

**Appendix H:
Traffic Impact Study**

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TRAFFIC IMPACT STUDY FOR PROPOSED ZACHARIAS AND BALDWIN MASTER PLAN IN PATTERSON,
CALIFORNIA

Appendix A Traffic Volume Counts
February 7, 2020

Appendix A TRAFFIC VOLUME COUNTS

Appendix for Zacharias - Baldwin MP
draft final, Mar 6, 2020

Park Center Dr & Sperry Ave

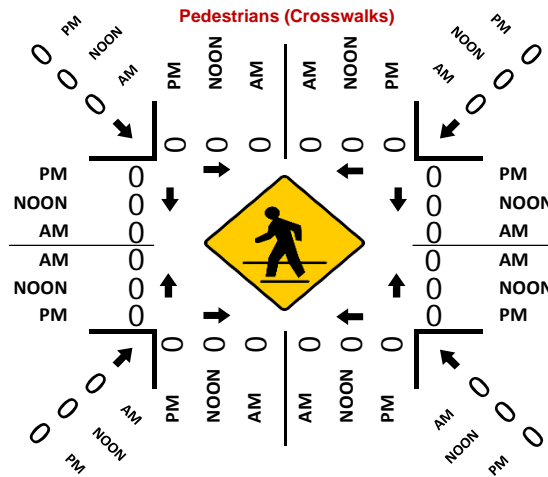
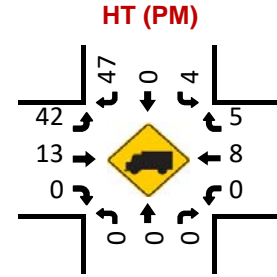
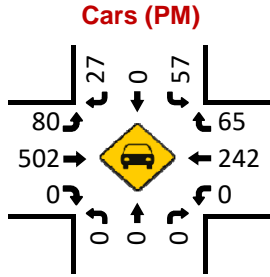
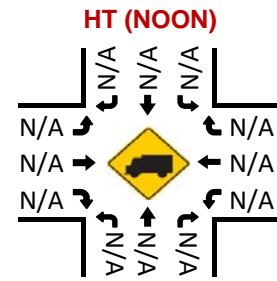
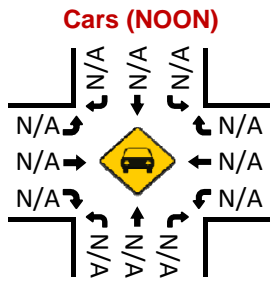
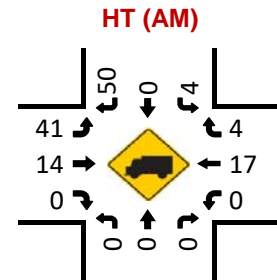
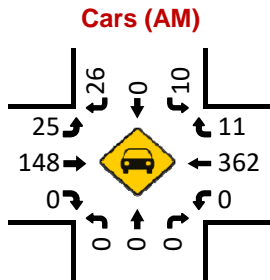
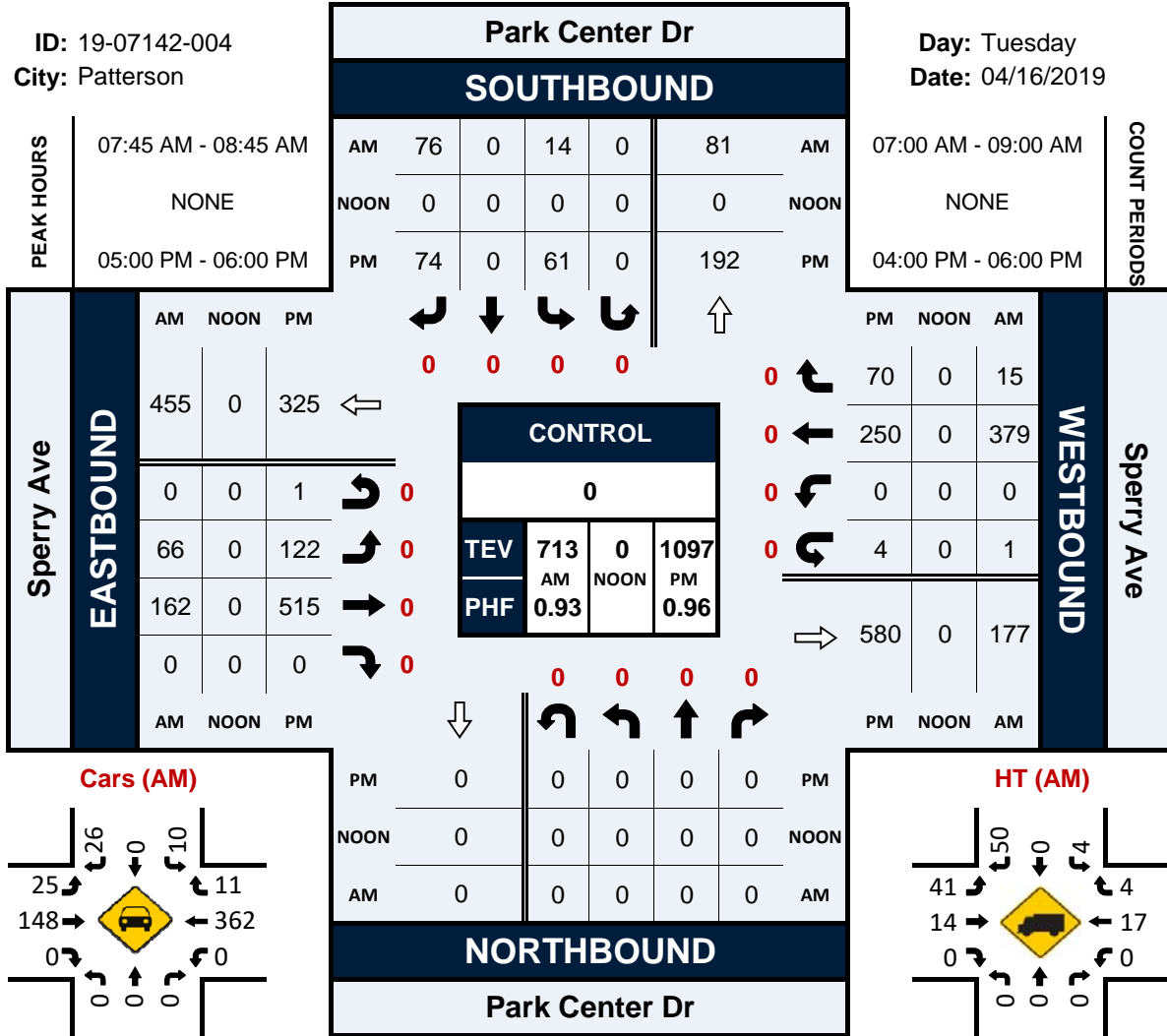
Peak Hour Turning Movement Count

ID: 19-07142-004

City: Patterson

Day: Tuesday

Date: 04/16/2019

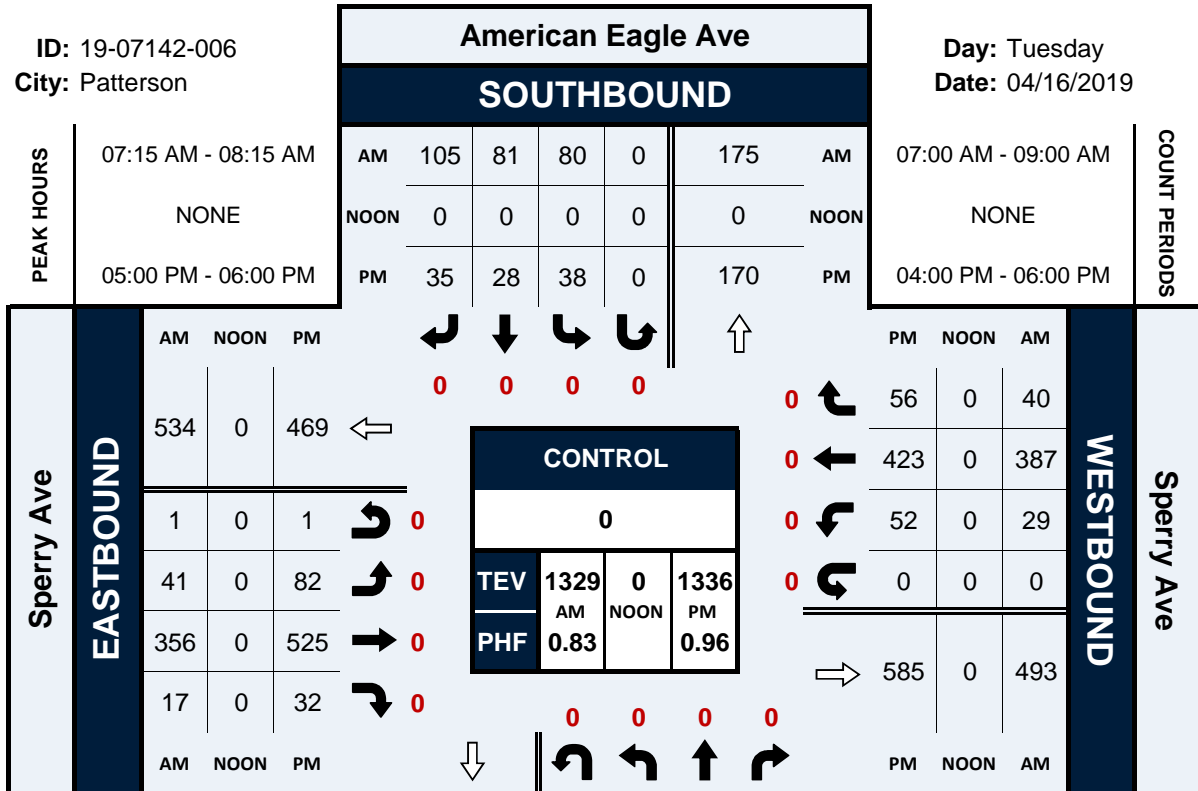


American Eagle Ave & Sperry Ave

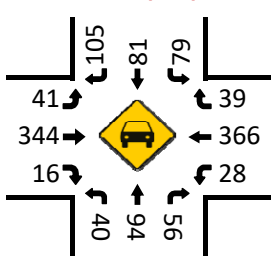
Peak Hour Turning Movement Count

ID: 19-07142-006
City: Patterson

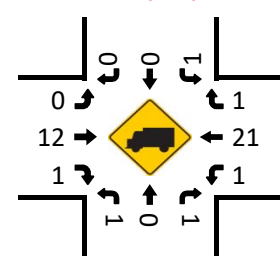
Day: Tuesday
Date: 04/16/2019



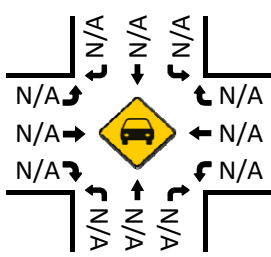
Cars (AM)



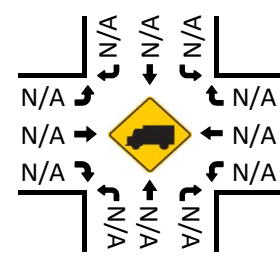
HT (AM)



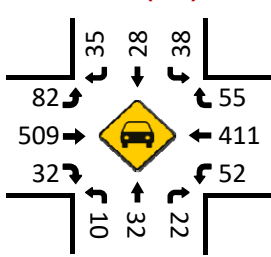
Cars (NOON)



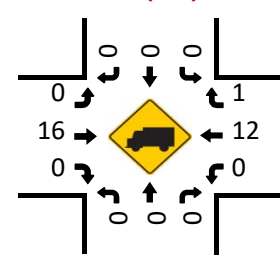
HT (NOON)



Cars (PM)



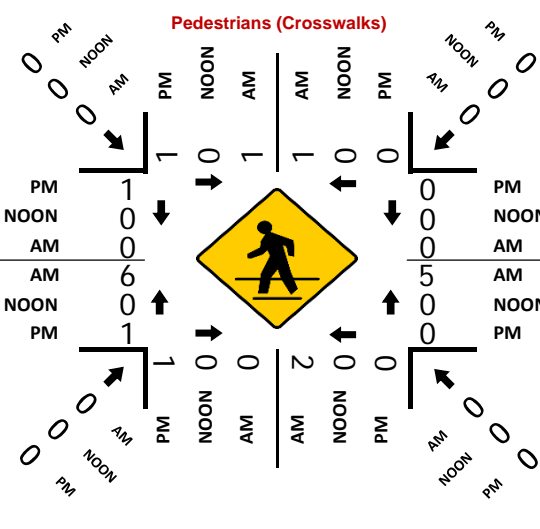
HT (PM)



