Appendix A: Revisions to Transportation Impact Analysis

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MEMORANDUM

Date:	May 22, 2020		Project #: 20345

To: Anders Hauge
Town of Loomis
3665 Taylor Road
Loomis, CA 95650

From: Chris Brehmer

Project: Loomis Costco

Subject: Loomis Costco RDEIR TIA Summary of Corrections

This memorandum documents corrections to the Loomis Costco Transportation Impact Analysis (TIA) dated October 2019. The items listed below respond to comments received from various individuals and agencies within the affected area of the RDEIR. The specific topic area encapsulated by a comment is shown as a numbered item below followed by our response to each.

Item 1: The Loomis Costco TIA analysis of the Pacific Street/Delmar Avenue/Dominguez Road intersection does not reflect planned widening of Pacific Street. This issue was identified in Comment #70 of the February 7, 2020 Fehr & Peers comment letter. Per the Fehr & Peers comment, the City of Rocklin plans to widen Pacific Street to four lanes from east of Midas Avenue to the easterly City limit by 2030.

Response: The Cumulative Conditions - Long Term and Cumulative Conditions - Long Term Plus Project analyses of the Pacific Street/Delmar Avenue/Dominguez Road intersection was revised assuming one additional through travel lane in each direction on Pacific Street. The original and revised analysis results are shown on the next page as excerpt updates to Loomis Costco TIA Table 49 and Table 50.

The revised analysis assuming the additional travel lanes results in reduced delay at the intersection; however, the intersection continues to operate worse than the City of Rocklin operating goal of LOS C prior to Project site-generated trips being added. An impact is considered significant when the intersection is already operating at unacceptable LOS and the Project adds trips to the intersection exceeding 5% of the total traffic already at the intersection. Because the project does not contribute 5% or more of the volumes at the Pacific Street/Delmar Avenue/Dominguez Road intersection, the change in delay as a result of Project site-generated trips does not result in a significant impact during the weekday AM, weekday PM, or Saturday midday analysis.

Table 1: Cumulative Conditions - Long Term Traffic Conditions, Weekday AM and PM Peak

ID	Intersection	Traffic Control Type	Weekday AM					Weekday PM				
			Long Term		LT Plus Project		Change in Delay (sec)	Long Term		LT Plus Project		Change in Delay (sec)
			Delay (Sec)	LOS	Delay (Sec)	LOS		Delay (Sec)	LOS	Delay (Sec)	LOS	
			October 2019 TIA Findings									
15	Pacific St/ Dominguez Rd-Delmar Ave	Signal	**444.3**	F	**445.7**	F	1.4	**755.8**	F	**751.2**	F	-4.6
			Revised TIA Findings with Four Lane Widening of Pacific Street									
15	Pacific St/ Dominguez Rd-Delmar Ave	Signal	**289.1**	F	**290.4**	F	1.3	**596.5**	F	**595.9**	F	-0.6

Boldface type indicates intersections performing below acceptable LOS. Refer to Table 1 for applicable operating standards.

Shaded cell indicate significant Project impact

[1] An impact is significant in situations when the intersection is already operating at unacceptable LOS and the Project adds trips to the intersection exceeding 5% of the total traffic already at the intersection. At these locations, the project does not contribute 5% or more of the volumes.
Source: Kittelson & Associates, Inc. 2020.

Table 2: Cumulative Conditions - Long Term Traffic Condition, Weekend Midday Peak – Project Driveway Option 1A

ID	Intersection	Traffic Control Type	Long Term		Long Term plus Project		Change in Delay (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
			October 2019 TIA Findings				
15	Pacific St/Dominguez Rd-Delmar Ave	Signal	**56.4**	E	**60.4**	E	4.0
			Revised TIA Findings with Four Lane Widening of Pacific Street				
15	Pacific St/Dominguez Rd-Delmar Ave	Signal	**37.2**	D	**37.7**	D	0.5

Boldface type indicates intersections performing below acceptable LOS. Refer to Table 1 for applicable operating standards.

Shaded cell indicate significant Project impact

[1] An impact is significant in situations when the intersection is already operating at unacceptable LOS and the Project adds trips to the intersection exceeding 5% of the total traffic already at the intersection. At these locations, the project does not contribute 5% or more of the volumes.
Source: Kittelson & Associates, Inc. 2020.

It should be noted that the results presented in the table excerpts above do not change as a function of the Project Driveway option (Project trip assignment to this intersection is the same for Project Driveway Options A, B and C).

Based on the updated analysis, no new Project mitigation needs were identified at the Pacific Street/Delmar Avenue/Dominguez Road intersection.

Synchro worksheets for the revised analysis are presented in Appendix 1.

Item 2: The weekday PM peak hour Cumulative Conditions - Long Term Plus Project mitigation analysis of the Signalized Project Driveway intersection on Sierra College Boulevard does not fully mitigate projected 95th percentile queue spillback. This issue was identified in Comment #86 of the February 7, 2020 Fehr & Peers comment letter.

Response: The October 2019 Loomis Costco TIA recommends mitigation of the anticipated queuing at the Sierra College Boulevard/Project Driveway through provision of traffic signal coordination along the arterial. This coordination assumed 150 second cycles at the adjacent signals and a 75 second signal cycle at the project driveway traffic signal under Project Site Access Option 1A. The results of the queuing analysis are presented in the TIA and Table 10 of Comment #86. While the recommended 75 second cycle improves southbound left-turn queuing at the Project driveway, it results in excessive northbound through queuing on Sierra College Boulevard.

After conducting additional operational and queuing analysis, the mitigation presented for the Sierra College Boulevard/Project Driveway Option 1A in Table 68 is amended to read as follows:

- TR MM2: Provide signal coordination. Coordinate signal timing with Granite Drive and I-80 ramps (match cycle length in use on Sierra College Boulevard at Granite Drive and Brace Road)

- TR MM7: Add storage to turn pockets. Modify median to provide additional storage (225 feet total) for southbound left turn lane (Project to implement with Sierra College Boulevard roadway widening along Project frontage).

Table 2-1 below summarizes the projected 95th percentile queue lengths after implementation of the revised recommended mitigations.

Table 2-1 - Sierra College Boulevard/Project Driveway Option 1A Weekday PM Peak Hour 95th Percentile Mitigated Queues

Movement	Storage (feet)	Revised Mitigated 95th Percentile Queue (feet)	Mitigated 95th Percentile Queue (feet) in October 2019 TIA
Northbound left-turn	160	69	49
Northbound through	550	554	847
Northbound right-turn	160	36	81
Southbound Left-turn	225	226	123
Southbound through	600	530	444
Westbound left-turn	150[1]	312	233
Westbound through/right	150[1]	96	53

[1]Distance shown reflects distance to first driveway on-site, additional storage available on-site

As shown in Table 2-1, the projected 95th percentile queues are essentially accommodated for each of the movements, though the westbound left-turns leaving the Costco site are projected to block some internal drive aisles within the Costco property and the northbound through and southbound left-turn queues exceed storage by a few feet. The westbound queues can be accommodated on-site without impacting public street operations. The northbound through and southbound left-turn queues only

exceed storage by 4 and 1 feet, respectively, and are not anticipated to impact operations of adjacent lanes or intersections.

It may be helpful to note that the 95th percentile queues shown in Table 2-1 reflect conservative findings in that the operations analyses assumed 1) a two percent heavy vehicle factor for all movements (entering and exiting Project site volumes are unlikely to be as high as two percent for all movements in the weekday PM peak hour, one percent or less is more likely) and 2) a relatively low peak hour factor of 0.92, given the high through volumes predicted on Sierra College Boulevard in the long-term scenario. By comparison, the existing conditions weekday PM peak hour factor on Sierra College Boulevard is 0.96 at Brace Road, 0.94 at Granite Drive, 0.94 at the I-80 Westbound Ramps and 0.95 at the I-80 eastbound ramps. Use of a higher peak hour factor and/or lower truck percentages results in additional queue length reductions compared to the values presented in Table 2-1.

Synchro worksheets for the revised analysis are presented in Appendix 2.

Item 3: The Town of Loomis released an Initial Study/Mitigated Negative Declaration dated December 2, 2019 that prescribes a different lane configuration at the Sierra College Boulevard/Taylor Road intersection as compared to the assumed future lane configuration presented in the Loomis Costco TIA. This issue was identified in Comment #15 of the February 10, 2020 City of Rocklin comment letter.

Response: The Initial Study/Mitigated Negative Declaration dated December 2, 2019 reflects changes made in response to considerations identified through the Town's engineering design efforts and reflects information/decisions that were not available at the time the Loomis Costco TIA was prepared.

The Loomis Costco TIA operations analysis of the intersection has been re-assessed based on the lane configuration presented in the December 2, 2019 Initial Study/Mitigated Negative Declaration. The revised analysis findings are summarized below in Table 3-1.

Table 3-1. Sierra College Boulevard/Taylor Road Intersection Peak Hour Operations Analysis with Town Design Lane Configurations

Analysis	Weekday AM Peak Hour				Change in Delay (sec)	Weekday PM Peak Hour				Change in Delay (sec)	Weekend Midday Peak Hour				Change in Delay (sec)
	Baseline		Plus Project			Baseline		Plus Project			Baseline		Plus Project		
	Delay (Sec)	LOS	Delay (Sec)	LOS		Delay (Sec)	LOS	Delay (Sec)	LOS		Delay (Sec)	LOS	Delay (Sec)	LOS	
Cumulative Conditions - Short Term															
TIA[1]	29.5	C	30.3	C	0.8	**40.5**	**D**	**44.1**	**D**	3.6	31.7	C	**38.9**	**D**	7.2
Town Design[2]	**37.3**	**D**	**38.5**	**D**	1.2	**43.5**	**D**	**47.6**	**D**	4.1	34.3	C	**42.4**	**D**	8.1
Cumulative Conditions - Long Term															
TIA[3]	**67.3**	**E**	**69.0**	**E**	1.7	**51.9**	**D**	**55.9**	**E**	4.0	33.2	C	**43.4**	**D**	10.2
Town Design[2]	**91.0**	**F**	**92.6**	**F**	1.6	**52.8**	**D**	**57.0**	**E**	4.2	33.3	C	**44.5**	**D**	11.2

Notes:

Applicable operating standard is LOS C. Impact is significant if the Project increases delay to unacceptable levels from acceptable levels. Impact is significant in situations when the intersection is already operating at unacceptable LOS and the Project trips cause the average intersection delay to increase by 5.0 seconds or more.

