	13.7	0.0	13.7
Incr Delay (d2), s/veh	4.8	0.8	0.8	5.4	0.5	0.5	0.6	0.0	0.0	0.2	0.0	0.6
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	1.1	3.4	3.5	1.4	2.7	2.7	1.7	0.0	0.0	1.0	0.0	1.0
LnGrp Delay(d),s/veh	22.7	10.9	10.9	23.2	10.0	10.0	15.1	0.0	0.0	13.9	0.0	14.3
LnGrp LOS	C	B	B	C	A	A	B			B		B
Approach Vol, veh/h	856				729				163			
Approach Delay, s/veh	12.2				11.9				15.1			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	12.9		7.5	19.6	12.9		7.2	19.9				
Change Period (Y+Rc), s	4.9		4.0	4.9	4.9		4.0	4.9				
Max Green Setting (Gmax), s	18.4		8.0	19.8	18.4		8.0	19.8				
Max Q Clear Time (g_c+l1), s	6.4		4.3	8.8	4.2		4.0	7.3				
Green Ext Time (p_c), s	1.5		0.1	5.9	1.7		0.1	6.4				
Intersection Summary												
HCM 2010 Ctrl Delay	12.5											
HCM 2010 LOS	B											

9: Site Access & Cameron Ave
Queues

Year 2040 Project 30%-PM-Mitigated

11/14/2018

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	90	766	106	623	163	102	103
v/c Ratio	0.28	0.58	0.32	0.47	0.44	0.32	0.24
Control Delay	21.7	13.8	22.3	12.0	13.7	19.7	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	13.8	22.3	12.0	13.7	19.7	6.3
Queue Length 50th (ft)	22	88	26	64	19	25	0
Queue Length 95th (ft)	63	153	72	117	59	62	30
Internal Link Dist (ft)		740		535	298		152
Turn Bay Length (ft)			1				
Base Capacity (vph)	377	1858	377	1843	717	687	829
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	0.24	0.41	0.28	0.34	0.23	0.15	0.12
Intersection Summary							