American Eagle Ave NORTHBOUND

PM	112	0	10	32	22	PM
NOON	0	0	0	0	0	NOON
AM	127	0	41	94	57	AM

American Eagle Ave SOUTHBOUND

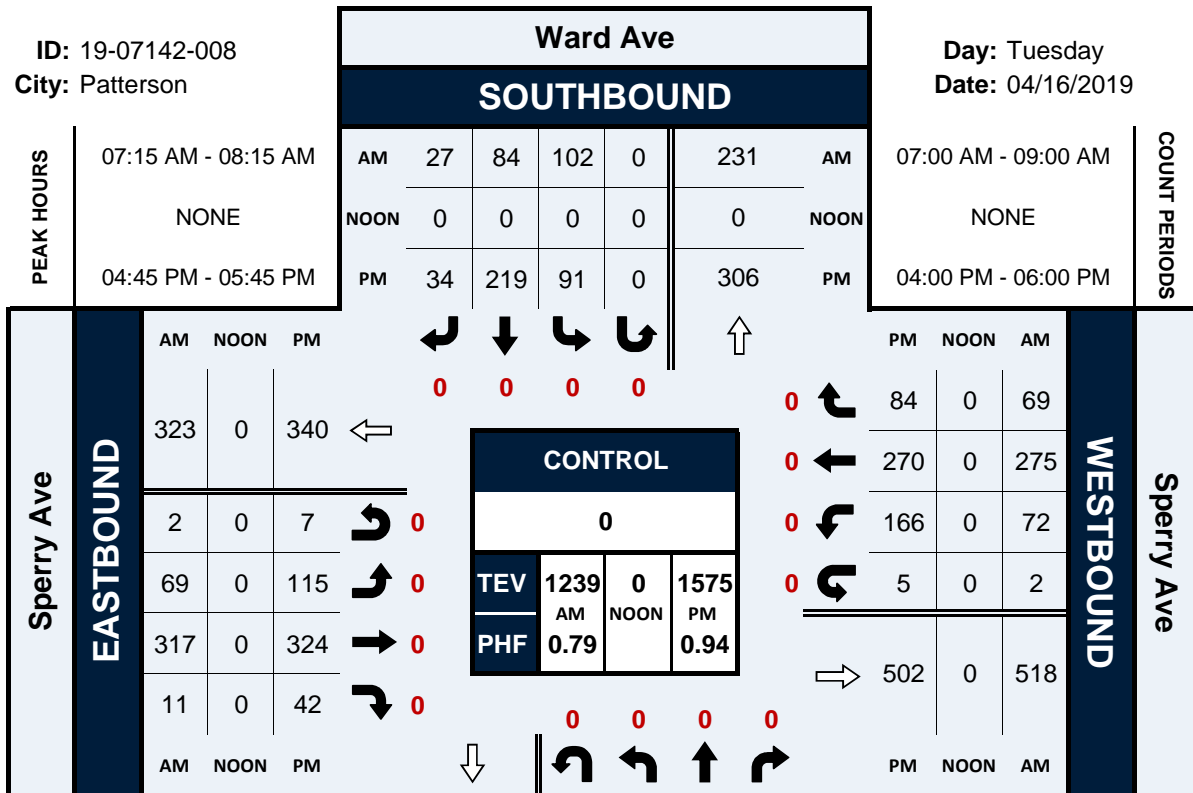


Ward Ave & Sperry Ave

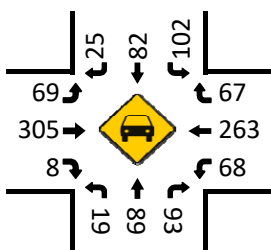
Peak Hour Turning Movement Count

ID: 19-07142-008
City: Patterson

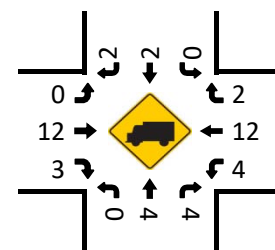
Day: Tuesday
Date: 04/16/2019



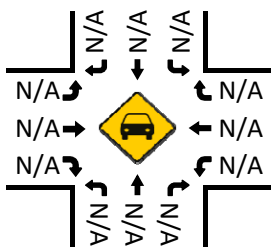
Cars (AM)



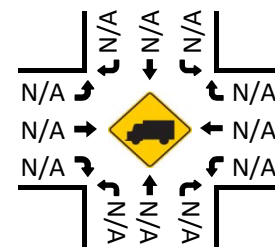
HT (AM)



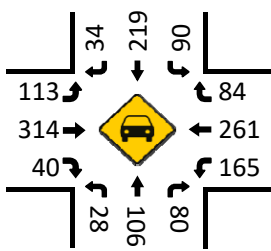
Cars (NOON)



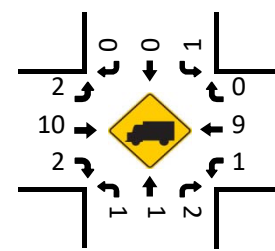
HT (NOON)



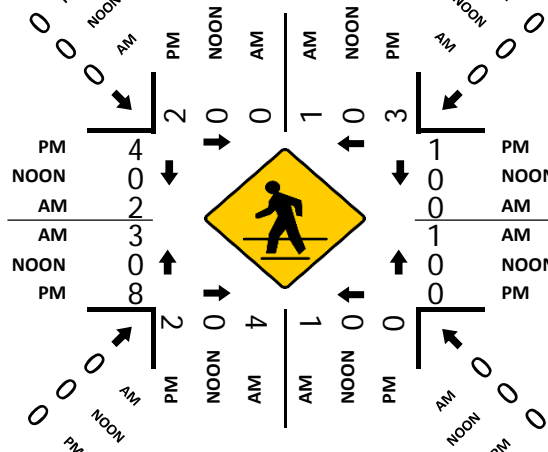
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

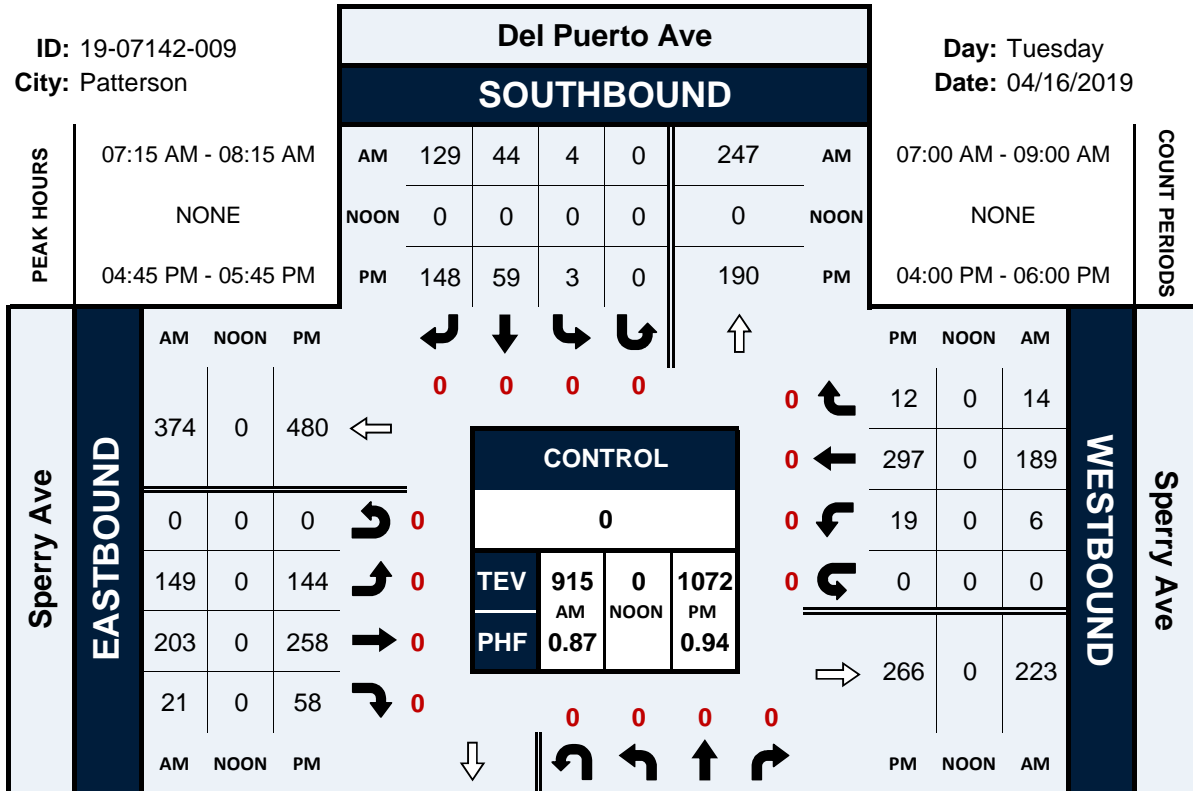


Del Puerto Ave & Sperry Ave

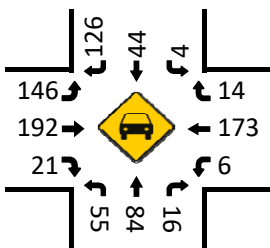
Peak Hour Turning Movement Count

ID: 19-07142-009
City: Patterson

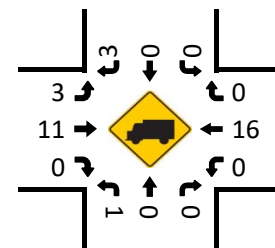
Day: Tuesday
Date: 04/16/2019



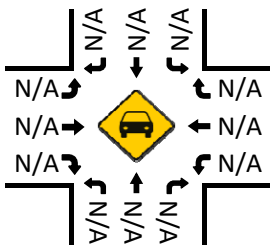
Cars (AM)



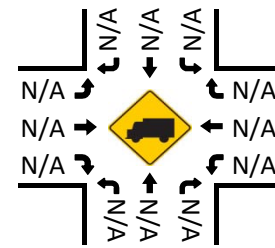
HT (AM)



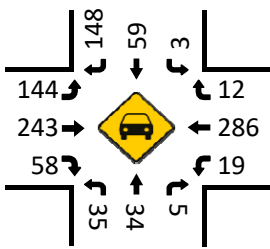
Cars (NOON)



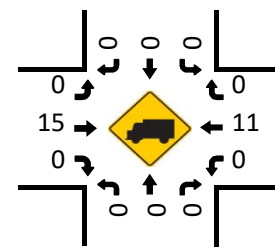
HT (NOON)



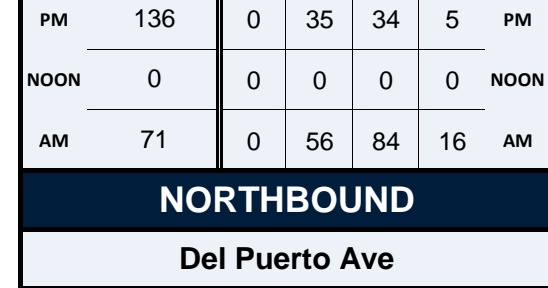
Cars (PM)



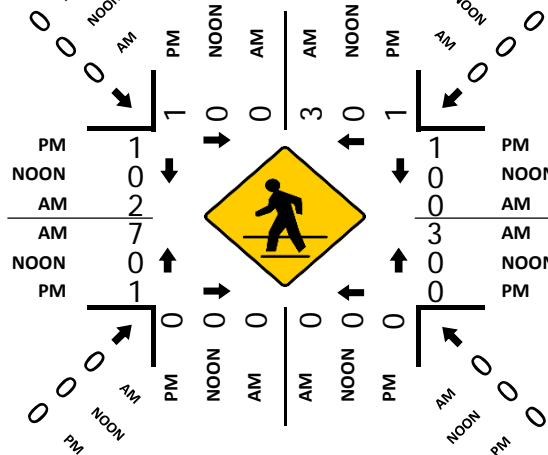
HT (PM)



Del Puerto Ave NORTHBOUND



Pedestrians (Crosswalks)



ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-010

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	SR-33 Southbound					Walnut Ave/M St Westbound					SR-33 Northbound					Walnut Ave/M St Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	1	28	3	0	32	13	9	5	0	27	8	34	18	0	60	1	15	12	0	28	147	0
7:15	2	32	2	0	36	39	35	7	0	81	15	42	24	0	81	6	38	9	0	53	251	0
7:30	10	63	7	0	80	52	42	4	0	98	17	27	31	0	75	7	50	14	0	71	324	0
7:45	7	41	15	0	63	54	48	6	0	108	20	40	33	0	93	11	43	27	0	81	345	0
Total	20	164	27	0	211	158	134	22	0	314	60	143	106	0	309	25	146	62	0	233	1067	0
8:00	4	41	6	0	51	20	22	5	0	47	4	32	14	0	50	6	42	19	0	67	215	0
8:15	0	27	4	0	31	21	24	5	0	50	0	30	12	0	42	3	17	14	0	34	157	0
8:30	6	25	1	0	32	10	13	3	0	26	3	40	5	0	48	4	11	7	0	22	128	0
8:45	1	39	0	0	40	14	7	0	0	21	6	31	7	0	44	0	15	12	0	27	132	0
Total	11	132	11	0	154	65	66	13	0	144	13	133	38	0	184	13	85	52	0	150	632	0
16:00	11	57	3	0	71	21	19	4	0	44	2	40	7	0	49	7	34	17	0	58	222	0
16:15	9	75	4	0	88	13	16	3	0	32	5	56	11	0	72	3	15	16	0	34	226	0
16:30	14	63	1	0	78	18	21	1	0	40	9	38	18	0	65	6	19	17	0	42	225	0
16:45	17	77	4	0	98	26	22	5	0	53	8	47	11	0	66	3	28	15	0	46	263	0
Total	51	272	12	0	335	78	78	13	0	169	24	181	47	0	252	19	96	65	0	180	936	0
17:00	17	76	4	0	97	17	24	3	0	44	6	48	22	0	76	0	25	9	0	34	251	0
17:15	12	68	1	0	81	8	17	4	0	29	14	39	15	0	68	3	17	10	0	30	208	0
17:30	8	62	5	0	75	20	27	2	0	49	8	41	11	0	60	3	27	8	0	38	222	0
17:45	16	64	7	0	87	14	18	4	0	36	6	26	11	0	43	1	17	10	0	28	194	0
Total	53	270	17	0	340	59	86	13	0	158	34	154	59	0	247	7	86	37	0	130	875	0
Grand Total	135	838	67	0	1040	360	364	61	0	785	131	611	250	0	992	64	413	216	0	693	3510	0
Apprch %	13.0%	80.6%	6.4%	0.0%		45.9%	46.4%	7.8%	0.0%		13.2%	61.6%	25.2%	0.0%		9.2%	59.6%	31.2%	0.0%			
Total %	3.8%	23.9%	1.9%	0.0%	29.6%	10.3%	10.4%	1.7%	0.0%	22.4%	3.7%	17.4%	7.1%	0.0%	28.3%	1.8%	11.8%	6.2%	0.0%	19.7%	100.0%	

AM PEAK HOUR	SR-33 Southbound					Walnut Ave/M St Westbound					SR-33 Northbound					Walnut Ave/M St Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	2	32	2	0	36	39	35	7	0	81	15	42	24	0	81	6	38	9	0	53	251
7:30	10	63	7	0	80	52	42	4	0	98	17	27	31	0	75	7	50	14	0	71	324
7:45	7	41	15	0	63	54	48	6	0	108	20	40	33	0	93	11	43	27	0	81	345
8:00	4	41	6	0	51	20	22	5	0	47	4	32	14	0	50	6	42	19	0	67	215
Total Volume	23	177	30	0	230	165	147	22	0	334	56	141	102	0	299	30	173	69	0	272	1135
% App Total	10.0%	77.0%	13.0%	0.0%		49.4%	44.0%	6.6%	0.0%		18.7%	47.2%	34.1%	0.0%		11.0%	63.6%	25.4%	0.0%		
PHF	.575	.702	.500	.000	.719	.764	.766	.786	.000	.773	.700	.839	.773	.000	.804	.682	.865	.639	.000	.840	.822