Boldface type indicates intersections performing below acceptable LOS.

Shaded cell indicates Project impact

[1] Source: Weekday AM & PM Peak Hour: TIA Table 34; Weekend Midday Peak Hour: TIA Table 35

[2] Based on the lane configuration presented in the December 2, 2019 Initial Study/Mitigated Negative Declaration

[3] Sources: Weekday AM & PM Peak Hour: TIA Table 49; Weekend Midday Peak Hour: TIA Table 50

Source: Kittelson & Associates, Inc. 2020.

As shown in Table 3-1, the alternative intersection configuration results in an incremental increase in delay for all analysis scenarios. Further, the alternative configuration results in a projected intersection LOS D during the Cumulative Conditions - Short Term weekday AM peak hour regardless of the proposed Project site development. No new significant Project LOS impact was identified in either the Cumulative Conditions - Short Term or Cumulative Conditions - Long Term.

Differences in queuing were also assessed as summarized in Tables 3-2 through 3-5.

As shown in Tables 3-2 through 3-5, no new significant Project queuing impacts were identified in either the Cumulative Conditions - Short Term or Cumulative Conditions - Long Term.

Synchro worksheets for the revised analysis are presented in Appendix 2.

Table 3-2. Sierra College Boulevard/Taylor Road Intersection Cumulative Conditions - Short Term Baseline Peak Hour Queuing Analysis with Town Design Lane Configurations

	95th Percentile Queues (feet)											
	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Weekday AM Peak Hour												
Storage	210	550	550	210	1500		150	900	250	215	2060	215
TIA	#205	142	34	44	#414	35	**#159**	168	1	#144	157	-
Town Design[1]	#205	142	45	44	#536	N/A	59	168	1	#144	157	-
Weekday PM Peak Hour												
Storage	210	550		210	1500		150	900	250	215	2060	215
TIA	**#218**	**#564**	144	44	327	33	**#250**	#282	55	**#273**	296	-
Town Design[1]	**#218**	**#564**	144	44	#463	N/A	99	#282	55	**#273**	296	-
Weekend Midday Peak Hour												
Storage	210	550		210	1500		150	900	250	215	2060	215
TIA	#206	293	96	46	#327	30	**#167**	177	44	**#269**	153	-
Town Design[1]	#206	293	96	46	#414	N/A	70	177	44	**#269**	153	-

Boldface type indicates 95th percentile queue exceeds storage
[1] Based on the lane configuration presented in the December 2, 2019 Initial Study/Mitigated Negative Declaration
Source: Kittelson & Associates, Inc. 2020.

Table 3-3. Cumulative Conditions - Short Term Plus Project Peak Hour Queuing Analysis with Alternative Lane Configurations

	95th Percentile Queues (feet)											
	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Weekday AM Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#215**	144	34	44	#418	35	**#159**	168	6	#150	157	-
Town Design[1]	**#215**	144	34	44	#541	N/A	59	168	6	#150	157	-
Weekday PM Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#256**	**#580**	161	44	337	36	**#250**	#282	71	**#292**	296	-
Town Design[1]	**#256**	**#580**	161	44	#479	N/A	99	#282	71	**#292**	296	-
Weekend Midday Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#269**	311	128	46	#354	30	**#167**	177	71	**#303**	153	-
Town Design[1]	**#269**	311	128	46	#442	N/A	70	177	71	**#303**	153	-

Boldface type indicates 95th percentile queue exceeds storage
[1] Based on the lane configuration presented in the December 2, 2019 Initial Study/Mitigated Negative Declaration
Shading indicates significant Project impact
Source: Kittelson & Associates, Inc. 2020.

Table 3-4. Cumulative Conditions - Long Term Baseline Peak Hour Queuing Analysis with Alternative Lane Configurations

	95th Percentile Queues (feet)											
	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Weekday AM Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#424**	280	28	113	**#1012**	127	**#198**	171	-	**#381**	**#561**	5
Town Design[1]	**#424**	280	28	113	**#1306**	N/A	75	171	-	**#381**	**#561**	5
Weekday PM Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#217**	**#855**	286	#88	470	14	**190**	**#500**	172	**#355**	242	1
Town Design[1]	**#217**	**#855**	286	#88	518	N/A	95	**#500**	172	**#355**	229	1
Weekend Midday Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#205**	267	130	58	**#287**	5	92	182	103	**#256**	134	-
Town Design[1]	**#205**	267	130	58	**#331**	N/A	45	182	103	**#256**	133	-

Boldface type indicates 95th percentile queue exceeds storage
[1] Based on the lane configuration presented in the December 2, 2019 Initial Study/Mitigated Negative Declaration
Source: Kittelson & Associates, Inc. 2020.

Table 3-5. Cumulative Conditions - Long Term Plus Project Peak Hour Queuing Analysis with Alternative Lane Configurations

	95th Percentile Queues (feet)											
	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Weekday AM Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#440**	284	28	113	**#1022**	128	**#198**	171	-	**#391**	**#561**	5
Town Design[1]	**#440**	284	28	113	**#1313**	N/A	75	171	-	**#391**	**#561**	5
Weekday PM Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#266**	**#874**	309	#88	482	14	**190**	**#500**	200	**#380**	242	1
Town Design[1]	**#266**	**#874**	309	#88	531	N/A	95	**#500**	200	**#380**	229	1
Weekend Midday Peak Hour												
Storage	210	550	550	210	1500	450	150	900	250	215	2060	215
TIA	**#267**	284	165	58	**#330**	5	92	182	139	**#291**	134	-
Town Design[1]	**#267**	284	165	58	**#358**	N/A	45	182	139	**#291**	133	-

Boldface type indicates 95th percentile queue exceeds storage
[1] Based on the lane configuration presented in the December 2, 2019 Initial Study/Mitigated Negative Declaration
Shading indicates significant Project impact
Source: Kittelson & Associates, Inc. 2020.

Next Steps

Please contact us if you have questions or need additional information.