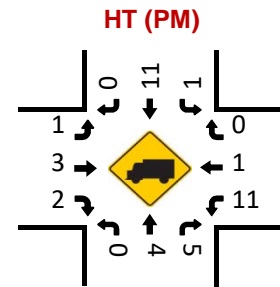
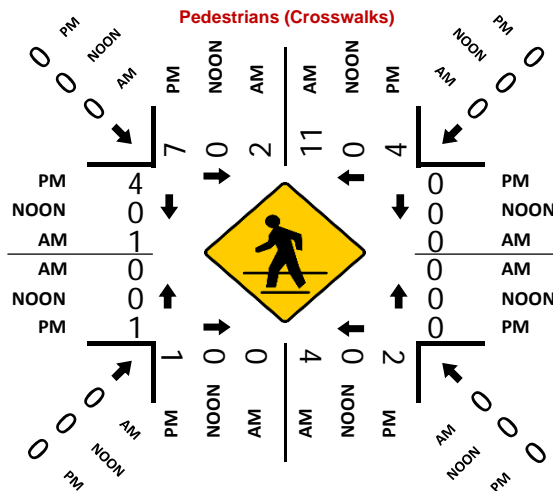
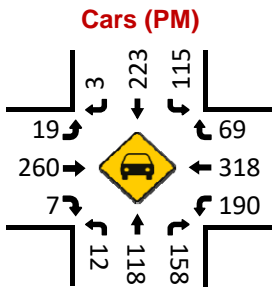
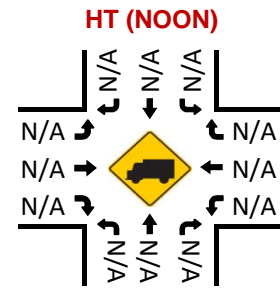
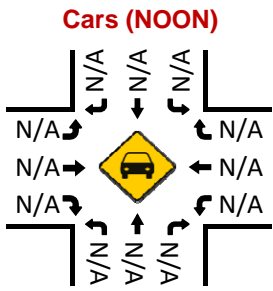
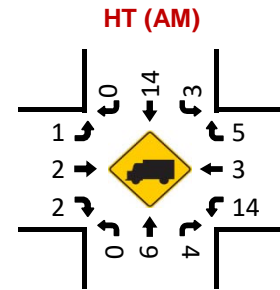
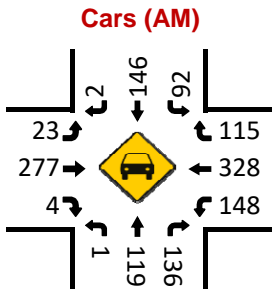
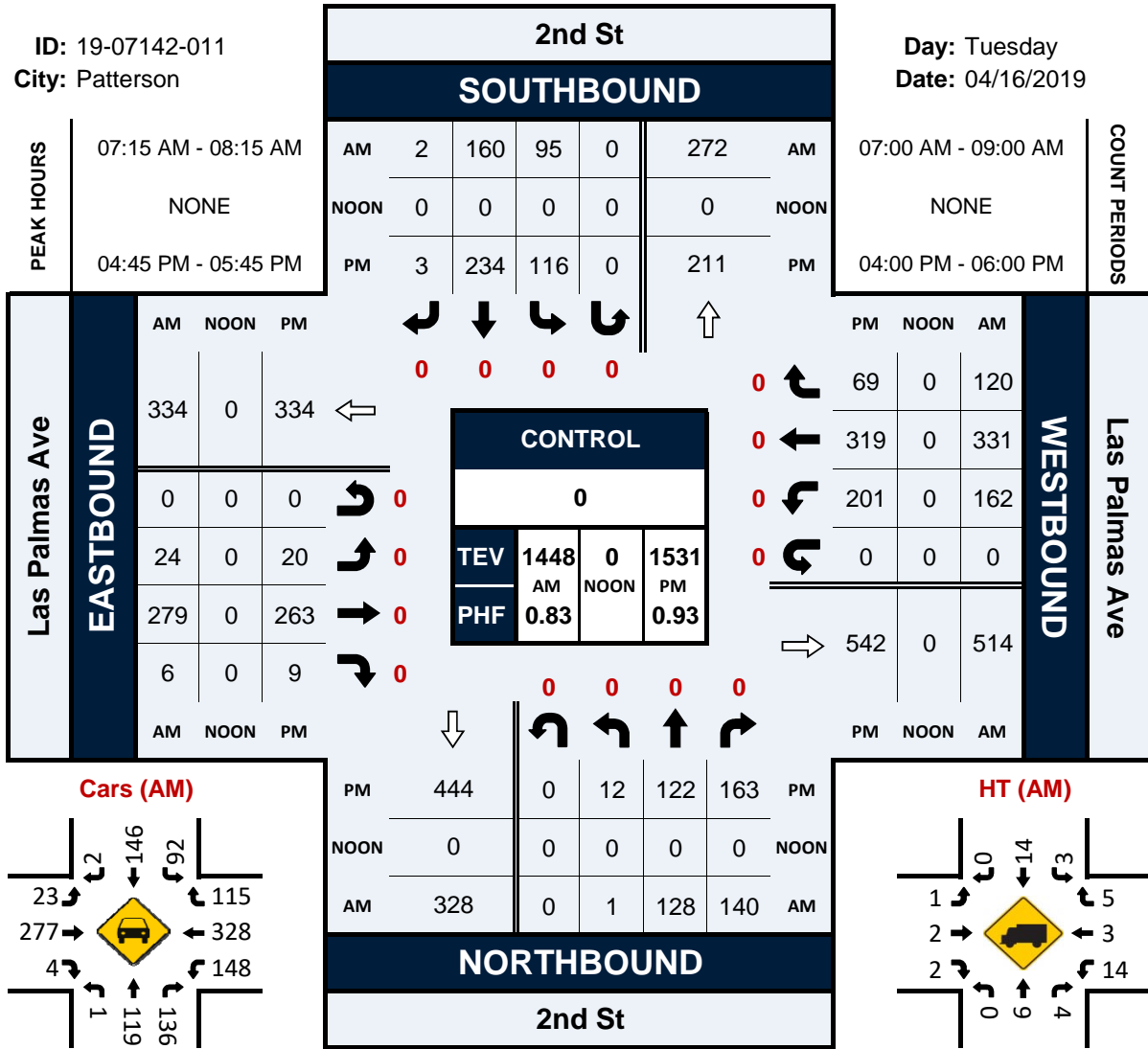
PM PEAK HOUR	SR-33 Southbound					Walnut Ave/M St Westbound					SR-33 Northbound					Walnut Ave/M St Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	9	75	4	0	88	13	16	3	0	32	5	56	11	0	72	3	15	16	0	34	226
16:30	14	63	1	0	78	18	21	1	0	40	9	38	18	0	65	6	19	17	0	42	225
16:45	17	77	4	0	98	26	22	5	0	53	8	47	11	0	66	3	28	15	0	46	263
17:00	17	76	4	0	97	17	24	3	0	44	6	48	22	0	76	0	25	9	0	34	251
Total Volume	57	291	13	0	361	74	83	12	0	169	28	189	62	0	279	12	87	57	0	156	965
% App Total	15.8%	80.6%	3.6%	0.0%		43.8%	49.1%	7.1%	0.0%		10.0%	67.7%	22.2%	0.0%		7.7%	55.8%	36.5%	0.0%		
PHF	.838	.945	.813	.000	.921	.712	.865	.600	.000	.797	.778	.844	.705	.000	.918	.500	.777	.838	.000	.848	.917

2nd St & Las Palmas Ave

Peak Hour Turning Movement Count

ID: 19-07142-011
City: Patterson

Day: Tuesday
Date: 04/16/2019



ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-012

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	SR-33 Southbound					Olive Ave Westbound					SR-33 Northbound					Olive Ave Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	7	26	0	0	33	0	3	8	0	11	3	32	0	0	35	7	10	8	0	25	104	0
7:15	9	31	0	0	40	2	0	14	0	16	7	49	0	0	56	5	10	2	0	17	129	0
7:30	17	63	2	0	82	4	11	15	0	30	2	28	2	0	32	6	13	11	0	30	174	0
7:45	11	52	2	0	65	0	6	22	0	28	6	57	1	0	64	2	11	7	0	20	177	0
Total	44	172	4	0	220	6	20	59	0	85	18	166	3	0	187	20	44	28	0	92	584	0
8:00	2	41	0	0	43	0	5	6	0	11	4	38	2	0	44	1	3	6	0	10	108	0
8:15	4	27	1	0	32	1	7	6	0	14	4	30	0	0	34	3	4	2	0	9	89	0
8:30	7	28	0	0	35	2	1	8	0	11	1	39	2	0	42	1	2	2	0	5	93	0
8:45	6	33	0	0	39	0	1	8	0	9	3	32	2	0	37	2	2	5	0	9	94	0
Total	19	129	1	0	149	3	14	28	0	45	12	139	6	0	157	7	11	15	0	33	384	0
16:00	12	68	0	0	80	1	7	10	0	18	7	42	0	0	49	1	4	2	0	7	154	0
16:15	11	73	2	0	86	3	5	11	0	19	7	48	1	0	56	1	6	7	0	14	175	0
16:30	13	77	4	0	94	0	10	9	0	19	12	31	1	0	44	1	5	3	0	9	166	0
16:45	8	88	4	0	100	1	4	4	0	9	10	46	0	0	56	0	4	5	0	9	174	0
Total	44	306	10	0	360	5	26	34	0	65	36	167	2	0	205	3	19	17	0	39	669	0
17:00	14	90	2	0	106	2	7	6	0	15	6	42	2	1	51	4	5	5	0	14	186	1
17:15	6	81	2	0	89	2	5	7	0	14	5	32	4	0	41	0	9	1	0	10	154	0
17:30	8	57	1	0	66	2	4	5	0	11	10	33	3	1	47	2	3	3	0	8	132	1
17:45	12	77	3	0	92	2	3	1	0	6	4	18	1	0	23	0	5	4	0	9	130	0
Total	40	305	8	0	353	8	19	19	0	46	25	125	10	2	162	6	22	13	0	41	602	2
Grand Total	147	912	23	0	1082	22	79	140	0	241	91	597	21	2	711	36	96	73	0	205	2239	2
Apprch %	13.6%	84.3%	2.1%	0.0%		9.1%	32.8%	58.1%	0.0%		12.8%	84.0%	3.0%	0.3%		17.6%	46.8%	35.6%	0.0%			
Total %	6.6%	40.7%	1.0%	0.0%	48.3%	1.0%	3.5%	6.3%	0.0%	10.8%	4.1%	26.7%	0.9%	0.1%	31.8%	1.6%	4.3%	3.3%	0.0%	9.2%	100.0%	

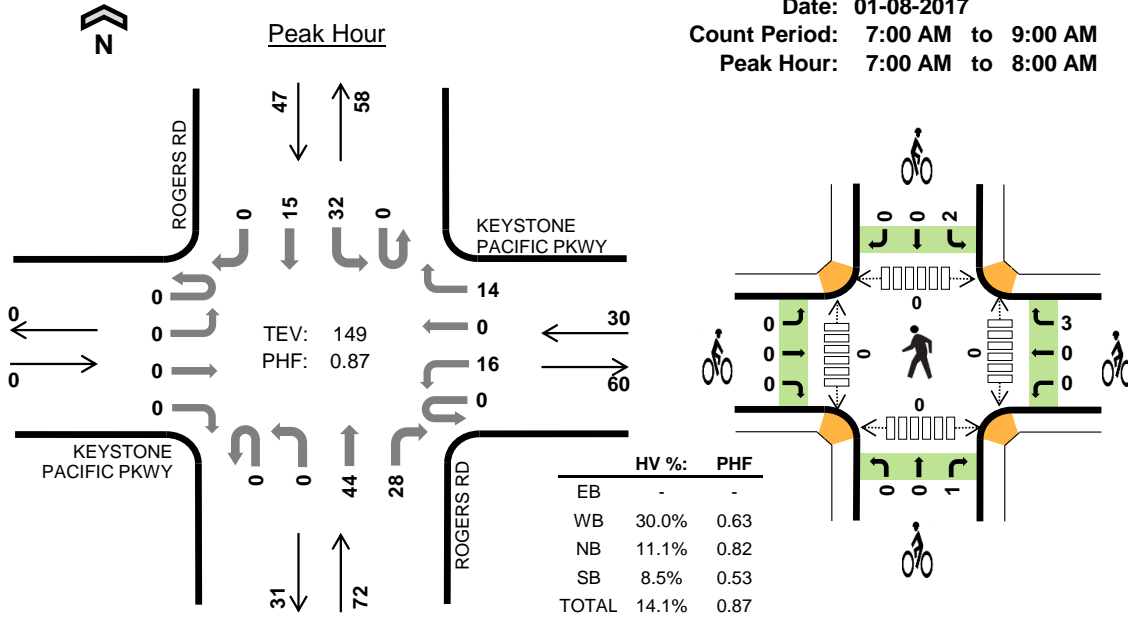
AM PEAK HOUR	SR-33 Southbound					Olive Ave Westbound					SR-33 Northbound					Olive Ave Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	9	31	0	0	40	2	0	14	0	16	7	49	0	0	56	5	10	2	0	17	129
7:30	17	63	2	0	82	4	11	15	0	30	2	28	2	0	32	6	13	11	0	30	174
7:45	11	52	2	0	65	0	6	22	0	28	6	57	1	0	64	2	11	7	0	20	177
8:00	2	41	0	0	43	0	5	6	0	11	4	38	2	0	44	1	3	6	0	10	108
Total Volume	39	187	4	0	230	6	22	57	0	85	19	172	5	0	196	14	37	26	0	77	588
% App Total	17.0%	81.3%	1.7%	0.0%		7.1%	25.9%	67.1%	0.0%		9.7%	87.8%	2.6%	0.0%		18.2%	48.1%	33.8%	0.0%		
PHF	.574	.742	.500	.000	.701	.375	.500	.648	.000	.708	.679	.754	.625	.000	.766	.583	.712	.591	.000	.642	.831

PM PEAK HOUR	SR-33 Southbound					Olive Ave Westbound					SR-33 Northbound					Olive Ave Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	11	73	2	0	86	3	5	11	0	19	7	48	1	0	56	1	6	7	0	14	175
16:30	13	77	4	0	94	0	10	9	0	19	12	31	1	0	44	1	5	3	0	9	166
16:45	8	88	4	0	100	1	4	4	0	9	10	46	0	0	56	0	4	5	0	9	174
17:00	14	90	2	0	106	2	7	6	0	15	6	42	2	1	51	4	5	5	0	14	186
Total Volume	46	328	12	0	386	6	26	30	0	62	35	167	4	1	207	6	20	20	0	46	701
% App Total	11.9%	85.0%	3.1%	0.0%		9.7%	41.9%	48.4%	0.0%		16.9%	80.7%	1.9%	0.5%		13.0%	43.5%	43.5%	0.0%		
PHF	.821	.911	.750	.000	.910	.500	.650	.682	.000	.816	.729	.870	.500	.250	.924	.375	.833	.714	.000	.821	.942