Appendix 1   Pacific Street/Delmar Avenue/Dominguez Road Intersection Revised Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	40	125	90	310	60	270	285	165	60	640	90
Future Volume (veh/h)	20	40	125	90	310	60	270	285	165	60	640	90
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1477	1484	1900	1722	1792	1712	1694	1900	1387	1776	1727
Adj Flow Rate, veh/h	22	44	137	99	341	66	297	313	181	66	703	99
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
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, %	33	33	28	9	9	6	11	7	7	37	7	10
Cap, veh/h	51	63	410	47	62	496	328	924	522	78	1091	464
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.20	0.47	0.47	0.06	0.32	0.32
Sat Flow, veh/h	0	193	1260	0	190	1522	1630	1984	1121	1321	3374	1435
Grp Volume(v), veh/h	66	0	137	440	0	66	297	253	241	66	703	99
Grp Sat Flow(s),veh/h/ln	193	0	1260	190	0	1522	1630	1610	1495	1321	1687	1435
Q Serve(g_s), s	0.0	0.0	7.7	0.0	0.0	2.9	16.7	9.3	9.6	4.6	16.7	4.7
Cycle Q Clear(g_c), s	30.5	0.0	7.7	30.5	0.0	2.9	16.7	9.3	9.6	4.6	16.7	4.7
Prop In Lane	0.33		1.00	0.22		1.00	1.00		0.75	1.00		1.00
Lane Grp Cap(c), veh/h	114	0	410	109	0	496	328	750	697	78	1091	464
V/C Ratio(X)	0.58	0.00	0.33	4.03	0.00	0.13	0.91	0.34	0.35	0.85	0.64	0.21
Avail Cap(c_a), veh/h	114	0	410	109	0	496	350	910	845	178	1636	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	23.9	30.4	0.0	22.2	36.5	15.8	15.9	43.6	27.1	23.0
Incr Delay (d2), s/veh	7.6	0.0	0.6	1387.0	0.0	0.1	25.5	0.7	0.8	24.5	1.8	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	1.5	0.0	2.7	44.8	0.0	1.2	9.8	4.3	4.1	2.2	8.0	2.0
LnGrp Delay(d),s/veh	33.6	0.0	24.4	1417.5	0.0	22.4	62.0	16.6	16.7	68.1	28.8	23.6
LnGrp LOS	C		C	F		C	E	B	B	E	C	C
Approach Vol, veh/h		203			506			791			868	
Approach Delay, s/veh		27.4			1235.5			33.7			31.2	
Approach LOS		C			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	49.0		35.0	22.9	35.7		35.0
Change Period (Y+Rc), s	4.1	5.4		4.5	4.1	5.4		4.5
Max Green Setting (Gmax), s	12.6	52.9		30.5	20.1	45.4		30.5
Max Q Clear Time (g_c+I1), s	6.6	11.6		32.5	18.7	18.7		32.5
Green Ext Time (p_c), s	0.1	7.9		0.0	0.2	11.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	289.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↵	↗		↵	↗	↗	↑↳		↗	↑↑	↗
Traffic Volume (veh/h)	20	40	125	90	310	60	270	292	165	60	647	90
Future Volume (veh/h)	20	40	125	90	310	60	270	292	165	60	647	90
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1477	1484	1900	1722	1792	1712	1696	1900	1387	1776	1727
Adj Flow Rate, veh/h	22	44	137	99	341	66	297	321	181	66	711	99
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
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, %	33	33	28	9	9	6	11	7	7	37	7	10
Cap, veh/h	51	63	409	47	61	494	328	938	517	78	1099	467
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.20	0.47	0.47	0.06	0.33	0.33
Sat Flow, veh/h	0	193	1260	0	189	1522	1630	2005	1106	1321	3374	1435
Grp Volume(v), veh/h	66	0	137	440	0	66	297	257	245	66	711	99
Grp Sat Flow(s),veh/h/ln	193	0	1260	189	0	1522	1630	1611	1499	1321	1687	1435
Q Serve(g_s), s	0.0	0.0	7.7	0.0	0.0	2.9	16.7	9.5	9.8	4.7	16.9	4.7
Cycle Q Clear(g_c), s	30.5	0.0	7.7	30.5	0.0	2.9	16.7	9.5	9.8	4.7	16.9	4.7
Prop In Lane	0.33		1.00	0.22		1.00	1.00		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	114	0	409	108	0	494	328	754	701	78	1099	467
V/C Ratio(X)	0.58	0.00	0.34	4.07	0.00	0.13	0.91	0.34	0.35	0.85	0.65	0.21
Avail Cap(c_a), veh/h	114	0	409	108	0	494	349	907	844	177	1630	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	24.1	30.7	0.0	22.4	36.7	15.8	15.9	43.8	27.1	23.0
Incr Delay (d2), s/veh	7.8	0.0	0.6	1403.5	0.0	0.1	25.7	0.7	0.8	24.4	1.8	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	1.5	0.0	2.7	44.9	0.0	1.2	9.9	4.4	4.2	2.2	8.2	2.0
LnGrp Delay(d),s/veh	34.0	0.0	24.6	1434.2	0.0	22.6	62.4	16.6	16.7	68.3	28.9	23.6
LnGrp LOS	C		C	F		C	E	B	B	E	C	C
Approach Vol, veh/h		203			506			799			876	
Approach Delay, s/veh		27.7			1250.0			33.7			31.2	
Approach LOS		C			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	49.4		35.0	23.0	36.0		35.0
Change Period (Y+Rc), s	4.1	5.4		4.5	4.1	5.4		4.5
Max Green Setting (Gmax), s	12.6	52.9		30.5	20.1	45.4		30.5
Max Q Clear Time (g_c+I1), s	6.7	11.8		32.5	18.7	18.9		32.5
Green Ext Time (p_c), s	0.1	8.1		0.0	0.2	11.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	290.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↲	↱		↲	↱	↰	↑↑↳		↰	↑↑	↱
Traffic Volume (veh/h)	140	170	380	130	105	55	155	1030	235	45	510	25
Future Volume (veh/h)	140	170	380	130	105	55	155	1030	235	45	510	25
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1724	1845	1900	1743	1792	1681	1848	1900	1900	1827	1624
Adj Flow Rate, veh/h	154	187	418	143	115	60	170	1132	258	49	560	27
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
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, %	12	12	3	9	9	6	13	3	3	0	4	17
Cap, veh/h	38	0	527	40	4	512	194	1500	340	63	1531	595
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.12	0.53	0.53	0.04	0.44	0.44
Sat Flow, veh/h	0	0	1566	0	13	1522	1601	2845	644	1810	3471	1350
Grp Volume(v), veh/h	341	0	418	258	0	60	170	695	695	49	560	27
Grp Sat Flow(s),veh/h/ln	0	0	1566	13	0	1522	1601	1756	1734	1810	1736	1350
Q Serve(g_s), s	0.0	0.0	33.4	0.0	0.0	3.8	14.4	42.9	43.7	3.7	14.9	1.6
Cycle Q Clear(g_c), s	46.5	0.0	33.4	46.5	0.0	3.8	14.4	42.9	43.7	3.7	14.9	1.6
Prop In Lane	0.45		1.00	0.55		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	38	0	527	45	0	512	194	926	914	63	1531	595
V/C Ratio(X)	9.02	0.00	0.79	5.77	0.00	0.12	0.88	0.75	0.76	0.77	0.37	0.05
Avail Cap(c_a), veh/h	38	0	527	45	0	512	295	1068	1055	71	1607	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.1	0.0	41.5	64.7	0.0	31.7	59.7	25.6	25.8	66.1	25.7	22.0
Incr Delay (d2), s/veh	3661.3	0.0	8.3	2193.0	0.0	0.1	18.0	4.1	4.3	38.1	0.4	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	39.9	0.0	15.7	29.0	0.0	1.6	7.3	21.7	21.9	2.5	7.2	0.6
LnGrp Delay(d),s/veh	3730.4	0.0	49.8	2257.7	0.0	31.8	77.7	29.6	30.1	104.2	26.2	22.1
LnGrp LOS	F		D	F		C	E	C	C	F	C	C
Approach Vol, veh/h		759			318			1560			636	
Approach Delay, s/veh		1703.4			1837.7			35.1			32.0	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	78.3		51.0	20.9	66.4		51.0
Change Period (Y+Rc), s	4.1	5.4		4.5	4.1	5.4		4.5
Max Green Setting (Gmax), s	5.4	84.1		46.5	25.5	64.0		46.5
Max Q Clear Time (g_c+I1), s	5.7	45.7		48.5	16.4	16.9		48.5
Green Ext Time (p_c), s	0.0	27.2		0.0	0.4	10.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	596.5
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↲	↱		↲	↱	↰	↑↱		↰	↑↑	↱
Traffic Volume (veh/h)	140	170	380	130	105	55	155	1050	235	45	531	25
Future Volume (veh/h)	140	170	380	130	105	55	155	1050	235	45	531	25
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1724	1845	1900	1743	1792	1681	1848	1900	1900	1827	1624
Adj Flow Rate, veh/h	154	187	418	143	115	60	170	1154	258	49	584	27
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
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, %	12	12	3	9	9	6	13	3	3	0	4	17
Cap, veh/h	38	0	523	40	4	508	194	1516	336	63	1543	600
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.12	0.53	0.53	0.04	0.44	0.44
Sat Flow, veh/h	0	0	1566	0	11	1522	1601	2857	634	1810	3471	1350
Grp Volume(v), veh/h	341	0	418	258	0	60	170	706	706	49	584	27
Grp Sat Flow(s),veh/h/ln	0	0	1566	11	0	1522	1601	1756	1735	1810	1736	1350
Q Serve(g_s), s	0.0	0.0	33.8	0.0	0.0	3.8	14.5	43.9	44.9	3.7	15.6	1.6
Cycle Q Clear(g_c), s	46.5	0.0	33.8	46.5	0.0	3.8	14.5	43.9	44.9	3.7	15.6	1.6
Prop In Lane	0.45		1.00	0.55		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	38	0	523	44	0	508	194	931	921	63	1543	600
V/C Ratio(X)	9.09	0.00	0.80	5.87	0.00	0.12	0.88	0.76	0.77	0.77	0.38	0.05
Avail Cap(c_a), veh/h	38	0	523	44	0	508	293	1060	1048	70	1595	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.6	0.0	42.1	65.7	0.0	32.2	60.2	25.7	25.9	66.6	25.8	21.9
Incr Delay (d2), s/veh	3691.9	0.0	8.8	2240.6	0.0	0.1	18.4	4.2	4.6	38.5	0.4	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	39.9	0.0	15.9	29.0	0.0	1.6	7.4	22.3	22.6	2.6	7.6	0.6
LnGrp Delay(d),s/veh	3761.5	0.0	50.9	2306.2	0.0	32.3	78.5	29.9	30.4	105.2	26.3	22.0
LnGrp LOS	F		D	F		C	E	C	C	F	C	C
Approach Vol, veh/h		759			318			1582			660	
Approach Delay, s/veh		1718.0			1877.2			35.4			31.9	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	79.3		51.0	21.0	67.3		51.0
Change Period (Y+Rc), s	4.1	5.4		4.5	4.1	5.4		4.5
Max Green Setting (Gmax), s	5.4	84.1		46.5	25.5	64.0		46.5
Max Q Clear Time (g_c+I1), s	5.7	46.9		48.5	16.5	17.6		48.5
Green Ext Time (p_c), s	0.0	27.0		0.0	0.4	10.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	595.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱	↰	↑↑↱		↱	↑↑	↱
Traffic Volume (veh/h)	70	105	145	35	40	25	140	595	75	25	510	90
Future Volume (veh/h)	70	105	145	35	40	25	140	595	75	25	510	90
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1644	1810	1900	1800	1900	1792	1804	1900	1597	1863	1863
Adj Flow Rate, veh/h	77	115	159	38	44	27	154	654	82	27	560	99
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
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, %	26	26	5	0	0	0	6	5	5	19	2	2
Cap, veh/h	76	74	602	80	63	633	192	1123	141	45	1003	438
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.11	0.37	0.37	0.03	0.28	0.28
Sat Flow, veh/h	0	189	1536	0	161	1614	1707	3065	384	1521	3539	1547
Grp Volume(v), veh/h	192	0	159	82	0	27	154	365	371	27	560	99
Grp Sat Flow(s),veh/h/ln	189	0	1536	161	0	1614	1707	1714	1735	1521	1770	1547
Q Serve(g_s), s	0.0	0.0	4.6	0.0	0.0	0.7	5.8	11.3	11.4	1.2	8.9	3.2
Cycle Q Clear(g_c), s	25.9	0.0	4.6	25.9	0.0	0.7	5.8	11.3	11.4	1.2	8.9	3.2
Prop In Lane	0.40		1.00	0.46		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	151	0	602	143	0	633	192	628	636	45	1003	438
V/C Ratio(X)	1.27	0.00	0.26	0.57	0.00	0.04	0.80	0.58	0.58	0.60	0.56	0.23
Avail Cap(c_a), veh/h	151	0	602	143	0	633	261	898	909	127	1607	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	13.6	17.0	0.0	12.4	28.6	16.9	16.9	31.7	20.2	18.1
Incr Delay (d2), s/veh	165.2	0.0	0.3	6.0	0.0	0.0	12.7	2.3	2.3	14.1	1.3	0.7
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	9.6	0.0	2.0	1.2	0.0	0.3	3.4	5.7	5.9	0.7	4.5	1.5
LnGrp Delay(d),s/veh	186.2	0.0	13.9	23.0	0.0	12.4	41.3	19.2	19.2	45.7	21.5	18.8
LnGrp LOS	F		B	C		B	D	B	B	D	C	B
Approach Vol, veh/h		351			109			890			686	
Approach Delay, s/veh		108.2			20.4			23.0			22.1	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	29.6		30.4	11.5	24.1		30.4
Change Period (Y+Rc), s	4.1	5.4		4.5	4.1	5.4		4.5
Max Green Setting (Gmax), s	5.5	34.6		25.9	10.1	30.0		25.9
Max Q Clear Time (g_c+I1), s	3.2	13.4		27.9	7.8	10.9		27.9
Green Ext Time (p_c), s	0.0	9.4		0.0	0.1	7.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱	↰	↑↟		↱	↑↑	↱
Traffic Volume (veh/h)	70	105	145	35	40	25	140	636	75	25	549	90
Future Volume (veh/h)	70	105	145	35	40	25	140	636	75	25	549	90
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1644	1810	1900	1800	1900	1792	1804	1900	1597	1863	1863
Adj Flow Rate, veh/h	77	115	159	38	44	27	154	699	82	27	603	99
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
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, %	26	26	5	0	0	0	6	5	5	19	2	2
Cap, veh/h	75	73	591	78	62	621	192	1168	137	45	1044	456
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.38	0.38	0.03	0.29	0.29
Sat Flow, veh/h	0	189	1536	0	161	1614	1707	3091	362	1521	3539	1547
Grp Volume(v), veh/h	192	0	159	82	0	27	154	387	394	27	603	99
Grp Sat Flow(s),veh/h/ln	189	0	1536	161	0	1614	1707	1714	1740	1521	1770	1547
Q Serve(g_s), s	0.0	0.0	4.8	0.0	0.0	0.7	5.9	12.2	12.3	1.2	9.7	3.2
Cycle Q Clear(g_c), s	25.9	0.0	4.8	25.9	0.0	0.7	5.9	12.2	12.3	1.2	9.7	3.2
Prop In Lane	0.40		1.00	0.46		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	148	0	591	140	0	621	192	648	658	45	1044	456
V/C Ratio(X)	1.30	0.00	0.27	0.59	0.00	0.04	0.80	0.60	0.60	0.60	0.58	0.22
Avail Cap(c_a), veh/h	148	0	591	140	0	621	256	881	894	124	1577	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	14.2	17.5	0.0	13.0	29.1	16.8	16.8	32.3	20.2	17.9
Incr Delay (d2), s/veh	175.4	0.0	0.3	6.6	0.0	0.0	13.4	2.4	2.4	14.3	1.4	0.7
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	9.9	0.0	2.1	1.2	0.0	0.3	3.5	6.1	6.2	0.7	5.0	1.5
LnGrp Delay(d),s/veh	197.0	0.0	14.5	24.1	0.0	13.0	42.5	19.3	19.2	46.5	21.6	18.5
LnGrp LOS	F		B	C		B	D	B	B	D	C	B
Approach Vol, veh/h		351			109			935			729	
Approach Delay, s/veh		114.3			21.4			23.1			22.1	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	30.8		30.4	11.7	25.3		30.4
Change Period (Y+Rc), s	4.1	5.4		4.5	4.1	5.4		4.5
Max Green Setting (Gmax), s	5.5	34.6		25.9	10.1	30.0		25.9
Max Q Clear Time (g_c+I1), s	3.2	14.3		27.9	7.9	11.7		27.9
Green Ext Time (p_c), s	0.0	9.7		0.0	0.1	8.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.7
HCM 2010 LOS	D