ROGERS RD KEYSTONE PACIFIC PKWY



Date: 01-08-2017
 Count Period: 7:00 AM to 9:00 AM
 Peak Hour: 7:00 AM to 8:00 AM



Two-Hour Count Summaries

Interval Start	KEYSTONE PACIFIC PKWY				KEYSTONE PACIFIC PKWY				ROGERS RD				ROGERS RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	1	0	3	0	0	12	6	0	8	2	0		
7:15 AM	0	0	0	0	0	6	0	6	0	0	10	8	0	5	2	0		
7:30 AM	0	0	0	0	0	5	0	2	0	0	15	7	0	6	2	0		
7:45 AM	0	0	0	0	0	4	0	3	0	0	7	7	0	13	9	0		
8:00 AM	0	0	0	0	0	4	0	4	0	0	9	4	0	9	1	0		
8:15 AM	0	0	0	0	0	3	0	2	0	0	3	5	0	5	8	0		
8:30 AM	0	0	0	0	0	4	0	3	0	0	9	5	1	5	6	0		
8:45 AM	0	0	0	0	0	1	0	5	0	0	13	2	0	8	6	0		
Count Total	0	0	0	0	0	28	0	28	0	0	78	44	1	59	36	0		
Peak Hour	All	0	0	0	0	0	16	0	14	0	0	44	28	0	32	15	0	
	HV	0	0	0	0	0	7	0	2	0	0	1	7	0	3	1	0	
	HV%	-	-	-	-	-	44%	-	14%	-	-	2%	25%	-	9%	7%	-	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	2	2	4	0	2	0	0	2	0	0	0	0	0
7:15 AM	0	3	2	1	6	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	3	0	5	0	0	0	2	2	0	0	0	0	0
7:45 AM	0	4	1	1	6	0	1	1	0	2	0	0	0	0	0
8:00 AM	0	4	2	1	7	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	2	4	1	7	0	4	0	1	5	0	0	0	0	0
8:30 AM	0	0	2	2	4	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	2	2	3	7	0	0	0	0	0	0	0	0	0	0
Count Total	0	17	18	11	46	0	7	1	3	11	0	0	0	0	0
Peak Hour	0	9	8	4	21	0	3	1	2	6	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	KEYSTONE PACIFIC PKWY				KEYSTONE PACIFIC PKWY				ROGERS RD				ROGERS RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	4	0
7:15 AM	0	0	0	0	0	2	0	1	0	0	0	2	0	0	1	0	6	0
7:30 AM	0	0	0	0	0	2	0	0	0	0	1	2	0	0	0	0	5	0
7:45 AM	0	0	0	0	0	3	0	1	0	0	0	1	0	1	0	0	6	21
8:00 AM	0	0	0	0	0	2	0	2	0	0	1	1	0	1	0	0	7	24
8:15 AM	0	0	0	0	0	2	0	0	0	0	0	4	0	1	0	0	7	25
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	4	24
8:45 AM	0	0	0	0	0	0	0	2	0	0	2	0	0	1	2	0	7	25
Count Total	0	0	0	0	0	11	0	6	0	0	5	13	1	6	4	0	46	0
Peak Hour	0	0	0	0	0	7	0	2	0	0	1	7	0	3	1	0	21	0

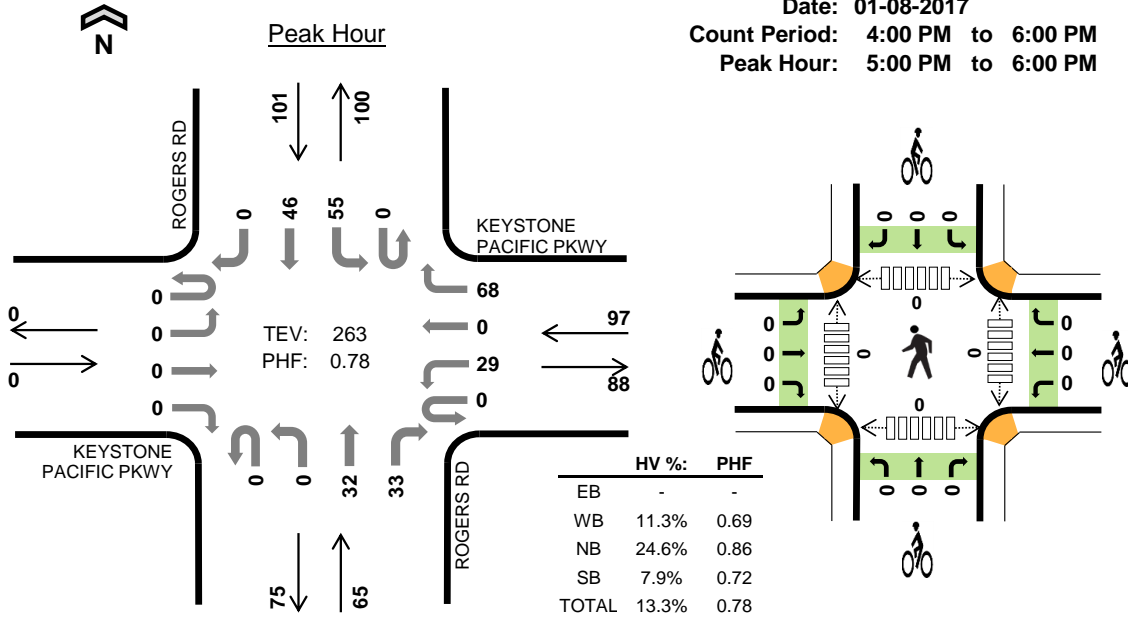
Two-Hour Count Summaries - Bikes														
Interval Start	KEYSTONE PACIFIC PKWY			KEYSTONE PACIFIC PKWY			ROGERS RD			ROGERS RD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0
7:45 AM	0	0	0	0	0	1	0	0	1	0	0	0	2	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	0	0	0	0	4	0	0	0	0	1	0	5	9
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	0	0	0	0	7	0	0	1	2	1	0	11	0
Peak Hour	0	0	0	0	0	3	0	0	1	2	0	0	6	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

ROGERS RD KEYSTONE PACIFIC PKWY



Date: 01-08-2017
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 5:00 PM to 6:00 PM



Two-Hour Count Summaries

Interval Start	KEYSTONE PACIFIC PKWY				KEYSTONE PACIFIC PKWY				ROGERS RD				ROGERS RD				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	0	0	0	4	0	9	0	0	10	4	0	6	13	0	46	0	
4:15 PM	0	0	0	0	0	5	0	5	0	0	11	4	0	1	8	0	34	0	
4:30 PM	0	0	0	0	0	11	0	15	0	0	4	8	0	3	10	0	51	0	
4:45 PM	0	0	0	0	0	14	0	24	0	0	14	4	0	7	9	0	72	203	
5:00 PM	0	0	0	0	0	16	0	7	0	0	8	7	0	6	6	0	50	207	
5:15 PM	0	0	0	0	0	3	0	2	0	0	8	11	0	13	11	0	48	221	
5:30 PM	0	0	0	0	0	5	0	30	0	0	8	8	0	13	17	0	81	251	
5:45 PM	0	0	0	0	0	5	0	29	0	0	8	7	0	23	12	0	84	263	
Count Total	0	0	0	0	0	63	0	121	0	0	71	53	0	72	86	0	466	0	
Peak Hour	All	0	0	0	0	0	29	0	68	0	0	32	33	0	55	46	0	263	0
	HV	0	0	0	0	0	8	0	3	0	0	7	9	0	2	6	0	35	0
	HV%	-	-	-	-	-	28%	-	4%	-	-	22%	27%	-	4%	13%	-	13%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	2	5	2	9	0	0	0	1	1	0	0	0	0	0
4:15 PM	0	2	5	1	8	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	2	6	4	12	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	4	1	3	8	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	3	3	1	7	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	2	4	2	8	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	4	4	8	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	6	5	1	12	0	0	0	0	0	0	0	0	0	0
Count Total	0	21	33	18	72	0	0	0	1	1	0	0	0	0	0
Peak Hour	0	11	16	8	35	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	KEYSTONE PACIFIC PKWY				KEYSTONE PACIFIC PKWY				ROGERS RD				ROGERS RD				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	0	0	0	1	0	1	0	0	4	1	0	1	1	0	0	9	0
4:15 PM	0	0	0	0	0	1	0	1	0	0	3	2	0	0	1	0	0	8	0
4:30 PM	0	0	0	0	0	2	0	0	0	0	0	6	0	0	4	0	0	12	0
4:45 PM	0	0	0	0	0	3	0	1	0	0	0	1	0	1	2	0	0	8	37
5:00 PM	0	0	0	0	0	3	0	0	0	0	2	1	0	0	1	0	0	7	35
5:15 PM	0	0	0	0	0	2	0	0	0	0	2	2	0	0	2	0	0	8	35
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	3	0	1	3	0	0	8	31
5:45 PM	0	0	0	0	0	3	0	3	0	0	2	3	0	1	0	0	0	12	35
Count Total	0	0	0	0	0	15	0	6	0	0	14	19	0	4	14	0	0	72	0
Peak Hour	0	0	0	0	0	8	0	3	0	0	7	9	0	2	6	0	0	35	0

Two-Hour Count Summaries - Bikes																		
Interval Start	KEYSTONE PACIFIC PKWY				KEYSTONE PACIFIC PKWY				ROGERS RD				ROGERS RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
4:00 PM	0	0	0		0	0	0		0	0	0		1	0	0		1	0
4:15 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
4:30 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
4:45 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	1
5:00 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:15 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:30 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:45 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
Count Total	0	0	0		0	0	0		0	0	0		1	0	0		1	0
Peak Hour	0	0	0		0	0	0		0	0	0		0	0	0		0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-015

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	Rogers Rd Southbound					Zacharias Rd Westbound					Rogers Rd Northbound					Zacharias Rd Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	8	26	0	0	34	1	0	3	0	4	0	11	1	0	12	0	0	0	0	0	50	0
7:15	4	13	0	0	17	2	0	1	0	3	0	14	2	0	16	0	0	0	0	0	36	0
7:30	3	8	1	0	12	2	0	1	0	3	0	11	1	0	12	1	0	1	0	2	29	0
7:45	1	21	0	0	22	5	0	2	0	7	0	10	3	0	13	0	0	0	0	0	42	0
Total	16	68	1	0	85	10	0	7	0	17	0	46	7	0	53	1	0	1	0	2	157	0
8:00	2	25	0	0	27	2	0	1	0	3	0	11	2	0	13	0	0	0	0	0	43	0
8:15	4	11	0	0	15	0	0	2	0	2	0	10	2	0	12	1	0	0	0	1	30	0
8:30	1	11	0	0	12	1	0	3	0	4	0	6	1	0	7	0	0	0	0	0	23	0
8:45	4	25	0	0	29	4	0	3	0	7	0	13	1	0	14	0	0	0	0	0	50	0
Total	11	72	0	0	83	7	0	9	0	16	0	40	6	0	46	1	0	0	0	1	146	0
16:00	5	17	0	0	22	2	0	5	0	7	0	19	2	0	21	0	1	0	0	1	51	0
16:15	3	9	0	0	12	2	0	4	0	6	0	43	2	0	45	0	0	0	0	0	63	0
16:30	5	8	0	0	13	1	0	6	0	7	0	30	2	1	33	0	0	0	0	0	53	1
16:45	3	13	0	0	16	3	0	1	0	4	0	26	4	0	30	0	0	0	0	0	50	0
Total	16	47	0	0	63	8	0	16	0	24	0	118	10	1	129	0	1	0	0	1	217	1
17:00	7	11	1	0	19	2	0	4	0	6	0	9	6	0	15	0	0	0	0	0	40	0
17:15	3	17	0	0	20	1	0	1	0	2	0	12	5	0	17	0	0	0	0	0	39	0
17:30	4	21	1	0	26	0	0	3	0	3	0	25	0	0	25	0	0	0	0	0	54	0
17:45	7	32	0	0	39	0	0	6	0	6	0	27	3	0	30	0	0	0	0	0	75	0
Total	21	81	2	0	104	3	0	14	0	17	0	73	14	0	87	0	0	0	0	0	208	0
Grand Total	64	268	3	0	335	28	0	46	0	74	0	277	37	1	315	2	1	1	0	4	728	1
Apprch %	19.1%	80.0%	0.9%	0.0%		37.8%	0.0%	62.2%	0.0%		0.0%	87.9%	11.7%	0.3%		50.0%	25.0%	25.0%	0.0%			
Total %	8.8%	36.8%	0.4%	0.0%	46.0%	3.8%	0.0%	6.3%	0.0%	10.2%	0.0%	38.0%	5.1%	0.1%	43.3%	0.3%	0.1%	0.1%	0.0%	0.5%	100.0%	

AM PEAK HOUR	Rogers Rd Southbound					Zacharias Rd Westbound					Rogers Rd Northbound					Zacharias Rd Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:00 to 08:00																						
Peak Hour For Entire Intersection Begins at 07:00																						
7:00	8	26	0	0	34	1	0	3	0	4	0	11	1	0	12	0	0	0	0	0	50	
7:15	4	13	0	0	17	2	0	1	0	3	0	14	2	0	16	0	0	0	0	0	36	
7:30	3	8	1	0	12	2	0	1	0	3	0	11	1	0	12	1	0	1	0	2	29	
7:45	1	21	0	0	22	5	0	2	0	7	0	10	3	0	13	0	0	0	0	0	42	
Total Volume	16	68	1	0	85	10	0	7	0	17	0	46	7	0	53	1	0	1	0	2	157	
% App Total	18.8%	80.0%	1.2%	0.0%		58.8%	0.0%	41.2%	0.0%		0.0%	86.8%	13.2%	0.0%		50.0%	0.0%	50.0%	0.0%			
PHF	.500	.654	.250	.000	.625	.500	.000	.583	.000	.607	.000	.821	.583	.000	.828	.250	.000	.250	.000	.250	.785	

PM PEAK HOUR	Rogers Rd Southbound					Zacharias Rd Westbound					Rogers Rd Northbound					Zacharias Rd Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 16:00 to 17:00																						
Peak Hour For Entire Intersection Begins at 16:00																						
16:00	5	17	0	0	22	2	0	5	0	7	0	19	2	0	21	0	1	0	0	1	51	
16:15	3	9	0	0	12	2	0	4	0	6	0	43	2	0	45	0	0	0	0	0	63	
16:30	5	8	0	0	13	1	0	6	0	7	0	30	2	1	33	0	0	0	0	0	53	
16:45	3	13	0	0	16	3	0	1	0	4	0	26	4	0	30	0	0	0	0	0	50	
Total Volume	16	47	0	0	63	8	0	16	0	24	0	118	10	1	129	0	1	0	0	1	217	
% App Total	25.4%	74.6%	0.0%	0.0%		33.3%	0.0%	66.7%	0.0%		0.0%	91.5%	7.8%	0.8%		0.0%	100.0%	0.0%	0.0%			
PHF	.800	.691	.000	.000	.716	.667	.000	.667	.000	.857	.000	.686	.625	.250	.717	.000	.250	.000	.000	.250	.861	

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-016

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	Baldwin Rd Southbound					Zacharias Rd Westbound					Baldwin Rd Northbound					Zacharias Rd Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	7	0	0	7	4	2	1	0	7	1	16	2	0	19	0	4	6	0	10	43	0
7:15	1	9	0	0	10	1	4	0	0	5	0	24	6	0	30	0	4	1	0	5	50	0
7:30	0	13	0	0	13	9	3	2	0	14	0	24	16	0	40	0	2	2	0	4	71	0
7:45	1	14	0	0	15	13	7	0	0	20	0	23	12	0	35	0	3	0	0	3	73	0
Total	2	43	0	0	45	27	16	3	0	46	1	87	36	0	124	0	13	9	0	22	237	0
8:00	0	5	0	0	5	8	4	0	0	12	1	12	0	0	13	0	6	0	0	6	36	0
8:15	0	8	1	0	9	2	1	0	0	3	0	10	2	0	12	0	6	0	0	6	30	0
8:30	0	8	0	0	8	4	5	1	0	10	0	6	3	0	9	0	1	2	0	3	30	0
8:45	0	2	1	0	3	6	5	0	0	11	1	8	5	0	14	0	5	0	0	5	33	0
Total	0	23	2	0	25	20	15	1	0	36	2	36	10	0	48	0	18	2	0	20	129	0
16:00	0	12	1	0	13	4	1	1	0	6	1	12	5	0	18	0	7	2	0	9	46	0
16:15	1	13	1	0	15	1	4	0	0	5	2	13	20	1	36	0	3	0	0	3	59	1
16:30	0	13	0	0	13	2	4	0	0	6	2	11	9	0	22	0	4	2	0	6	47	0
16:45	1	7	0	0	8	1	5	0	0	6	2	8	8	0	18	0	4	1	0	5	37	0
Total	2	45	2	0	49	8	14	1	0	23	7	44	42	1	94	0	18	5	0	23	189	1
17:00	1	20	0	0	21	4	4	1	0	9	1	14	3	0	18	0	14	1	0	15	63	0
17:15	0	23	0	0	23	1	3	0	0	4	0	10	3	0	13	0	7	3	0	10	50	0
17:30	1	22	0	0	23	7	2	0	0	9	1	16	4	0	21	0	3	2	0	5	58	0
17:45	0	18	0	0	18	5	4	0	0	9	3	8	4	0	15	0	11	2	0	13	55	0
Total	2	83	0	0	85	17	13	1	0	31	5	48	14	0	67	0	35	8	0	43	226	0
Grand Total	6	194	4	0	204	72	58	6	0	136	15	215	102	1	333	0	84	24	0	108	781	1
Apprch %	2.9%	95.1%	2.0%	0.0%		52.9%	42.6%	4.4%	0.0%		4.5%	64.6%	30.6%	0.3%		0.0%	77.8%	22.2%	0.0%			
Total %	0.8%	24.8%	0.5%	0.0%	26.1%	9.2%	7.4%	0.8%	0.0%	17.4%	1.9%	27.5%	13.1%	0.1%	42.6%	0.0%	10.8%	3.1%	0.0%	13.8%	100.0%	

AM PEAK HOUR	Baldwin Rd Southbound					Zacharias Rd Westbound					Baldwin Rd Northbound					Zacharias Rd Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	7	0	0	7	4	2	1	0	7	1	16	2	0	19	0	4	6	0	10	43
7:15	1	9	0	0	10	1	4	0	0	5	0	24	6	0	30	0	4	1	0	5	50
7:30	0	13	0	0	13	9	3	2	0	14	0	24	16	0	40	0	2	2	0	4	71
7:45	1	14	0	0	15	13	7	0	0	20	0	23	12	0	35	0	3	0	0	3	73
Total Volume	2	43	0	0	45	27	16	3	0	46	1	87	36	0	124	0	13	9	0	22	237
% App Total	4.4%	95.6%	0.0%	0.0%		58.7%	34.8%	6.5%	0.0%		0.8%	70.2%	29.0%	0.0%		0.0%	59.1%	40.9%	0.0%		
PHF	.500	.768	.000	.000	.750	.519	.571	.375	.000	.575	.250	.906	.563	.000	.775	.000	.813	.375	.000	.550	.812

PM PEAK HOUR	Baldwin Rd Southbound					Zacharias Rd Westbound					Baldwin Rd Northbound					Zacharias Rd Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	20	0	0	21	4	4	1	0	9	1	14	3	0	18	0	14	1	0	15	63
17:15	0	23	0	0	23	1	3	0	0	4	0	10	3	0	13	0	7	3	0	10	50
17:30	1	22	0	0	23	7	2	0	0	9	1	16	4	0	21	0	3	2	0	5	58
17:45	0	18	0	0	18	5	4	0	0	9	3	8	4	0	15	0	11	2	0	13	55
Total Volume	2	83	0	0	85	17	13	1	0	31	5	48	14	0	67	0	35	8	0	43	226
% App Total	2.4%	97.6%	0.0%	0.0%		54.8%	41.9%	3.2%	0.0%		7.5%	71.6%	20.9%	0.0%		0.0%	81.4%	18.6%	0.0%		
PHF	.500	.902	.000	.000	.924	.607	.813	.250	.000	.861	.417	.750	.875	.000	.798	.000	.625	.667	.000	.717	.897

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-017

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	SR-33 Southbound					Zacharias Rd Westbound					SR-33 Northbound					Zacharias Rd Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	45	1	1	47	0	0	0	0	0	5	60	0	0	65	0	0	4	0	4	116	1
7:15	0	53	1	0	54	0	0	0	0	0	5	91	0	0	96	0	0	12	0	12	162	0
7:30	0	84	0	0	84	0	0	0	0	0	13	62	0	0	75	0	0	17	0	17	176	0
7:45	0	70	2	0	72	0	0	0	0	0	18	78	0	0	96	0	0	16	0	16	184	0
Total	0	252	4	1	257	0	0	0	0	0	41	291	0	0	332	0	0	49	0	49	638	1
8:00	0	46	2	0	48	0	0	0	0	0	9	49	0	0	58	0	0	7	0	7	113	0
8:15	0	28	1	0	29	0	0	0	0	0	3	49	0	0	52	1	0	9	0	10	91	0
8:30	0	43	2	0	45	0	0	0	0	0	6	55	0	0	61	2	0	2	0	4	110	0
8:45	0	47	2	0	49	0	0	0	0	0	9	42	0	0	51	2	0	8	0	10	110	0
Total	0	164	7	0	171	0	0	0	0	0	27	195	0	0	222	5	0	26	0	31	424	0
16:00	0	90	1	0	91	0	0	0	0	0	4	71	0	0	75	0	0	14	0	14	180	0
16:15	0	106	1	0	107	0	0	0	0	0	5	86	0	0	91	1	0	22	0	23	221	0
16:30	0	124	0	0	124	0	0	0	0	0	5	54	0	0	59	1	0	8	0	9	192	0
16:45	0	125	3	0	128	0	0	0	0	0	4	54	0	0	58	0	0	15	0	15	201	0
Total	0	445	5	0	450	0	0	0	0	0	18	265	0	0	283	2	0	59	0	61	794	0
17:00	0	120	2	0	122	0	0	0	0	0	6	61	0	0	67	1	0	17	0	18	207	0
17:15	0	127	1	0	128	0	0	0	0	0	4	54	0	0	58	2	0	10	0	12	198	0
17:30	0	90	1	0	91	0	0	0	0	0	9	56	0	0	65	0	0	6	0	6	162	0
17:45	0	119	2	0	121	0	0	0	0	0	6	30	0	0	36	3	0	12	0	15	172	0
Total	0	456	6	0	462	0	0	0	0	0	25	201	0	0	226	6	0	45	0	51	739	0
Grand Total	0	1317	22	1	1340	0	0	0	0	0	111	952	0	0	1063	13	0	179	0	192	2595	1
Apprch %	0.0%	98.3%	1.6%	0.1%		0.0%	0.0%	0.0%	0.0%		10.4%	89.6%	0.0%	0.0%		6.8%	0.0%	93.2%	0.0%			
Total %	0.0%	50.8%	0.8%	0.0%	51.6%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	36.7%	0.0%	0.0%	41.0%	0.5%	0.0%	6.9%	0.0%	7.4%	100.0%	

AM PEAK HOUR	SR-33 Southbound					Zacharias Rd Westbound					SR-33 Northbound					Zacharias Rd Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	45	1	1	47	0	0	0	0	0	5	60	0	0	65	0	0	4	0	4	116
7:15	0	53	1	0	54	0	0	0	0	0	5	91	0	0	96	0	0	12	0	12	162
7:30	0	84	0	0	84	0	0	0	0	0	13	62	0	0	75	0	0	17	0	17	176
7:45	0	70	2	0	72	0	0	0	0	0	18	78	0	0	96	0	0	16	0	16	184
Total Volume	0	252	4	1	257	0	0	0	0	0	41	291	0	0	332	0	0	49	0	49	638
% App Total	0.0%	98.1%	1.6%	0.4%		0.0%	0.0%	0.0%	0.0%		12.3%	87.7%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.750	.500	.250	.765	.000	.000	.000	.000	.000	.569	.799	.000	.000	.865	.000	.000	.721	.000	.721	.867

PM PEAK HOUR	SR-33 Southbound					Zacharias Rd Westbound					SR-33 Northbound					Zacharias Rd Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	106	1	0	107	0	0	0	0	0	5	86	0	0	91	1	0	22	0	23	221
16:30	0	124	0	0	124	0	0	0	0	0	5	54	0	0	59	1	0	8	0	9	192
16:45	0	125	3	0	128	0	0	0	0	0	4	54	0	0	58	0	0	15	0	15	201
17:00	0	120	2	0	122	0	0	0	0	0	6	61	0	0	67	1	0	17	0	18	207
Total Volume	0	475	6	0	481	0	0	0	0	0	20	255	0	0	275	3	0	62	0	65	821
% App Total	0.0%	98.8%	1.2%	0.0%		0.0%	0.0%	0.0%	0.0%		7.3%	92.7%	0.0%	0.0%		4.6%	0.0%	95.4%	0.0%		
PHF	.000	.950	.500	.000	.939	.000	.000	.000	.000	.000	.833	.741	.000	.000	.755	.750	.000	.705	.000	.707	.929

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-018

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	SR-33 Southbound					Ward Ave Westbound					SR-33 Northbound					Ward Ave Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	33	15	0	48	0	0	0	0	0	0	47	0	0	47	24	0	0	0	24	119	0
7:15	0	43	22	0	65	0	0	0	0	0	0	69	0	0	69	21	0	0	0	21	155	0
7:30	0	78	27	0	105	0	0	0	0	0	0	47	0	0	47	25	0	1	0	26	178	0
7:45	0	66	26	0	92	0	0	0	0	0	0	79	0	0	79	17	0	3	0	20	191	0
Total	0	220	90	0	310	0	0	0	0	0	0	242	0	0	242	87	0	4	0	91	643	0
8:00	0	39	18	0	57	0	0	0	0	0	3	43	0	0	46	14	0	3	0	17	120	0
8:15	0	29	6	0	35	0	0	0	0	0	1	37	0	0	38	15	0	1	0	16	89	0
8:30	0	35	8	0	43	0	0	0	0	0	0	47	0	0	47	13	0	1	0	14	104	0
8:45	0	33	19	0	52	0	0	0	0	0	0	39	0	0	39	7	0	1	0	8	99	0
Total	0	136	51	0	187	0	0	0	0	0	4	166	0	0	170	49	0	6	0	55	412	0
16:00	0	78	26	0	104	0	0	0	0	0	0	52	0	0	52	24	0	1	0	25	181	0
16:15	0	89	26	0	115	0	0	0	0	0	0	61	0	0	61	34	0	0	0	34	210	0
16:30	0	88	38	0	126	0	0	0	0	0	0	42	0	0	42	16	0	0	0	16	184	0
16:45	0	101	31	0	132	0	0	0	0	0	2	46	0	0	48	17	0	1	0	18	198	0
Total	0	356	121	0	477	0	0	0	0	0	2	201	0	0	203	91	0	2	0	93	773	0
17:00	0	96	37	0	133	0	0	0	0	0	2	52	0	0	54	25	0	4	0	29	216	0
17:15	0	95	44	0	139	0	0	0	0	0	0	39	0	0	39	17	0	1	0	18	196	0
17:30	0	63	32	0	95	0	0	0	0	0	0	38	0	0	38	25	0	2	0	27	160	0
17:45	0	92	36	0	128	0	0	0	0	0	0	21	0	0	21	11	0	0	0	11	160	0
Total	0	346	149	0	495	0	0	0	0	0	2	150	0	0	152	78	0	7	0	85	732	0
Grand Total	0	1058	411	0	1469	0	0	0	0	0	8	759	0	0	767	305	0	19	0	324	2560	0
Apprch %	0.0%	72.0%	28.0%	0.0%		0.0%	0.0%	0.0%	0.0%		1.0%	99.0%	0.0%	0.0%		94.1%	0.0%	5.9%	0.0%			
Total %	0.0%	41.3%	16.1%	0.0%	57.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	29.6%	0.0%	0.0%	30.0%	11.9%	0.0%	0.7%	0.0%	12.7%	100.0%	