Appendix 2   Sierra College Boulevard/Project Driveway Intersection Revised Analysis Worksheets

	↗	→	↙	←	↖	↑	↗	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	114	90	437	175	52	2421	421	154	1955
v/c Ratio	0.67	0.50	0.90	0.61	0.45	0.84	0.34	0.69	0.60
Control Delay	84.8	15.4	86.0	22.2	77.6	22.9	1.5	78.5	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.7	0.3	0.0	0.6
Total Delay	84.8	15.4	86.0	22.2	77.6	23.6	1.8	78.5	18.4
Queue Length 50th (ft)	109	0	219	18	52	538	27	145	394
Queue Length 95th (ft)	176	35	#312	96	m69	554	36	226	530
Internal Link Dist (ft)		536		371		594			341
Turn Bay Length (ft)			150				160	190	
Base Capacity (vph)	207	288	492	364	128	2874	1237	225	3245
Starvation Cap Reductn	0	0	0	0	0	182	329	0	774
Spillback Cap Reductn	0	2	0	0	0	0	0	0	96
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.31	0.89	0.48	0.41	0.90	0.46	0.68	0.79

Intersection Summary

\#   95th percentile volume exceeds capacity, queue may be longer.

    Queue shown is maximum after two cycles.

m   Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	0	83	402	0	161	48	2227	387	142	1739	60
Future Volume (veh/h)	105	0	83	402	0	161	48	2227	387	142	1739	60
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	1900
Adj Flow Rate, veh/h	114	0	90	437	0	175	52	2421	421	154	1890	65
Adj No. of Lanes	1	1	0	2	1	0	1	3	1	1	3	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	0	112	480	0	211	67	2915	1128	171	3192	110
Arrive On Green	0.08	0.00	0.07	0.14	0.00	0.13	0.04	0.57	0.57	0.10	0.63	0.63
Sat Flow, veh/h	1774	0	1583	3442	0	1583	1774	5085	1583	1774	5049	173
Grp Volume(v), veh/h	114	0	90	437	0	175	52	2421	421	154	1268	687
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1721	0	1583	1774	1695	1583	1774	1695	1832
Q Serve(g_s), s	9.5	0.0	8.4	18.8	0.0	16.2	4.4	58.2	15.6	12.9	33.0	33.1
Cycle Q Clear(g_c), s	9.5	0.0	8.4	18.8	0.0	16.2	4.4	58.2	15.6	12.9	33.0	33.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	136	0	112	480	0	211	67	2915	1128	171	2143	1158
V/C Ratio(X)	0.84	0.00	0.80	0.91	0.00	0.83	0.78	0.83	0.37	0.90	0.59	0.59
Avail Cap(c_a), veh/h	208	0	190	493	0	231	117	2915	1128	171	2143	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.58	0.58	0.58	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.3	0.0	68.7	63.6	0.0	63.3	71.6	26.1	8.4	67.0	16.2	16.2
Incr Delay (d2), s/veh	16.1	0.0	12.4	20.7	0.0	20.3	10.7	1.7	0.6	41.0	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	4.1	10.3	0.0	8.3	2.3	27.6	7.0	8.3	15.7	17.3
LnGrp Delay(d),s/veh	84.4	0.0	81.1	84.3	0.0	83.6	82.3	27.8	9.0	108.0	17.4	18.5
LnGrp LOS	F		F	F		F	F	C	A	F	B	B
Approach Vol, veh/h		204			612			2894			2109	
Approach Delay, s/veh		82.9			84.1			26.0			24.4	
Approach LOS		F			F			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	19.0	90.5	25.4	15.1	10.1	99.3	16.0	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	78.0	21.5	18.0	9.9	82.6	17.6	21.9
Max Q Clear Time (g_c+I1), s	14.9	60.2	20.8	10.4	6.4	35.1	11.5	18.2
Green Ext Time (p_c), s	0.0	16.0	0.1	0.2	0.0	23.9	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Appendix 3   Sierra College Boulevard/Taylor Road Intersection Revised Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	115	214	110	259	199	22	164	463	220	30	1191
v/c Ratio	0.40	0.58	0.24	0.80	0.47	0.04	0.80	0.29	0.26	0.25	1.02
Control Delay	41.7	36.1	1.3	58.4	32.2	0.1	66.0	16.4	3.8	43.8	60.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	36.1	1.3	58.4	32.2	0.1	66.0	16.4	3.8	43.8	60.2
Queue Length 50th (ft)	29	101	0	69	93	0	84	66	0	15	~325
Queue Length 95th (ft)	59	168	1	#144	157	0	#205	142	45	44	#536
Internal Link Dist (ft)		429			1915			582			306
Turn Bay Length (ft)	120		120	150		150	190			215	
Base Capacity (vph)	298	517	565	322	509	581	207	1584	832	123	1169
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.41	0.19	0.80	0.39	0.04	0.79	0.29	0.26	0.24	1.02

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑	↱	↰↰	↑	↱	↰	↑↑	↱	↰	↑↱	
Traffic Volume (veh/h)	108	201	103	243	187	21	154	435	207	28	947	173
Future Volume (veh/h)	108	201	103	243	187	21	154	435	207	28	947	173
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		0.99	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	1792	1792	1743	1863	1743	1810	1727	1792	1810	1827	1866	1900
Adj Flow Rate, veh/h	115	214	110	259	199	22	164	463	220	30	1007	184
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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, %	6	6	9	2	9	5	10	6	5	4	2	2
Cap, veh/h	184	303	251	340	370	322	198	1535	693	43	1064	194
Arrive On Green	0.06	0.17	0.17	0.10	0.21	0.21	0.12	0.45	0.45	0.02	0.36	0.36
Sat Flow, veh/h	3312	1792	1482	3442	1743	1518	1645	3406	1538	1740	2995	546
Grp Volume(v), veh/h	115	214	110	259	199	22	164	463	220	30	595	596
Grp Sat Flow(s),veh/h/ln	1656	1792	1482	1721	1743	1518	1645	1703	1538	1740	1772	1769
Q Serve(g_s), s	2.6	8.8	5.2	5.7	7.9	0.9	7.6	6.7	7.1	1.3	25.4	25.5
Cycle Q Clear(g_c), s	2.6	8.8	5.2	5.7	7.9	0.9	7.6	6.7	7.1	1.3	25.4	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	184	303	251	340	370	322	198	1535	693	43	630	629
V/C Ratio(X)	0.62	0.71	0.44	0.76	0.54	0.07	0.83	0.30	0.32	0.70	0.95	0.95
Avail Cap(c_a), veh/h	319	552	457	345	544	474	222	1535	693	132	630	629
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	36.0	30.5	29.0	34.2	27.3	24.5	33.5	13.6	13.7	37.7	24.4	24.4
Incr Delay (d2), s/veh	3.4	6.3	2.6	9.5	2.6	0.2	20.7	0.2	0.6	18.9	23.7	24.2
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	1.3	4.9	2.3	3.1	4.1	0.4	4.6	3.2	3.1	0.9	16.5	16.6
LnGrp Delay(d),s/veh	39.4	36.8	31.6	43.7	29.9	24.7	54.2	13.8	14.3	56.6	48.0	48.6
LnGrp LOS	D	D	C	D	C	C	D	B	B	E	D	D
Approach Vol, veh/h		439			480			847			1221	
Approach Delay, s/veh		36.2			37.1			21.8			48.5	
Approach LOS		D			D			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	6.4	40.6	12.2	18.7	13.9	33.2	8.8	22.0
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.9	32.3	7.8	24.0	10.5	27.7	7.5	24.3
Max Q Clear Time (g_c+I1), s	3.3	9.1	7.7	10.8	9.6	27.5	4.6	9.9
Green Ext Time (p_c), s	0.0	7.5	0.0	2.4	0.0	0.2	0.1	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	212	317	182	521	340	49	157	1261	487	26	1025
v/c Ratio	0.53	0.78	0.37	0.96	0.68	0.09	0.89	0.84	0.45	0.31	0.95
Control Delay	45.9	49.7	7.9	71.6	40.4	0.3	89.3	33.7	6.2	55.7	51.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	49.7	7.9	71.6	40.4	0.3	89.3	33.7	6.2	55.7	51.9
Queue Length 50th (ft)	67	187	3	172	190	0	101	350	53	16	332
Queue Length 95th (ft)	99	#282	55	#273	296	0	#218	#564	144	44	#463
Internal Link Dist (ft)		429			1915			582			355
Turn Bay Length (ft)	120		120	150		150	190			215	
Base Capacity (vph)	513	447	516	544	506	540	177	1499	1090	84	1075
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.71	0.35	0.96	0.67	0.09	0.89	0.84	0.45	0.31	0.95

Intersection Summary

\#   95th percentile volume exceeds capacity, queue may be longer.

   Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	282	162	464	303	44	140	1122	433	23	751	161
Future Volume (veh/h)	189	282	162	464	303	44	140	1122	433	23	751	161
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		0.99	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	1881	1827	1845	1845	1863	1810	1810	1881	1845	1743	1853	1900
Adj Flow Rate, veh/h	212	317	182	521	340	49	157	1261	487	26	844	181
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	3	3	2	5	5	1	3	9	2	2
Cap, veh/h	292	384	329	558	539	440	181	1420	879	35	903	194
Arrive On Green	0.08	0.21	0.21	0.16	0.29	0.29	0.11	0.40	0.40	0.02	0.31	0.31
Sat Flow, veh/h	3476	1827	1568	3408	1863	1518	1723	3574	1568	1660	2886	619
Grp Volume(v), veh/h	212	317	182	521	340	49	157	1261	487	26	515	510
Grp Sat Flow(s),veh/h/ln	1738	1827	1568	1704	1863	1518	1723	1787	1568	1660	1760	1744
Q Serve(g_s), s	5.7	15.9	10.0	14.5	15.2	2.3	8.6	31.5	19.0	1.5	27.3	27.3
Cycle Q Clear(g_c), s	5.7	15.9	10.0	14.5	15.2	2.3	8.6	31.5	19.0	1.5	27.3	27.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	292	384	329	558	539	440	181	1420	879	35	551	546
V/C Ratio(X)	0.73	0.83	0.55	0.93	0.63	0.11	0.87	0.89	0.55	0.75	0.93	0.94
Avail Cap(c_a), veh/h	525	457	392	558	539	440	181	1420	879	86	554	549
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	42.9	36.2	33.9	39.6	29.6	25.0	42.3	26.9	13.4	46.7	32.0	32.0
Incr Delay (d2), s/veh	3.4	12.9	3.1	23.1	3.4	0.2	32.7	7.7	1.3	27.3	23.9	24.1
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	2.9	9.4	4.6	8.6	8.3	1.0	5.7	16.9	8.5	0.9	16.8	16.7
LnGrp Delay(d),s/veh	46.3	49.1	37.0	62.8	33.0	25.3	75.0	34.6	14.7	74.1	55.9	56.1
LnGrp LOS	D	D	D	E	C	C	E	C	B	E	E	E
Approach Vol, veh/h		711			910			1905			1051	
Approach Delay, s/veh		45.2			49.6			32.9			56.5	
Approach LOS		D			D			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	6.5	43.6	20.2	25.6	14.6	35.5	12.6	33.3
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.0	35.3	15.7	24.0	10.1	30.2	14.5	25.2
Max Q Clear Time (g_c+I1), s	3.5	33.5	16.5	17.9	10.6	29.3	7.7	17.2
Green Ext Time (p_c), s	0.0	1.7	0.0	2.2	0.0	0.8	0.4	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	43.5
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	148	229	145	538	204	26	150	818	504	31	942
v/c Ratio	0.41	0.57	0.33	0.95	0.41	0.05	0.91	0.59	0.44	0.29	0.93
Control Delay	39.3	35.5	6.9	64.5	28.0	0.2	92.6	24.2	4.1	46.8	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	35.5	6.9	64.5	28.0	0.2	92.6	24.2	4.1	46.8	46.1
Queue Length 50th (ft)	38	109	0	146	88	0	80	161	19	16	248
Queue Length 95th (ft)	70	177	44	#269	153	0	#206	293	96	46	#414
Internal Link Dist (ft)		429			1915			582			326
Turn Bay Length (ft)	120		120	150		150	190			215	
Base Capacity (vph)	450	538	552	566	591	601	164	1375	1135	107	1013
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.43	0.26	0.95	0.35	0.04	0.91	0.59	0.44	0.29	0.93

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	215	136	506	192	24	141	769	474	29	762	123
Future Volume (veh/h)	139	215	136	506	192	24	141	769	474	29	762	123
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		0.99	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	1881	1845	1881	1863	1900	1792	1827	1863	1900	1860	1900
Adj Flow Rate, veh/h	148	229	145	538	204	26	150	818	504	31	811	131
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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	1	3	1	2	0	6	4	2	0	2	2
Cap, veh/h	230	327	273	600	521	446	174	1305	869	45	911	147
Arrive On Green	0.07	0.17	0.17	0.17	0.28	0.28	0.10	0.38	0.38	0.02	0.30	0.30
Sat Flow, veh/h	3408	1881	1568	3476	1863	1594	1707	3471	1583	1810	3048	492
Grp Volume(v), veh/h	148	229	145	538	204	26	150	818	504	31	470	472
Grp Sat Flow(s),veh/h/ln	1704	1881	1568	1738	1863	1594	1707	1736	1583	1810	1767	1773
Q Serve(g_s), s	3.4	9.1	6.7	12.0	7.0	0.9	6.9	15.3	16.7	1.3	20.2	20.2
Cycle Q Clear(g_c), s	3.4	9.1	6.7	12.0	7.0	0.9	6.9	15.3	16.7	1.3	20.2	20.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	230	327	273	600	521	446	174	1305	869	45	528	530
V/C Ratio(X)	0.64	0.70	0.53	0.90	0.39	0.06	0.86	0.63	0.58	0.69	0.89	0.89
Avail Cap(c_a), veh/h	477	569	475	600	625	535	174	1305	869	114	539	541
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	36.1	30.8	29.8	32.1	23.1	20.9	35.0	20.2	11.8	38.4	26.6	26.6
Incr Delay (d2), s/veh	3.0	5.7	3.4	16.1	1.0	0.1	32.7	1.4	1.6	16.8	17.6	17.6
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	1.7	5.2	3.1	7.1	3.8	0.4	4.8	7.5	7.6	0.9	12.4	12.4
LnGrp Delay(d),s/veh	39.1	36.5	33.2	48.2	24.1	21.0	67.7	21.6	13.4	55.2	44.2	44.1
LnGrp LOS	D	D	C	D	C	C	E	C	B	E	D	D
Approach Vol, veh/h		522			768			1472			973	
Approach Delay, s/veh		36.3			40.9			23.5			44.5	
Approach LOS		D			D			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	6.5	35.3	18.2	19.3	12.6	29.2	9.8	27.7
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.0	27.3	13.7	24.0	8.1	24.2	11.1	26.6
Max Q Clear Time (g_c+I1), s	3.3	18.7	14.0	11.1	8.9	22.2	5.4	9.0
Green Ext Time (p_c), s	0.0	6.7	0.0	2.7	0.0	1.5	0.2	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.3
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	115	214	117	266	199	22	171	470	228	30	1199
v/c Ratio	0.40	0.58	0.25	0.83	0.47	0.04	0.83	0.30	0.22	0.25	1.03
Control Delay	41.7	36.1	1.8	60.8	32.2	0.1	69.4	16.5	2.2	43.9	62.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	36.1	1.8	60.8	32.2	0.1	69.4	16.5	2.2	43.9	62.5
Queue Length 50th (ft)	29	101	0	71	93	0	88	67	0	15	~332
Queue Length 95th (ft)	59	168	6	#150	157	0	#215	144	34	44	#541
Internal Link Dist (ft)		429			1915			582			306
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	297	516	565	321	508	580	206	1586	1047	122	1168
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.41	0.21	0.83	0.39	0.04	0.83	0.30	0.22	0.25	1.03

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↑	↱	↰↱	↑	↱	↰↱	↑↑	↱	↰↱	↑↱	
Traffic Volume (veh/h)	108	201	110	250	187	21	161	442	214	28	954	173
Future Volume (veh/h)	108	201	110	250	187	21	161	442	214	28	954	173
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		0.99	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	1792	1792	1743	1863	1743	1810	1727	1792	1810	1827	1866	1900
Adj Flow Rate, veh/h	115	214	117	266	199	22	171	470	228	30	1015	184
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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, %	6	6	9	2	9	5	10	6	5	4	2	2
Cap, veh/h	184	303	251	342	371	323	204	1541	849	43	1058	191
Arrive On Green	0.06	0.17	0.17	0.10	0.21	0.21	0.12	0.45	0.45	0.02	0.35	0.35
Sat Flow, veh/h	3312	1792	1482	3442	1743	1518	1645	3406	1538	1740	2999	543
Grp Volume(v), veh/h	115	214	117	266	199	22	171	470	228	30	599	600
Grp Sat Flow(s),veh/h/ln	1656	1792	1482	1721	1743	1518	1645	1703	1538	1740	1772	1770
Q Serve(g_s), s	2.7	8.8	5.6	5.9	8.0	0.9	8.0	6.9	6.1	1.3	26.0	26.1
Cycle Q Clear(g_c), s	2.7	8.8	5.6	5.9	8.0	0.9	8.0	6.9	6.1	1.3	26.0	26.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	184	303	251	342	371	323	204	1541	849	43	625	624
V/C Ratio(X)	0.63	0.71	0.47	0.78	0.54	0.07	0.84	0.30	0.27	0.70	0.96	0.96
Avail Cap(c_a), veh/h	316	548	453	342	539	470	220	1541	849	131	625	624
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	36.3	30.8	29.4	34.5	27.5	24.7	33.6	13.7	9.3	38.0	24.9	24.9
Incr Delay (d2), s/veh	3.5	6.3	2.9	10.9	2.6	0.2	22.4	0.2	0.4	19.1	26.4	26.9
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	4.9	2.5	3.3	4.1	0.4	4.9	3.2	2.6	0.9	17.2	17.3
LnGrp Delay(d),s/veh	39.8	37.1	32.3	45.4	30.0	24.9	56.1	13.9	9.6	57.1	51.2	51.8
LnGrp LOS	D	D	C	D	C	C	E	B	A	E	D	D
Approach Vol, veh/h		446			487			869			1229	
Approach Delay, s/veh		36.5			38.2			21.1			51.7	
Approach LOS		D			D			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	6.4	41.0	12.3	18.8	14.3	33.2	8.9	22.2
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.9	32.3	7.8	24.0	10.5	27.7	7.5	24.3
Max Q Clear Time (g_c+I1), s	3.3	8.9	7.9	10.8	10.0	28.1	4.7	10.0
Green Ext Time (p_c), s	0.0	7.7	0.0	2.4	0.0	0.0	0.1	1.7