AM PEAK HOUR	SR-33 Southbound					Ward Ave Westbound					SR-33 Northbound					Ward Ave Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:15 to 08:15																						
Peak Hour For Entire Intersection Begins at 07:15																						
7:15	0	43	22	0	65	0	0	0	0	0	0	69	0	0	69	21	0	0	0	21	155	
7:30	0	78	27	0	105	0	0	0	0	0	0	47	0	0	47	25	0	1	0	26	178	
7:45	0	66	26	0	92	0	0	0	0	0	0	79	0	0	79	17	0	3	0	20	191	
8:00	0	39	18	0	57	0	0	0	0	0	3	43	0	0	46	14	0	3	0	17	120	
Total Volume	0	226	93	0	319	0	0	0	0	0	3	238	0	0	241	77	0	7	0	84	644	
% App Total	0.0%	70.8%	29.2%	0.0%		0.0%	0.0%	0.0%	0.0%		1.2%	98.8%	0.0%	0.0%		91.7%	0.0%	8.3%	0.0%			
PHF	.000	.724	.861	.000	.760	.000	.000	.000	.000	.000	.250	.753	.000	.000	.763	.770	.000	.583	.000	.808	.843	

PM PEAK HOUR	SR-33 Southbound					Ward Ave Westbound					SR-33 Northbound					Ward Ave Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 16:15 to 17:15																						
Peak Hour For Entire Intersection Begins at 16:15																						
16:15	0	89	26	0	115	0	0	0	0	0	0	61	0	0	61	34	0	0	0	34	210	
16:30	0	88	38	0	126	0	0	0	0	0	0	42	0	0	42	16	0	0	0	16	184	
16:45	0	101	31	0	132	0	0	0	0	0	2	46	0	0	48	17	0	1	0	18	198	
17:00	0	96	37	0	133	0	0	0	0	0	2	52	0	0	54	25	0	4	0	29	216	
Total Volume	0	374	132	0	506	0	0	0	0	0	4	201	0	0	205	92	0	5	0	97	808	
% App Total	0.0%	73.9%	26.1%	0.0%		0.0%	0.0%	0.0%	0.0%		2.0%	98.0%	0.0%	0.0%		94.8%	0.0%	5.2%	0.0%			
PHF	.000	.926	.868	.000	.951	.000	.000	.000	.000	.000	.500	.824	.000	.000	.840	.676	.000	.313	.000	.713	.935	

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-019

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	SR-33 Southbound					Eucalyptus Ave Westbound					SR-33 Northbound					Eucalyptus Ave Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	2	46	0	0	48	2	0	4	0	6	0	62	2	0	64	0	0	0	0	0	118	0
7:15	1	64	0	0	65	1	0	5	0	6	0	92	4	0	96	0	0	0	0	0	167	0
7:30	3	93	0	0	96	9	0	5	0	14	0	69	2	0	71	0	0	0	0	0	181	0
7:45	1	86	0	0	87	6	0	7	0	13	0	90	6	0	96	0	0	0	0	0	196	0
Total	7	289	0	0	296	18	0	21	0	39	0	313	14	0	327	0	0	0	0	0	662	0
8:00	5	50	0	0	55	6	0	8	0	14	0	52	3	0	55	0	0	0	0	0	124	0
8:15	1	35	0	0	36	0	0	3	0	3	0	47	0	0	47	0	0	0	0	0	86	0
8:30	2	42	0	0	44	0	0	3	0	3	0	57	4	0	61	0	0	0	0	0	108	0
8:45	4	52	0	0	56	1	0	4	0	5	0	47	3	0	50	0	0	0	0	0	111	0
Total	12	179	0	0	191	7	0	18	0	25	0	203	10	0	213	0	0	0	0	0	429	0
16:00	9	99	0	0	108	4	0	0	0	4	0	73	3	0	76	0	0	0	0	0	188	0
16:15	14	112	0	0	126	2	0	2	0	4	0	87	5	0	92	0	0	0	0	0	222	0
16:30	10	124	0	0	134	4	0	3	0	7	0	56	4	0	60	0	0	0	0	0	201	0
16:45	10	128	0	0	138	2	0	1	0	3	0	58	3	0	61	0	0	0	0	0	202	0
Total	43	463	0	0	506	12	0	6	0	18	0	274	15	0	289	0	0	0	0	0	813	0
17:00	8	126	0	0	134	4	0	2	0	6	0	65	7	0	72	0	0	0	0	0	212	0
17:15	8	130	0	0	138	8	0	2	0	10	0	56	4	0	60	0	0	0	0	0	208	0
17:30	5	94	0	0	99	3	0	3	0	6	0	60	3	0	63	0	0	0	0	0	168	0
17:45	5	124	0	0	129	3	0	5	0	8	0	31	4	0	35	0	0	0	0	0	172	0
Total	26	474	0	0	500	18	0	12	0	30	0	212	18	0	230	0	0	0	0	0	760	0
Grand Total	88	1405	0	0	1493	55	0	57	0	112	0	1002	57	0	1059	0	0	0	0	0	2664	0
Apprch %	5.9%	94.1%	0.0%	0.0%		49.1%	0.0%	50.9%	0.0%		0.0%	94.6%	5.4%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	3.3%	52.7%	0.0%	0.0%	56.0%	2.1%	0.0%	2.1%	0.0%	4.2%	0.0%	37.6%	2.1%	0.0%	39.8%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	SR-33 Southbound					Eucalyptus Ave Westbound					SR-33 Northbound					Eucalyptus Ave Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	1	64	0	0	65	1	0	5	0	6	0	92	4	0	96	0	0	0	0	0	167
7:30	3	93	0	0	96	9	0	5	0	14	0	69	2	0	71	0	0	0	0	0	181
7:45	1	86	0	0	87	6	0	7	0	13	0	90	6	0	96	0	0	0	0	0	196
8:00	5	50	0	0	55	6	0	8	0	14	0	52	3	0	55	0	0	0	0	0	124
Total Volume	10	293	0	0	303	22	0	25	0	47	0	303	15	0	318	0	0	0	0	0	668
% App Total	3.3%	96.7%	0.0%	0.0%		46.8%	0.0%	53.2%	0.0%		0.0%	95.3%	4.7%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.500	.788	.000	.000	.789	.611	.000	.781	.000	.839	.000	.823	.625	.000	.828	.000	.000	.000	.000	.000	.852

PM PEAK HOUR	SR-33 Southbound					Eucalyptus Ave Westbound					SR-33 Northbound					Eucalyptus Ave Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	14	112	0	0	126	2	0	2	0	4	0	87	5	0	92	0	0	0	0	0	222
16:30	10	124	0	0	134	4	0	3	0	7	0	56	4	0	60	0	0	0	0	0	201
16:45	10	128	0	0	138	2	0	1	0	3	0	58	3	0	61	0	0	0	0	0	202
17:00	8	126	0	0	134	4	0	2	0	6	0	65	7	0	72	0	0	0	0	0	212
Total Volume	42	490	0	0	532	12	0	8	0	20	0	266	19	0	285	0	0	0	0	0	837
% App Total	7.9%	92.1%	0.0%	0.0%		60.0%	0.0%	40.0%	0.0%		0.0%	93.3%	6.7%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.750	.957	.000	.000	.964	.750	.000	.667	.000	.714	.000	.764	.679	.000	.774	.000	.000	.000	.000	.000	.943

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-020

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	SR-33 Southbound					Baldwin Rd Westbound					SR-33 Northbound					Baldwin Rd Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	42	7	0	49	0	0	0	0	0	1	75	0	0	76	18	0	0	0	18	143	0
7:15	0	52	9	0	61	0	0	0	0	0	0	90	0	0	90	16	0	1	0	17	168	0
7:30	0	75	14	0	89	0	0	0	0	0	0	74	0	0	74	30	0	1	0	31	194	0
7:45	0	63	12	0	75	0	0	0	0	0	0	71	0	0	71	23	0	0	0	23	169	0
Total	0	232	42	0	274	0	0	0	0	0	1	310	0	0	311	87	0	2	0	89	674	0
8:00	0	42	6	0	48	0	0	0	0	0	0	56	0	0	56	17	0	0	0	17	121	0
8:15	0	26	9	0	35	0	0	0	0	0	1	46	0	0	47	7	0	0	0	7	89	0
8:30	0	39	5	0	44	0	0	0	0	0	1	56	0	0	57	9	0	0	0	9	110	0
8:45	0	39	4	0	43	0	0	0	0	0	0	37	0	0	37	7	0	0	0	7	87	0
Total	0	146	24	0	170	0	0	0	0	0	2	195	0	0	197	40	0	0	0	40	407	0
16:00	0	94	15	0	109	0	0	0	0	0	2	55	0	0	57	12	0	0	0	12	178	0
16:15	0	108	12	0	120	0	0	0	0	0	0	80	0	0	80	12	0	0	0	12	212	0
16:30	0	120	15	0	135	0	0	0	0	0	0	49	0	0	49	11	0	2	0	13	197	0
16:45	0	121	6	0	127	0	0	0	0	0	0	56	0	0	56	9	0	1	0	10	193	0
Total	0	443	48	0	491	0	0	0	0	0	2	240	0	0	242	44	0	3	0	47	780	0
17:00	0	131	21	0	152	0	0	0	0	0	0	58	0	0	58	11	0	1	0	12	222	0
17:15	0	121	21	0	142	0	0	0	0	0	1	53	0	0	54	10	0	0	0	10	206	0
17:30	0	94	21	0	115	0	0	0	0	0	0	48	0	0	48	15	0	0	0	15	178	0
17:45	0	117	18	0	135	0	0	0	0	0	1	32	0	0	33	11	0	0	0	11	179	0
Total	0	463	81	0	544	0	0	0	0	0	2	191	0	0	193	47	0	1	0	48	785	0
Grand Total	0	1284	195	0	1479	0	0	0	0	0	7	936	0	0	943	218	0	6	0	224	2646	0
Apprch %	0.0%	86.8%	13.2%	0.0%		0.0%	0.0%	0.0%	0.0%		0.7%	99.3%	0.0%	0.0%		97.3%	0.0%	2.7%	0.0%			
Total %	0.0%	48.5%	7.4%	0.0%	55.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	35.4%	0.0%	0.0%	35.6%	8.2%	0.0%	0.2%	0.0%	8.5%	100.0%	

AM PEAK HOUR	SR-33 Southbound					Baldwin Rd Westbound					SR-33 Northbound					Baldwin Rd Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:00 to 08:00																						
Peak Hour For Entire Intersection Begins at 07:00																						
7:00	0	42	7	0	49	0	0	0	0	0	1	75	0	0	76	18	0	0	0	18	143	0
7:15	0	52	9	0	61	0	0	0	0	0	0	90	0	0	90	16	0	1	0	17	168	0
7:30	0	75	14	0	89	0	0	0	0	0	0	74	0	0	74	30	0	1	0	31	194	0
7:45	0	63	12	0	75	0	0	0	0	0	0	71	0	0	71	23	0	0	0	23	169	0
Total Volume	0	232	42	0	274	0	0	0	0	0	1	310	0	0	311	87	0	2	0	89	674	0
% App Total	0.0%	84.7%	15.3%	0.0%		0.0%	0.0%	0.0%	0.0%		0.3%	99.7%	0.0%	0.0%		97.8%	0.0%	2.2%	0.0%			
PHF	.000	.773	.750	.000	.770	.000	.000	.000	.000	.000	.250	.861	.000	.000	.864	.725	.000	.500	.000	.718	.869	

PM PEAK HOUR	SR-33 Southbound					Baldwin Rd Westbound					SR-33 Northbound					Baldwin Rd Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 16:15 to 17:15																						
Peak Hour For Entire Intersection Begins at 16:15																						
16:15	0	108	12	0	120	0	0	0	0	0	0	80	0	0	80	12	0	0	0	12	212	0
16:30	0	120	15	0	135	0	0	0	0	0	0	49	0	0	49	11	0	2	0	13	197	0
16:45	0	121	6	0	127	0	0	0	0	0	0	56	0	0	56	9	0	1	0	10	193	0
17:00	0	131	21	0	152	0	0	0	0	0	0	58	0	0	58	11	0	1	0	12	222	0
Total Volume	0	480	54	0	534	0	0	0	0	0	0	243	0	0	243	43	0	4	0	47	824	0
% App Total	0.0%	89.9%	10.1%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		91.5%	0.0%	8.5%	0.0%			
PHF	.000	.916	.643	.000	.878	.000	.000	.000	.000	.000	.000	.759	.000	.000	.759	.896	.000	.500	.000	.904	.928	

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-021

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	Rogers Rd Southbound					SR-33 Westbound					Rogers Rd Northbound					SR-33 Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	0	0	0	0	0	98	0	0	98	11	0	3	0	14	0	41	14	0	55	167	0
7:15	0	0	0	0	0	0	106	0	0	106	13	0	0	0	13	0	56	12	0	68	187	0
7:30	0	0	0	0	0	3	102	0	0	105	15	0	2	0	17	0	99	13	0	112	234	0
7:45	0	0	0	0	0	3	89	0	0	92	11	0	2	0	13	0	64	27	0	91	196	0
Total	0	0	0	0	0	6	395	0	0	401	50	0	7	0	57	0	260	66	0	326	784	0
8:00	0	0	0	0	0	4	70	0	0	74	8	0	2	0	10	0	45	15	0	60	144	0
8:15	0	0	0	0	0	3	59	0	0	62	8	0	0	0	8	0	34	12	0	46	116	0
8:30	0	0	0	0	0	3	64	0	0	67	7	0	2	0	9	0	45	12	0	57	133	0
8:45	0	0	0	0	0	0	45	0	0	45	16	0	3	0	19	0	44	22	0	66	130	0
Total	0	0	0	0	0	10	238	0	0	248	39	0	7	0	46	0	168	61	0	229	523	0
16:00	0	0	0	0	0	1	77	0	0	78	29	0	0	0	29	0	115	16	0	131	238	0
16:15	0	0	0	0	0	1	87	0	0	88	38	0	2	0	40	0	118	10	0	128	256	0
16:30	0	0	0	0	0	1	65	0	0	66	37	0	3	0	40	0	124	10	0	134	240	0
16:45	0	0	0	0	0	1	57	0	0	58	28	0	3	0	31	0	142	19	0	161	250	0
Total	0	0	0	0	0	4	286	0	0	290	132	0	8	0	140	0	499	55	0	554	984	0
17:00	0	0	0	0	0	2	75	0	0	77	15	0	2	0	17	0	138	14	0	152	246	0
17:15	0	0	0	0	0	1	68	0	0	69	8	0	3	0	11	0	137	19	0	156	236	0
17:30	0	0	0	0	0	1	67	0	0	68	25	0	1	0	26	0	118	19	0	137	231	0
17:45	0	0	0	0	0	2	41	0	0	43	31	0	1	0	32	0	141	30	0	171	246	0
Total	0	0	0	0	0	6	251	0	0	257	79	0	7	0	86	0	534	82	0	616	959	0
Grand Total	0	0	0	0	0	26	1170	0	0	1196	300	0	29	0	329	0	1461	264	0	1725	3250	0
Apprch %	0.0%	0.0%	0.0%	0.0%		2.2%	97.8%	0.0%	0.0%		91.2%	0.0%	8.8%	0.0%		0.0%	84.7%	15.3%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	36.0%	0.0%	0.0%	36.8%	9.2%	0.0%	0.9%	0.0%	10.1%	0.0%	45.0%	8.1%	0.0%	53.1%	100.0%	

AM PEAK HOUR	Rogers Rd Southbound					SR-33 Westbound					Rogers Rd Northbound					SR-33 Eastbound					Total
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	0	0	0	98	0	0	98	11	0	3	0	14	0	41	14	0	55	167
7:15	0	0	0	0	0	0	106	0	0	106	13	0	0	0	13	0	56	12	0	68	187
7:30	0	0	0	0	0	3	102	0	0	105	15	0	2	0	17	0	99	13	0	112	234
7:45	0	0	0	0	0	3	89	0	0	92	11	0	2	0	13	0	64	27	0	91	196
Total Volume	0	0	0	0	0	6	395	0	0	401	50	0	7	0	57	0	260	66	0	326	784
% App Total	0.0%	0.0%	0.0%	0.0%		1.5%	98.5%	0.0%	0.0%		87.7%	0.0%	12.3%	0.0%		0.0%	79.8%	20.2%	0.0%		
PHF	.000	.000	.000	.000	.000	.500	.932	.000	.000	.946	.833	.000	.583	.000	.838	.000	.657	.611	.000	.728	.838

PM PEAK HOUR	Rogers Rd Southbound					SR-33 Westbound					Rogers Rd Northbound					SR-33 Eastbound					Total
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	0	0	0	0	1	87	0	0	88	38	0	2	0	40	0	118	10	0	128	256
16:30	0	0	0	0	0	1	65	0	0	66	37	0	3	0	40	0	124	10	0	134	240
16:45	0	0	0	0	0	1	57	0	0	58	28	0	3	0	31	0	142	19	0	161	250
17:00	0	0	0	0	0	2	75	0	0	77	15	0	2	0	17	0	138	14	0	152	246
Total Volume	0	0	0	0	0	5	284	0	0	289	118	0	10	0	128	0	522	53	0	575	992
% App Total	0.0%	0.0%	0.0%	0.0%		1.7%	98.3%	0.0%	0.0%		92.2%	0.0%	7.8%	0.0%		0.0%	90.8%	9.2%	0.0%		
PHF	.000	.000	.000	.000	.000	.625	.816	.000	.000	.821	.776	.000	.833	.000	.800	.000	.919	.697	.000	.893	.969

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-022

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	Sycamore Ave Southbound					Eucalyptus Ave Westbound					Sycamore Ave Northbound					Eucalyptus Ave Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	6	1	0	7	0	4	0	0	4	0	10	0	0	10	0	1	0	0	1	22	0
7:15	0	10	0	0	10	0	7	0	0	7	0	4	0	0	4	1	2	0	0	3	24	0
7:30	0	12	1	0	13	0	5	1	0	6	1	7	0	0	8	0	0	6	0	6	33	0
7:45	0	12	1	0	13	0	3	0	0	3	1	10	0	0	11	2	2	1	0	5	32	0
Total	0	40	3	0	43	0	19	1	0	20	2	31	0	0	33	3	5	7	0	15	111	0
8:00	0	2	1	0	3	0	5	0	0	5	5	6	0	0	11	1	6	0	0	7	26	0
8:15	2	5	0	0	7	1	2	0	0	3	1	8	0	0	9	0	1	1	0	2	21	0
8:30	0	3	0	0	3	0	3	1	0	4	1	7	0	0	8	1	0	1	0	2	17	0
8:45	0	4	0	0	4	0	3	0	0	3	1	6	0	0	7	0	3	4	0	7	21	0
Total	2	14	1	0	17	1	13	1	0	15	8	27	0	0	35	2	10	6	0	18	85	0
16:00	0	14	2	0	16	0	1	0	0	1	1	2	0	0	3	0	7	3	0	10	30	0
16:15	4	5	1	0	10	0	0	0	0	0	0	9	2	0	11	2	16	1	0	19	40	0
16:30	1	17	1	0	19	0	5	1	0	6	0	2	0	0	2	1	11	2	0	14	41	0
16:45	1	18	1	1	21	0	3	0	0	3	0	2	0	0	2	1	9	2	0	12	38	1
Total	6	54	5	1	66	0	9	1	0	10	1	15	2	0	18	4	43	8	0	55	149	1
17:00	0	16	0	0	16	0	4	0	0	4	1	6	0	0	7	3	8	1	0	12	39	0
17:15	0	11	1	0	12	0	5	0	0	5	0	6	1	0	7	3	10	3	0	16	40	0
17:30	1	5	3	0	9	1	4	0	0	5	0	9	0	0	9	0	6	1	0	7	30	0
17:45	0	10	1	0	11	1	5	0	0	6	0	5	1	0	6	1	7	1	0	9	32	0
Total	1	42	5	0	48	2	18	0	0	20	1	26	2	0	29	7	31	6	0	44	141	0
Grand Total	9	150	14	1	174	3	59	3	0	65	12	99	4	0	115	16	89	27	0	132	486	1
Apprch %	5.2%	86.2%	8.0%	0.6%		4.6%	90.8%	4.6%	0.0%		10.4%	86.1%	3.5%	0.0%		12.1%	67.4%	20.5%	0.0%			
Total %	1.9%	30.9%	2.9%	0.2%	35.8%	0.6%	12.1%	0.6%	0.0%	13.4%	2.5%	20.4%	0.8%	0.0%	23.7%	3.3%	18.3%	5.6%	0.0%	27.2%	100.0%	

AM PEAK HOUR	Sycamore Ave Southbound					Eucalyptus Ave Westbound					Sycamore Ave Northbound					Eucalyptus Ave Eastbound					Total
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	10	0	0	10	0	7	0	0	7	0	4	0	0	4	1	2	0	0	3	24
7:30	0	12	1	0	13	0	5	1	0	6	1	7	0	0	8	0	0	6	0	6	33
7:45	0	12	1	0	13	0	3	0	0	3	1	10	0	0	11	2	2	1	0	5	32
8:00	0	2	1	0	3	0	5	0	0	5	5	6	0	0	11	1	6	0	0	7	26
Total Volume	0	36	3	0	39	0	20	1	0	21	7	27	0	0	34	4	10	7	0	21	115
% App Total	0.0%	92.3%	7.7%	0.0%		0.0%	95.2%	4.8%	0.0%		20.6%	79.4%	0.0%	0.0%		19.0%	47.6%	33.3%	0.0%		
PHF	.000	.750	.750	.000	.750	.000	.714	.250	.000	.750	.350	.675	.000	.000	.773	.500	.417	.292	.000	.750	.871

PM PEAK HOUR	Sycamore Ave Southbound					Eucalyptus Ave Westbound					Sycamore Ave Northbound					Eucalyptus Ave Eastbound					Total
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	4	5	1	0	10	0	0	0	0	0	0	9	2	0	11	2	16	1	0	19	40
16:30	1	17	1	0	19	0	5	1	0	6	0	2	0	0	2	1	11	2	0	14	41
16:45	1	18	1	1	21	0	3	0	0	3	0	2	0	0	2	1	9	2	0	12	38
17:00	0	16	0	0	16	0	4	0	0	4	1	6	0	0	7	3	8	1	0	12	39
Total Volume	6	56	3	1	66	0	12	1	0	13	1	19	2	0	22	7	44	6	0	57	158
% App Total	9.1%	84.8%	4.5%	1.5%		0.0%	92.3%	7.7%	0.0%		4.5%	86.4%	9.1%	0.0%		12.3%	77.2%	10.5%	0.0%		
PHF	.375	.778	.750	.250	.786	.000	.600	.250	.000	.542	.250	.528	.250	.000	.500	.583	.688	.750	.000	.750	.963

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-023

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	Elm Ave Southbound					Eucalyptus Ave Westbound					Elm Ave Northbound					Eucalyptus Ave Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	6	1	0	7	1	1	0	0	2	3	4	0	0	7	1	0	3	0	4	20	0
7:15	0	8	0	0	8	1	2	0	0	3	4	9	1	0	14	0	0	2	0	2	27	0
7:30	0	2	0	0	2	0	1	0	0	1	4	5	0	0	9	0	0	0	0	0	12	0
7:45	0	6	0	0	6	0	1	0	0	1	2	3	0	0	5	1	0	1	0	2	14	0
Total	0	22	1	0	23	2	5	0	0	7	13	21	1	0	35	2	0	6	0	8	73	0
8:00	1	4	1	0	6	0	0	0	0	0	4	11	0	0	15	0	1	6	0	7	28	0
8:15	0	1	1	0	2	0	0	1	0	1	2	9	0	0	11	0	0	2	0	2	16	0
8:30	1	2	1	0	4	1	0	0	0	1	3	5	0	0	8	0	0	0	0	0	13	0
8:45	0	5	0	0	5	1	0	0	0	1	2	8	1	0	11	1	1	0	0	2	19	0
Total	2	12	3	0	17	2	0	1	0	3	11	33	1	0	45	1	2	8	0	11	76	0
16:00	0	13	0	0	13	2	0	0	0	2	0	4	1	0	5	1	0	7	0	8	28	0
16:15	0	12	1	0	13	1	0	0	0	1	2	4	2	0	8	2	3	11	0	16	38	0
16:30	1	9	0	0	10	1	1	0	0	2	2	2	4	0	8	1	0	11	0	12	32	0
16:45	2	17	0	0	19	0	0	1	0	1	2	4	0	0	6	0	0	6	0	6	32	0
Total	3	51	1	0	55	4	1	1	0	6	6	14	7	0	27	4	3	35	0	42	130	0
17:00	0	13	0	0	13	0	3	0	0	3	1	5	1	0	7	0	0	9	0	9	32	0
17:15	0	10	1	0	11	1	1	0	0	2	2	7	2	0	11	0	1	9	0	10	34	0
17:30	1	9	0	0	10	0	0	0	0	0	3	3	1	0	7	1	1	5	0	7	24	0
17:45	0	11	0	0	11	0	0	0	0	0	4	2	1	0	7	0	0	6	0	6	24	0
Total	1	43	1	0	45	1	4	0	0	5	10	17	5	0	32	1	2	29	0	32	114	0
Grand Total	6	128	6	0	140	9	10	2	0	21	40	85	14	0	139	8	7	78	0	93	393	0
Apprch %	4.3%	91.4%	4.3%	0.0%		42.9%	47.6%	9.5%	0.0%		28.8%	61.2%	10.1%	0.0%		8.6%	7.5%	83.9%	0.0%			
Total %	1.5%	32.6%	1.5%	0.0%	35.6%	2.3%	2.5%	0.5%	0.0%	5.3%	10.2%	21.6%	3.6%	0.0%	35.4%	2.0%	1.8%	19.8%	0.0%	23.7%	100.0%	

AM PEAK HOUR	Elm Ave Southbound					Eucalyptus Ave Westbound					Elm Ave Northbound					Eucalyptus Ave Eastbound					Total
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	8	0	0	8	1	2	0	0	3	4	9	1	0	14	0	0	2	0	2	27
7:30	0	2	0	0	2	0	1	0	0	1	4	5	0	0	9	0	0	0	0	0	12
7:45	0	6	0	0	6	0	1	0	0	1	2	3	0	0	5	1	0	1	0	2	14
8:00	1	4	1	0	6	0	0	0	0	0	4	11	0	0	15	0	1	6	0	7	28
Total Volume	1	20	1	0	22	1	4	0	0	5	14	28	1	0	43	1	1	9	0	11	81
% App Total	4.5%	90.9%	4.5%	0.0%		20.0%	80.0%	0.0%	0.0%		32.6%	65.1%	2.3%	0.0%		9.1%	9.1%	81.8%	0.0%		
PHF	.250	.625	.250	.000	.688	.250	.500	.000	.000	.417	.875	.636	.250	.000	.717	.250	.250	.375	.000	.393	.723

PM PEAK HOUR	Elm Ave Southbound					Eucalyptus Ave Westbound					Elm Ave Northbound					Eucalyptus Ave Eastbound					Total
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	12	1	0	13	1	0	0	0	1	2	4	2	0	8	2	3	11	0	16	38
16:30	1	9	0	0	10	1	1	0	0	2	2	2	4	0	8	1	0	11	0	12	32
16:45	2	17	0	0	19	0	0	1	0	1	2	4	0	0	6	0	0	6	0	6	32
17:00	0	13	0	0	13	0	3	0	0	3	1	5	1	0	7	0	0	9	0	9	32
Total Volume	3	51	1	0	55	2	4	1	0	7	7	15	7	0	29	3	3	37	0	43	134
% App Total	5.5%	92.7%	1.8%	0.0%		28.6%	57.1%	14.3%	0.0%		24.1%	51.7%	24.1%	0.0%		7.0%	7.0%	86.0%	0.0%		
PHF	.375	.750	.250	.000	.724	.500	.333	.250	.000	.583	.875	.750	.438	.000	.906	.375	.250	.841	.000	.672	.882