Intersection Summary

HCM 2010 Ctrl Delay	38.5
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	212	317	204	548	340	49	181	1283	513	26	1046
v/c Ratio	0.53	0.78	0.42	1.01	0.68	0.09	1.02	0.86	0.47	0.31	0.97
Control Delay	45.9	49.7	10.1	82.8	40.4	0.3	119.8	34.6	6.7	55.7	55.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	49.7	10.1	82.8	40.4	0.3	119.8	34.6	6.7	55.7	55.7
Queue Length 50th (ft)	67	187	14	~193	190	0	~126	360	60	16	341
Queue Length 95th (ft)	99	#282	71	#292	296	0	#256	#580	161	44	#479
Internal Link Dist (ft)		429			1915			582			355
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	513	447	516	544	506	540	177	1499	1090	84	1075
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.71	0.40	1.01	0.67	0.09	1.02	0.86	0.47	0.31	0.97

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↱↱	↑	↱	↱↱	↑	↱	↰	↑↑	↱	↰	↑↑	
Traffic Volume (veh/h)	189	282	182	488	303	44	161	1142	457	23	770	161
Future Volume (veh/h)	189	282	182	488	303	44	161	1142	457	23	770	161
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		0.99	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	1881	1827	1845	1845	1863	1810	1810	1881	1845	1743	1853	1900
Adj Flow Rate, veh/h	212	317	204	548	340	49	181	1283	513	26	865	181
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	3	3	2	5	5	1	3	9	2	2
Cap, veh/h	291	384	330	556	540	440	181	1422	879	35	910	190
Arrive On Green	0.08	0.21	0.21	0.16	0.29	0.29	0.10	0.40	0.40	0.02	0.31	0.31
Sat Flow, veh/h	3476	1827	1568	3408	1863	1518	1723	3574	1568	1660	2900	607
Grp Volume(v), veh/h	212	317	204	548	340	49	181	1283	513	26	525	521
Grp Sat Flow(s),veh/h/ln	1738	1827	1568	1704	1863	1518	1723	1787	1568	1660	1761	1746
Q Serve(g_s), s	5.7	16.0	11.4	15.4	15.3	2.3	10.1	32.5	20.5	1.5	28.1	28.1
Cycle Q Clear(g_c), s	5.7	16.0	11.4	15.4	15.3	2.3	10.1	32.5	20.5	1.5	28.1	28.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	291	384	330	556	540	440	181	1422	879	35	552	548
V/C Ratio(X)	0.73	0.82	0.62	0.99	0.63	0.11	1.00	0.90	0.58	0.75	0.95	0.95
Avail Cap(c_a), veh/h	524	456	391	556	540	440	181	1422	879	86	553	548
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	43.0	36.3	34.5	40.2	29.7	25.1	43.1	27.2	13.8	46.9	32.3	32.3
Incr Delay (d2), s/veh	3.5	12.7	4.2	34.3	3.4	0.2	67.1	8.7	1.6	27.4	26.9	27.1
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	2.9	9.4	5.3	9.9	8.3	1.0	8.1	17.6	9.3	0.9	17.7	17.6
LnGrp Delay(d),s/veh	46.5	49.0	38.7	74.5	33.0	25.3	110.2	36.0	15.4	74.3	59.2	59.4
LnGrp LOS	D	D	D	E	C	C	F	D	B	E	E	E
Approach Vol, veh/h		733			937			1977			1072	
Approach Delay, s/veh		45.4			56.9			37.4			59.7	
Approach LOS		D			E			D			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	6.5	43.8	20.2	25.8	14.6	35.7	12.6	33.4
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.0	35.3	15.7	24.0	10.1	30.2	14.5	25.2
Max Q Clear Time (g_c+I1), s	3.5	34.5	17.4	18.0	12.1	30.1	7.7	17.3
Green Ext Time (p_c), s	0.0	0.8	0.0	2.3	0.0	0.1	0.4	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	47.6
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	148	229	188	589	204	26	191	859	553	31	983
v/c Ratio	0.41	0.57	0.42	1.04	0.41	0.05	1.16	0.62	0.49	0.29	0.97
Control Delay	39.3	35.5	11.2	85.4	28.0	0.2	159.2	25.0	4.9	46.8	52.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	35.5	11.2	85.4	28.0	0.2	159.2	25.0	4.9	46.8	52.9
Queue Length 50th (ft)	38	109	18	~175	88	0	~121	171	28	16	263
Queue Length 95th (ft)	70	177	71	#303	153	0	#269	311	128	46	#442
Internal Link Dist (ft)		429			1915			582			326
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	450	538	552	566	591	601	164	1375	1135	107	1014
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.43	0.34	1.04	0.35	0.04	1.16	0.62	0.49	0.29	0.97

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↱↱	↑	↱	↱↱	↑	↱	↱	↑↑	↱	↱	↑↑	
Traffic Volume (veh/h)	139	215	177	554	192	24	180	807	520	29	801	123
Future Volume (veh/h)	139	215	177	554	192	24	180	807	520	29	801	123
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		0.99	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	1881	1845	1881	1863	1900	1792	1827	1863	1900	1860	1900
Adj Flow Rate, veh/h	148	229	188	589	204	26	191	859	553	31	852	131
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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	1	3	1	2	0	6	4	2	0	2	2
Cap, veh/h	229	333	277	595	523	448	173	1309	868	45	924	142
Arrive On Green	0.07	0.18	0.18	0.17	0.28	0.28	0.10	0.38	0.38	0.02	0.30	0.30
Sat Flow, veh/h	3408	1881	1568	3476	1863	1594	1707	3471	1583	1810	3072	472
Grp Volume(v), veh/h	148	229	188	589	204	26	191	859	553	31	490	493
Grp Sat Flow(s),veh/h/ln	1704	1881	1568	1738	1863	1594	1707	1736	1583	1810	1767	1777
Q Serve(g_s), s	3.4	9.1	9.0	13.5	7.1	1.0	8.1	16.4	19.4	1.4	21.5	21.5
Cycle Q Clear(g_c), s	3.4	9.1	9.0	13.5	7.1	1.0	8.1	16.4	19.4	1.4	21.5	21.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	229	333	277	595	523	448	173	1309	868	45	531	534
V/C Ratio(X)	0.65	0.69	0.68	0.99	0.39	0.06	1.10	0.66	0.64	0.69	0.92	0.92
Avail Cap(c_a), veh/h	473	564	470	595	619	530	173	1309	868	113	535	538
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	36.4	30.9	30.8	33.1	23.2	21.0	35.9	20.6	12.5	38.7	27.1	27.1
Incr Delay (d2), s/veh	3.0	5.3	6.1	34.1	1.0	0.1	99.3	1.6	2.2	17.0	22.4	22.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.2	4.3	9.3	3.8	0.4	8.6	8.1	8.8	0.9	13.8	13.8
LnGrp Delay(d),s/veh	39.4	36.2	36.9	67.1	24.2	21.1	135.3	22.3	14.7	55.7	49.4	49.3
LnGrp LOS	D	D	D	E	C	C	F	C	B	E	D	D
Approach Vol, veh/h		565			819			1603			1014	
Approach Delay, s/veh		37.3			55.0			33.1			49.6	
Approach LOS		D			E			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	6.5	35.7	18.2	19.6	12.6	29.5	9.9	28.0
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.0	27.3	13.7	24.0	8.1	24.2	11.1	26.6
Max Q Clear Time (g_c+I1), s	3.4	21.4	15.5	11.1	10.1	23.5	5.4	9.1
Green Ext Time (p_c), s	0.0	4.9	0.0	3.0	0.0	0.6	0.2	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.4
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	90	117	80	489	378	69	234	702	218	64	1851
v/c Ratio	0.48	0.43	0.23	1.03	0.94	0.16	1.04	0.39	0.19	0.54	1.21
Control Delay	76.9	62.5	1.5	111.0	86.7	1.4	129.7	23.2	1.5	83.8	138.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	62.5	1.5	111.0	86.7	1.4	129.7	23.2	1.5	83.8	138.6
Queue Length 50th (ft)	44	104	0	~265	364	0	~247	224	0	61	~1169
Queue Length 95th (ft)	75	171	0	#381	#561	5	#424	280	28	113	#1306
Internal Link Dist (ft)		429			1915			582			5309
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	202	289	364	474	415	450	226	1782	1140	141	1527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.40	0.22	1.03	0.91	0.15	1.04	0.39	0.19	0.45	1.21

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↱↱	↑	↱	↱↱	↑	↱	↰	↑↑	↱	↰	↑↑	
Traffic Volume (veh/h)	85	110	75	460	355	65	220	660	205	60	1490	250
Future Volume (veh/h)	85	110	75	460	355	65	220	660	205	60	1490	250
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		0.99	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	1792	1792	1743	1863	1743	1810	1727	1792	1810	1827	1865	1900
Adj Flow Rate, veh/h	90	117	80	489	378	69	234	702	218	64	1585	266
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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, %	6	6	9	2	9	5	10	6	5	4	2	2
Cap, veh/h	132	236	195	486	406	354	232	1848	1052	81	1366	224
Arrive On Green	0.04	0.13	0.13	0.14	0.23	0.23	0.14	0.54	0.54	0.05	0.45	0.45
Sat Flow, veh/h	3312	1792	1482	3442	1743	1518	1645	3406	1538	1740	3049	500
Grp Volume(v), veh/h	90	117	80	489	378	69	234	702	218	64	906	945
Grp Sat Flow(s),veh/h/ln	1656	1792	1482	1721	1743	1518	1645	1703	1538	1740	1772	1777
Q Serve(g_s), s	3.9	8.8	7.2	20.5	30.8	5.3	20.5	17.2	7.6	5.3	65.0	65.0
Cycle Q Clear(g_c), s	3.9	8.8	7.2	20.5	30.8	5.3	20.5	17.2	7.6	5.3	65.0	65.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	132	236	195	486	406	354	232	1848	1052	81	794	796
V/C Ratio(X)	0.68	0.50	0.41	1.01	0.93	0.19	1.01	0.38	0.21	0.79	1.14	1.19
Avail Cap(c_a), veh/h	208	296	245	486	425	370	232	1848	1052	145	794	796
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	68.8	58.5	57.8	62.3	54.5	44.7	62.3	19.1	8.5	68.5	40.1	40.1
Incr Delay (d2), s/veh	6.0	3.4	2.9	42.3	27.6	0.6	60.8	0.3	0.2	15.4	78.5	96.8
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	1.9	4.6	3.1	12.6	17.9	2.3	13.2	8.2	3.3	2.9	49.1	53.2
LnGrp Delay(d),s/veh	74.8	61.9	60.7	104.6	82.1	45.3	123.2	19.4	8.7	83.9	118.6	136.8
LnGrp LOS	E	E	E	F	F	D	F	B	A	F	F	F
Approach Vol, veh/h		287			936			1154			1915	
Approach Delay, s/veh		65.6			91.2			38.4			126.4	
Approach LOS		E			F			D			F	

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	11.3	84.2	25.0	24.6	25.0	70.5	10.3	39.3
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	12.1	73.4	20.5	24.0	20.5	65.0	9.1	35.4
Max Q Clear Time (g_c+I1), s	7.3	19.2	22.5	10.8	22.5	67.0	5.9	32.8
Green Ext Time (p_c), s	0.0	14.8	0.0	1.3	0.0	0.0	0.1	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	91.0
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	147	348	261	538	207	76	141	1598	598	38	1098
v/c Ratio	0.50	1.00	0.61	0.98	0.41	0.15	0.78	0.96	0.55	0.59	0.81
Control Delay	62.3	99.2	25.3	87.2	42.8	0.7	84.2	47.5	10.7	96.3	40.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.5	0.8	0.0	0.0
Total Delay	62.3	99.2	25.3	87.2	42.8	0.7	84.2	84.0	11.5	96.3	40.9
Queue Length 50th (ft)	62	~301	76	236	145	0	117	678	191	32	428
Queue Length 95th (ft)	95	#500	172	#355	229	1	#217	#855	286	#88	518
Internal Link Dist (ft)		429			1915			582			4602
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	509	349	429	550	500	506	194	1670	1095	64	1381
Starvation Cap Reductn	0	0	0	0	0	0	0	196	234	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	1.00	0.61	0.98	0.41	0.15	0.73	1.08	0.69	0.59	0.80

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑	↱	↰↰	↑	↱	↰	↑↑	↱	↰	↑↱	
Traffic Volume (veh/h)	135	320	240	495	190	70	130	1470	550	35	940	70
Future Volume (veh/h)	135	320	240	495	190	70	130	1470	550	35	940	70
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		0.99	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	1881	1827	1845	1845	1863	1810	1810	1881	1845	1743	1859	1900
Adj Flow Rate, veh/h	147	348	261	538	207	76	141	1598	598	38	1022	76
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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, %	1	4	3	3	2	5	5	1	3	9	2	2
Cap, veh/h	206	348	299	549	544	444	165	1661	981	47	1324	98
Arrive On Green	0.06	0.19	0.19	0.16	0.29	0.29	0.10	0.46	0.46	0.03	0.40	0.40
Sat Flow, veh/h	3476	1827	1568	3408	1863	1518	1723	3574	1568	1660	3333	248
Grp Volume(v), veh/h	147	348	261	538	207	76	141	1598	598	38	541	557
Grp Sat Flow(s),veh/h/ln	1738	1827	1568	1704	1863	1518	1723	1787	1568	1660	1766	1815
Q Serve(g_s), s	5.3	24.5	20.8	20.2	11.4	4.8	10.4	55.7	29.7	2.9	34.3	34.3
Cycle Q Clear(g_c), s	5.3	24.5	20.8	20.2	11.4	4.8	10.4	55.7	29.7	2.9	34.3	34.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	206	348	299	549	544	444	165	1661	981	47	701	721
V/C Ratio(X)	0.71	1.00	0.87	0.98	0.38	0.17	0.85	0.96	0.61	0.80	0.77	0.77
Avail Cap(c_a), veh/h	508	348	299	549	544	444	194	1662	981	65	701	721
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	59.4	52.1	50.6	53.8	36.2	33.9	57.2	33.3	14.6	62.1	33.7	33.7
Incr Delay (d2), s/veh	4.5	48.2	25.0	33.4	0.9	0.4	25.8	14.4	1.6	38.7	6.2	6.0
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	2.7	16.9	11.1	12.0	6.0	2.1	6.1	30.6	13.3	1.8	17.9	18.4
LnGrp Delay(d),s/veh	64.0	100.3	75.6	87.2	37.2	34.3	83.0	47.7	16.2	100.8	39.9	39.8
LnGrp LOS	E	F	E	F	D	C	F	D	B	F	D	D
Approach Vol, veh/h		756			821			2337			1136	
Approach Delay, s/veh		84.7			69.7			41.8			41.9	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	65.3	25.2	30.0	16.8	56.6	12.1	43.1
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.0	59.8	20.7	24.5	14.5	50.3	18.8	26.4
Max Q Clear Time (g_c+I1), s	4.9	57.7	22.2	26.5	12.4	36.3	7.3	13.4
Green Ext Time (p_c), s	0.0	2.1	0.0	0.0	0.1	9.5	0.3	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	52.8
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	85	234	239	516	181	37	149	761	532	43	820
v/c Ratio	0.28	0.57	0.51	0.93	0.31	0.06	0.91	0.59	0.49	0.40	0.82
Control Delay	39.3	34.8	14.8	61.2	24.8	0.2	92.3	25.7	5.6	51.6	36.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	34.8	14.8	61.2	24.8	0.2	92.3	25.7	5.6	51.6	36.6
Queue Length 50th (ft)	22	111	37	142	75	0	81	184	44	23	212
Queue Length 95th (ft)	45	182	103	#256	133	0	#205	267	130	58	#331
Internal Link Dist (ft)		429			1915			582			6350
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	404	537	558	557	625	627	164	1285	1088	107	1023
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.44	0.43	0.93	0.29	0.06	0.91	0.59	0.49	0.40	0.80

Intersection Summary

\#   95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↱↱	↑	↗	↱↱	↑	↗	↰	↑↑	↗	↰	↑↑	
Traffic Volume (veh/h)	80	220	225	485	170	35	140	715	500	40	730	40
Future Volume (veh/h)	80	220	225	485	170	35	140	715	500	40	730	40
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		0.99	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	1881	1845	1881	1863	1900	1792	1827	1863	1900	1862	1900
Adj Flow Rate, veh/h	85	234	239	516	181	37	149	761	532	43	777	43
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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	1	3	1	2	0	6	4	2	0	2	2
Cap, veh/h	146	386	321	582	614	525	172	1211	817	56	951	53
Arrive On Green	0.04	0.20	0.20	0.17	0.33	0.33	0.10	0.35	0.35	0.03	0.28	0.28
Sat Flow, veh/h	3408	1881	1568	3476	1863	1595	1707	3471	1583	1810	3409	189
Grp Volume(v), veh/h	85	234	239	516	181	37	149	761	532	43	403	417
Grp Sat Flow(s),veh/h/ln	1704	1881	1568	1738	1863	1595	1707	1736	1583	1810	1769	1829
Q Serve(g_s), s	2.0	9.1	11.5	11.7	5.8	1.3	6.9	14.7	19.7	1.9	17.2	17.2
Cycle Q Clear(g_c), s	2.0	9.1	11.5	11.7	5.8	1.3	6.9	14.7	19.7	1.9	17.2	17.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	146	386	321	582	614	525	172	1211	817	56	493	510
V/C Ratio(X)	0.58	0.61	0.74	0.89	0.29	0.07	0.87	0.63	0.65	0.77	0.82	0.82
Avail Cap(c_a), veh/h	423	560	467	582	635	544	172	1211	817	112	535	553
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	37.9	29.1	30.1	32.8	20.1	18.5	35.7	21.9	14.2	38.8	27.1	27.1
Incr Delay (d2), s/veh	3.6	3.3	7.3	15.3	0.6	0.1	34.7	1.5	2.5	20.1	10.6	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.1	5.6	6.8	3.1	0.6	4.9	7.2	9.1	1.3	9.9	10.1
LnGrp Delay(d),s/veh	41.5	32.4	37.3	48.1	20.6	18.7	70.4	23.4	16.7	58.9	37.7	37.5
LnGrp LOS	D	C	D	D	C	B	E	C	B	E	D	D
Approach Vol, veh/h		558			734			1442			863	
Approach Delay, s/veh		35.9			39.8			25.8			38.7	
Approach LOS		D			D			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	7.0	33.6	18.0	22.0	12.6	28.0	8.0	32.1
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.0	27.5	13.5	24.0	8.1	24.4	10.0	27.5
Max Q Clear Time (g_c+I1), s	3.9	21.7	13.7	13.5	8.9	19.2	4.0	7.8
Green Ext Time (p_c), s	0.0	4.6	0.0	3.0	0.0	3.3	0.1	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	90	117	87	497	378	69	241	710	226	64	1859
v/c Ratio	0.48	0.43	0.25	1.05	0.94	0.16	1.07	0.40	0.20	0.54	1.22
Control Delay	76.9	62.5	1.7	114.9	86.7	1.4	137.0	23.3	1.5	83.8	140.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	62.5	1.7	114.9	86.7	1.4	137.0	23.3	1.5	83.8	140.4
Queue Length 50th (ft)	44	104	0	~274	364	0	~261	227	0	61	~1177
Queue Length 95th (ft)	75	171	0	#391	#561	5	#440	284	28	113	#1313
Internal Link Dist (ft)		429			1915			582			5309
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	202	289	364	474	415	450	226	1782	1142	141	1528
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.40	0.24	1.05	0.91	0.15	1.07	0.40	0.20	0.45	1.22

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↱↱	↑	↱	↱↱	↑	↱	↱	↑↑	↱	↱	↑↱	
Traffic Volume (veh/h)	85	110	82	467	355	65	227	667	212	60	1497	250
Future Volume (veh/h)	85	110	82	467	355	65	227	667	212	60	1497	250
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		0.99	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	1792	1792	1743	1863	1743	1810	1727	1792	1810	1827	1865	1900
Adj Flow Rate, veh/h	90	117	87	497	378	69	241	710	226	64	1593	266
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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, %	6	6	9	2	9	5	10	6	5	4	2	2
Cap, veh/h	132	236	195	486	406	354	232	1848	1052	81	1367	223
Arrive On Green	0.04	0.13	0.13	0.14	0.23	0.23	0.14	0.54	0.54	0.05	0.45	0.45
Sat Flow, veh/h	3312	1792	1482	3442	1743	1518	1645	3406	1538	1740	3052	498
Grp Volume(v), veh/h	90	117	87	497	378	69	241	710	226	64	910	949
Grp Sat Flow(s),veh/h/ln	1656	1792	1482	1721	1743	1518	1645	1703	1538	1740	1772	1777
Q Serve(g_s), s	3.9	8.8	7.9	20.5	30.8	5.3	20.5	17.5	7.9	5.3	65.0	65.0
Cycle Q Clear(g_c), s	3.9	8.8	7.9	20.5	30.8	5.3	20.5	17.5	7.9	5.3	65.0	65.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	132	236	195	486	406	354	232	1848	1052	81	794	796
V/C Ratio(X)	0.68	0.50	0.45	1.02	0.93	0.19	1.04	0.38	0.21	0.79	1.15	1.19
Avail Cap(c_a), veh/h	208	296	245	486	425	370	232	1848	1052	145	794	796
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	68.8	58.5	58.1	62.3	54.5	44.7	62.3	19.2	8.5	68.5	40.1	40.1
Incr Delay (d2), s/veh	6.0	3.4	3.4	46.6	27.6	0.6	69.1	0.3	0.2	15.4	80.3	98.9
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	1.9	4.6	3.4	12.9	17.9	2.3	13.8	8.3	3.4	2.9	49.4	53.7
LnGrp Delay(d),s/veh	74.8	61.9	61.5	108.9	82.1	45.3	131.4	19.5	8.7	83.9	120.3	139.0
LnGrp LOS	E	E	E	F	F	D	F	B	A	F	F	F
Approach Vol, veh/h		294			944			1177			1923	
Approach Delay, s/veh		65.7			93.5			40.3			128.3	
Approach LOS		E			F			D			F	

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	11.3	84.2	25.0	24.6	25.0	70.5	10.3	39.3
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	12.1	73.4	20.5	24.0	20.5	65.0	9.1	35.4
Max Q Clear Time (g_c+I1), s	7.3	19.5	22.5	10.8	22.5	67.0	5.9	32.8
Green Ext Time (p_c), s	0.0	15.1	0.0	1.3	0.0	0.0	0.1	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	92.6
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	147	348	283	564	207	76	164	1620	624	38	1118
v/c Ratio	0.50	1.00	0.66	1.03	0.41	0.15	0.87	0.97	0.57	0.59	0.84
Control Delay	62.3	99.2	29.4	97.8	42.8	0.7	95.3	49.8	11.2	96.3	42.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.5	0.9	0.0	0.0
Total Delay	62.3	99.2	29.4	97.8	42.8	0.7	95.3	90.3	12.1	96.3	42.6
Queue Length 50th (ft)	62	~301	97	~264	145	0	138	695	208	32	440
Queue Length 95th (ft)	95	#500	200	#380	229	1	#266	#874	309	#88	531
Internal Link Dist (ft)		429			1915			582			4602
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	509	349	427	550	500	506	194	1670	1095	64	1378
Starvation Cap Reductn	0	0	0	0	0	0	0	193	226	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	1.00	0.66	1.03	0.41	0.15	0.85	1.10	0.72	0.59	0.81

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↱↱	↑	↱	↱↱	↑	↱	↱	↑↑	↱	↱	↑↱	
Traffic Volume (veh/h)	135	320	260	519	190	70	151	1490	574	35	959	70
Future Volume (veh/h)	135	320	260	519	190	70	151	1490	574	35	959	70
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		0.99	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	1881	1827	1845	1845	1863	1810	1810	1881	1845	1743	1859	1900
Adj Flow Rate, veh/h	147	348	283	564	207	76	164	1620	624	38	1042	76
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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, %	1	4	3	3	2	5	5	1	3	9	2	2
Cap, veh/h	206	348	299	548	544	444	188	1661	981	47	1282	94
Arrive On Green	0.06	0.19	0.19	0.16	0.29	0.29	0.11	0.46	0.46	0.03	0.38	0.38
Sat Flow, veh/h	3476	1827	1568	3408	1863	1518	1723	3574	1568	1660	3339	243
Grp Volume(v), veh/h	147	348	283	564	207	76	164	1620	624	38	551	567
Grp Sat Flow(s),veh/h/ln	1738	1827	1568	1704	1863	1518	1723	1787	1568	1660	1766	1816
Q Serve(g_s), s	5.3	24.5	22.9	20.7	11.4	4.8	12.1	57.1	31.8	2.9	35.9	36.0
Cycle Q Clear(g_c), s	5.3	24.5	22.9	20.7	11.4	4.8	12.1	57.1	31.8	2.9	35.9	36.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	206	348	299	548	544	444	188	1661	981	47	678	698
V/C Ratio(X)	0.71	1.00	0.95	1.03	0.38	0.17	0.87	0.98	0.64	0.80	0.81	0.81
Avail Cap(c_a), veh/h	508	348	299	548	544	444	194	1661	981	65	691	710
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	59.4	52.1	51.4	54.0	36.3	33.9	56.4	33.7	15.0	62.1	35.5	35.5
Incr Delay (d2), s/veh	4.5	48.3	38.9	45.9	0.9	0.4	31.8	16.7	1.9	38.7	8.2	8.0
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	2.7	16.9	13.1	13.2	6.0	2.1	7.4	32.0	14.2	1.8	19.0	19.5
LnGrp Delay(d),s/veh	64.0	100.4	90.3	99.9	37.2	34.3	88.3	50.4	16.9	100.8	43.7	43.5
LnGrp LOS	E	F	F	F	D	C	F	D	B	F	D	D
Approach Vol, veh/h		778			847			2408			1156	
Approach Delay, s/veh		89.8			78.7			44.3			45.5	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	65.3	25.2	30.0	18.5	54.9	12.1	43.1
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.0	59.8	20.7	24.5	14.5	50.3	18.8	26.4
Max Q Clear Time (g_c+I1), s	4.9	59.1	22.7	26.5	14.1	38.0	7.3	13.4
Green Ext Time (p_c), s	0.0	0.7	0.0	0.0	0.0	8.7	0.3	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	57.0
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	85	234	283	567	181	37	190	801	581	43	861
v/c Ratio	0.28	0.57	0.61	1.02	0.31	0.06	1.17	0.62	0.53	0.41	0.85
Control Delay	39.4	35.0	19.6	81.9	24.8	0.2	160.5	26.2	6.7	51.7	38.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	35.0	19.6	81.9	24.8	0.2	160.5	26.2	6.7	51.7	38.5
Queue Length 50th (ft)	22	111	60	~170	75	0	~123	196	59	23	226
Queue Length 95th (ft)	45	182	139	#291	133	0	#267	284	165	58	#358
Internal Link Dist (ft)		429			1915			582			6350
Turn Bay Length (ft)	150		250	215		215	210			210	
Base Capacity (vph)	402	534	553	554	622	625	163	1292	1089	106	1020
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.44	0.51	1.02	0.29	0.06	1.17	0.62	0.53	0.41	0.84

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	220	266	533	170	35	179	753	546	40	769	40
Future Volume (veh/h)	80	220	266	533	170	35	179	753	546	40	769	40
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		0.99	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	1881	1845	1881	1863	1900	1792	1827	1863	1900	1862	1900
Adj Flow Rate, veh/h	85	234	283	567	181	37	190	801	581	43	818	43
Adj No. of Lanes	2	1	1	2	1	1	1	2	1	1	2	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	1	3	1	2	0	6	4	2	0	2	2
Cap, veh/h	145	425	354	559	641	549	165	1197	801	55	952	50
Arrive On Green	0.04	0.23	0.23	0.16	0.34	0.34	0.10	0.34	0.34	0.03	0.28	0.28
Sat Flow, veh/h	3408	1881	1568	3476	1863	1595	1707	3471	1583	1810	3419	180
Grp Volume(v), veh/h	85	234	283	567	181	37	190	801	581	43	423	438
Grp Sat Flow(s),veh/h/ln	1704	1881	1568	1738	1863	1595	1707	1736	1583	1810	1769	1830
Q Serve(g_s), s	2.1	9.2	14.3	13.5	5.9	1.3	8.1	16.5	24.0	2.0	19.0	19.0
Cycle Q Clear(g_c), s	2.1	9.2	14.3	13.5	5.9	1.3	8.1	16.5	24.0	2.0	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	145	425	354	559	641	549	165	1197	801	55	492	509
V/C Ratio(X)	0.59	0.55	0.80	1.01	0.28	0.07	1.15	0.67	0.73	0.79	0.86	0.86
Avail Cap(c_a), veh/h	406	538	449	559	641	549	165	1197	801	108	514	532
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	39.4	28.7	30.7	35.2	20.0	18.5	37.9	23.4	16.2	40.4	28.7	28.7
Incr Delay (d2), s/veh	3.7	2.4	10.9	41.5	0.5	0.1	117.1	1.9	4.1	21.5	14.7	14.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.1	7.3	9.6	3.1	0.6	9.1	8.2	11.3	1.3	11.3	11.6
LnGrp Delay(d),s/veh	43.1	31.1	41.6	76.7	20.5	18.6	155.0	25.3	20.3	61.9	43.4	43.0
LnGrp LOS	D	C	D	F	C	B	F	C	C	E	D	D
Approach Vol, veh/h		602			785			1572			904	
Approach Delay, s/veh		37.7			61.0			39.1			44.1	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	34.4	18.0	24.4	12.6	28.8	8.1	34.4
Change Period (Y+Rc), s	4.5	5.5	4.5	5.5	4.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	5.0	27.5	13.5	24.0	8.1	24.4	10.0	27.5
Max Q Clear Time (g_c+I1), s	4.0	26.0	15.5	16.3	10.1	21.0	4.1	7.9
Green Ext Time (p_c), s	0.0	1.3	0.0	2.6	0.0	2.3	0.1	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.5
HCM 2010 LOS	D