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-024

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	Sycamore Ave Southbound					Las Palmas Ave Westbound					Sycamore Ave Northbound					Las Palmas Ave Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	5	6	2	0	13	1	75	5	0	81	2	5	13	0	20	0	67	2	0	69	183	0
7:15	11	3	3	0	17	2	117	14	0	133	1	6	16	0	23	1	80	1	0	82	255	0
7:30	14	5	4	0	23	6	94	15	0	115	0	10	15	0	25	2	91	0	0	93	256	0
7:45	11	13	2	0	26	2	117	10	0	129	0	10	12	0	22	6	93	2	0	101	278	0
Total	41	27	11	0	79	11	403	44	0	458	3	31	56	0	90	9	331	5	0	345	972	0
8:00	11	5	1	0	17	4	40	4	0	48	1	4	10	0	15	3	98	2	0	103	183	0
8:15	8	5	1	0	14	5	54	7	0	66	1	5	6	0	12	3	86	0	0	89	181	0
8:30	8	3	0	0	11	4	53	3	0	60	0	1	11	0	12	0	67	0	0	67	150	0
8:45	8	2	1	0	11	3	60	10	0	73	2	3	7	0	12	2	59	2	0	63	159	0
Total	35	15	3	0	53	16	207	24	0	247	4	13	34	0	51	8	310	4	0	322	673	0
16:00	7	8	3	0	18	2	73	10	0	85	1	3	13	0	17	1	94	4	0	99	219	0
16:15	11	3	2	0	16	8	101	8	0	117	0	11	15	0	26	2	105	2	0	109	268	0
16:30	14	8	4	0	26	9	109	6	0	124	2	4	8	0	14	1	96	2	0	99	263	0
16:45	18	5	3	0	26	5	117	12	0	134	1	4	15	0	20	4	78	2	0	84	264	0
Total	50	24	12	0	86	24	400	36	0	460	4	22	51	0	77	8	373	10	0	391	1014	0
17:00	11	10	3	0	24	6	98	8	0	112	2	7	12	0	21	0	105	1	0	106	263	0
17:15	14	5	3	0	22	7	129	11	0	147	5	4	12	0	21	2	64	4	0	70	260	0
17:30	12	5	2	0	19	10	112	8	0	130	0	3	19	0	22	0	94	2	0	96	267	0
17:45	7	0	5	0	12	5	114	5	0	124	5	5	12	0	22	3	71	2	0	76	234	0
Total	44	20	13	0	77	28	453	32	0	513	12	19	55	0	86	5	334	9	0	348	1024	0
Grand Total	170	86	39	0	295	79	1463	136	0	1678	23	85	196	0	304	30	1348	28	0	1406	3683	0
Apprch %	57.6%	29.2%	13.2%	0.0%		4.7%	87.2%	8.1%	0.0%		7.6%	28.0%	64.5%	0.0%		2.1%	95.9%	2.0%	0.0%			
Total %	4.6%	2.3%	1.1%	0.0%	8.0%	2.1%	39.7%	3.7%	0.0%	45.6%	0.6%	2.3%	5.3%	0.0%	8.3%	0.8%	36.6%	0.8%	0.0%	38.2%	100.0%	

AM PEAK HOUR	Sycamore Ave Southbound					Las Palmas Ave Westbound					Sycamore Ave Northbound					Las Palmas Ave Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	5	6	2	0	13	1	75	5	0	81	2	5	13	0	20	0	67	2	0	69	183
7:15	11	3	3	0	17	2	117	14	0	133	1	6	16	0	23	1	80	1	0	82	255
7:30	14	5	4	0	23	6	94	15	0	115	0	10	15	0	25	2	91	0	0	93	256
7:45	11	13	2	0	26	2	117	10	0	129	0	10	12	0	22	6	93	2	0	101	278
Total Volume	41	27	11	0	79	11	403	44	0	458	3	31	56	0	90	9	331	5	0	345	972
% App Total	51.9%	34.2%	13.9%	0.0%		2.4%	88.0%	9.6%	0.0%		3.3%	34.4%	62.2%	0.0%		2.6%	95.9%	1.4%	0.0%		
PHF	.732	.519	.688	.000	.760	.458	.861	.733	.000	.861	.375	.775	.875	.000	.900	.375	.890	.625	.000	.854	.874

PM PEAK HOUR	Sycamore Ave Southbound					Las Palmas Ave Westbound					Sycamore Ave Northbound					Las Palmas Ave Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	11	3	2	0	16	8	101	8	0	117	0	11	15	0	26	2	105	2	0	109	268
16:30	14	8	4	0	26	9	109	6	0	124	2	4	8	0	14	1	96	2	0	99	263
16:45	18	5	3	0	26	5	117	12	0	134	1	4	15	0	20	4	78	2	0	84	264
17:00	11	10	3	0	24	6	98	8	0	112	2	7	12	0	21	0	105	1	0	106	263
Total Volume	54	26	12	0	92	28	425	34	0	487	5	26	50	0	81	7	384	7	0	398	1058
% App Total	58.7%	28.3%	13.0%	0.0%		5.7%	87.3%	7.0%	0.0%		6.2%	32.1%	61.7%	0.0%		1.8%	96.5%	1.8%	0.0%		
PHF	.750	.650	.750	.000	.885	.778	.908	.708	.000	.909	.625	.591	.833	.000	.779	.438	.914	.875	.000	.913	.987

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-025

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	Elm Ave Southbound					Las Palmas Ave Westbound					Elm Ave Northbound					Las Palmas Ave Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	15	0	1	0	16	5	81	10	0	96	3	1	6	0	10	1	86	0	0	87	209	0
7:15	11	2	1	0	14	6	125	11	0	142	2	3	7	0	12	0	100	1	0	101	269	0
7:30	9	2	2	0	13	0	115	17	0	132	3	3	4	0	10	0	123	1	0	124	279	0
7:45	14	1	2	0	17	2	110	7	0	119	2	3	9	0	14	1	103	2	0	106	256	0
Total	49	5	6	0	60	13	431	45	0	489	10	10	26	0	46	2	412	4	0	418	1013	0
8:00	14	2	2	0	18	3	48	8	0	59	0	4	3	0	7	2	121	2	0	125	209	0
8:15	6	4	3	0	13	3	65	8	0	76	0	6	7	0	13	1	100	2	0	103	205	0
8:30	6	2	0	0	8	4	60	6	0	70	2	2	2	0	6	2	82	1	0	85	169	0
8:45	5	4	1	0	10	2	71	6	0	79	0	1	5	0	6	1	77	2	0	80	175	0
Total	31	12	6	0	49	12	244	28	0	284	2	13	17	0	32	6	380	7	0	393	758	0
16:00	15	5	2	0	22	1	90	4	0	95	1	3	7	0	11	3	113	0	0	116	244	0
16:15	21	7	2	0	30	8	109	11	0	128	3	3	6	0	12	1	132	1	0	134	304	0
16:30	20	5	3	0	28	9	115	6	0	130	2	4	3	0	9	1	97	3	0	101	268	0
16:45	21	5	3	0	29	2	131	3	0	136	3	4	6	0	13	1	125	1	0	127	305	0
Total	77	22	10	0	109	20	445	24	0	489	9	14	22	0	45	6	467	5	0	478	1121	0
17:00	17	4	2	0	23	10	111	10	0	131	1	1	5	0	7	1	118	2	0	121	282	0
17:15	17	4	3	0	24	6	139	9	0	154	3	4	4	0	11	0	92	2	0	94	283	0
17:30	11	2	1	0	14	8	122	7	0	137	0	0	8	0	8	2	113	0	0	115	274	0
17:45	15	3	0	0	18	3	126	8	0	137	2	0	2	0	4	1	87	2	0	90	249	0
Total	60	13	6	0	79	27	498	34	0	559	6	5	19	0	30	4	410	6	0	420	1088	0
Grand Total	217	52	28	0	297	72	1618	131	0	1821	27	42	84	0	153	18	1669	22	0	1709	3980	0
Apprch %	73.1%	17.5%	9.4%	0.0%		4.0%	88.9%	7.2%	0.0%		17.6%	27.5%	54.9%	0.0%		1.1%	97.7%	1.3%	0.0%			
Total %	5.5%	1.3%	0.7%	0.0%	7.5%	1.8%	40.7%	3.3%	0.0%	45.8%	0.7%	1.1%	2.1%	0.0%	3.8%	0.5%	41.9%	0.6%	0.0%	42.9%	100.0%	

AM PEAK HOUR	Elm Ave Southbound					Las Palmas Ave Westbound					Elm Ave Northbound					Las Palmas Ave Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:00 to 08:00																						
Peak Hour For Entire Intersection Begins at 07:00																						
7:00	15	0	1	0	16	5	81	10	0	96	3	1	6	0	10	1	86	0	0	87	209	
7:15	11	2	1	0	14	6	125	11	0	142	2	3	7	0	12	0	100	1	0	101	269	
7:30	9	2	2	0	13	0	115	17	0	132	3	3	4	0	10	0	123	1	0	124	279	
7:45	14	1	2	0	17	2	110	7	0	119	2	3	9	0	14	1	103	2	0	106	256	
Total Volume	49	5	6	0	60	13	431	45	0	489	10	10	26	0	46	2	412	4	0	418	1013	
% App Total	81.7%	8.3%	10.0%	0.0%		2.7%	88.1%	9.2%	0.0%		21.7%	21.7%	56.5%	0.0%		0.5%	98.6%	1.0%	0.0%			
PHF	.817	.625	.750	.000	.882	.542	.862	.662	.000	.861	.833	.833	.722	.000	.821	.500	.837	.500	.000	.843	.908	

PM PEAK HOUR	Elm Ave Southbound					Las Palmas Ave Westbound					Elm Ave Northbound					Las Palmas Ave Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 16:15 to 17:15																						
Peak Hour For Entire Intersection Begins at 16:15																						
16:15	21	7	2	0	30	8	109	11	0	128	3	3	6	0	12	1	132	1	0	134	304	
16:30	20	5	3	0	28	9	115	6	0	130	2	4	3	0	9	1	97	3	0	101	268	
16:45	21	5	3	0	29	2	131	3	0	136	3	4	6	0	13	1	125	1	0	127	305	
17:00	17	4	2	0	23	10	111	10	0	131	1	1	5	0	7	1	118	2	0	121	282	
Total Volume	79	21	10	0	110	29	466	30	0	525	9	12	20	0	41	4	472	7	0	483	1159	
% App Total	71.8%	19.1%	9.1%	0.0%		5.5%	88.8%	5.7%	0.0%		22.0%	29.3%	48.8%	0.0%		0.8%	97.7%	1.4%	0.0%			
PHF	.940	.750	.833	.000	.917	.725	.889	.682	.000	.965	.750	.750	.833	.000	.788	1.000	.894	.583	.000	.901	.950	

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 18-07211-026

Date : 05/22/2018

Unshifted Count = All Vehicles & Uturns

START TIME	Jennings Rd Southbound					Las Palmas Ave Westbound					Jennings Rd Northbound					Las Palmas Ave Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	0	22	0	22	0	76	0	0	76	0	0	0	0	0	24	81	0	0	105	203	0
7:15	0	0	33	0	33	0	113	0	0	113	0	0	0	0	0	40	72	0	0	112	258	0
7:30	2	0	26	0	28	0	105	1	0	106	0	0	0	0	0	57	78	0	0	135	269	0
7:45	0	0	25	0	25	0	82	0	0	82	0	0	0	0	0	46	81	0	0	127	234	0
Total	2	0	106	0	108	0	376	1	0	377	0	0	0	0	0	167	312	0	0	479	964	0
8:00	0	0	5	0	5	0	52	1	0	53	0	0	0	0	0	48	101	0	0	149	207	0
8:15	0	0	21	0	21	0	46	1	0	47	0	0	0	0	0	26	84	0	0	110	178	0
8:30	1	0	17	0	18	0	60	1	0	61	0	0	0	0	0	25	70	0	0	95	174	0
8:45	1	0	13	0	14	0	65	0	0	65	0	0	0	0	0	28	57	0	0	85	164	0
Total	2	0	56	0	58	0	223	3	0	226	0	0	0	0	0	127	312	0	0	439	723	0
16:00	2	0	24	0	26	0	72	1	0	73	0	0	0	0	0	32	100	0	0	132	231	0
16:15	1	0	29	0	30	0	103	0	0	103	0	0	0	0	0	29	115	0	0	144	277	0
16:30	4	0	34	0	38	0	83	0	0	83	0	0	0	0	0	29	90	0	0	119	240	0
16:45	1	0	42	0	43	0	104	0	0	104	0	0	0	0	0	34	122	0	0	156	303	0
Total	8	0	129	0	137	0	362	1	0	363	0	0	0	0	0	124	427	0	0	551	1051	0
17:00	0	0	41	0	41	0	86	0	0	86	0	0	0	0	0	22	115	0	0	137	264	0
17:15	0	0	30	0	30	0	127	0	0	127	0	0	0	0	0	29	95	0	0	124	281	0
17:30	1	0	45	0	46	0	97	0	0	97	0	0	0	0	0	37	101	0	0	138	281	0
17:45	0	0	28	0	28	0	90	0	0	90	0	0	0	0	0	23	78	0	0	101	219	0
Total	1	0	144	0	145	0	400	0	0	400	0	0	0	0	0	111	389	0	0	500	1045	0
Grand Total	13	0	435	0	448	0	1361	5	0	1366	0	0	0	0	0	529	1440	0	0	1969	3783	0
Apprch %	2.9%	0.0%	97.1%	0.0%		0.0%	99.6%	0.4%	0.0%		0.0%	0.0%	0.0%	0.0%		26.9%	73.1%	0.0%	0.0%			
Total %	0.3%	0.0%	11.5%	0.0%	11.8%	0.0%	36.0%	0.1%	0.0%	36.1%	0.0%	0.0%	0.0%	0.0%	0.0%	14.0%	38.1%	0.0%	0.0%	52.0%	100.0%	

AM PEAK HOUR	Jennings Rd Southbound					Las Palmas Ave Westbound					Jennings Rd Northbound					Las Palmas Ave Eastbound					Total
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	33	0	33	0	113	0	0	113	0	0	0	0	0	40	72	0	0	112	258
7:30	2	0	26	0	28	0	105	1	0	106	0	0	0	0	0	57	78	0	0	135	269
7:45	0	0	25	0	25	0	82	0	0	82	0	0	0	0	0	46	81	0	0	127	234
8:00	0	0	5	0	5	0	52	1	0	53	0	0	0	0	0	48	101	0	0	149	207
Total Volume	2	0	89	0	91	0	352	2	0	354	0	0	0	0	0	191	332	0	0	523	968
% App Total	2.2%	0.0%	97.8%	0.0%		0.0%	99.4%	0.6%	0.0%		0.0%	0.0%	0.0%	0.0%		36.5%	63.5%	0.0%	0.0%		
PHF	.250	.000	.674	.000	.689	.000	.779	.500	.000	.783	.000	.000	.000	.000	.000	.838	.822	.000	.000	.878	.900

PM PEAK HOUR	Jennings Rd Southbound					Las Palmas Ave Westbound					Jennings Rd Northbound					Las Palmas Ave Eastbound					Total
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	1	0	42	0	43	0	104	0	0	104	0	0	0	0	0	34	122	0	0	156	303
17:00	0	0	41	0	41	0	86	0	0	86	0	0	0	0	0	22	115	0	0	137	264
17:15	0	0	30	0	30	0	127	0	0	127	0	0	0	0	0	29	95	0	0	124	281
17:30	1	0	45	0	46	0	97	0	0	97	0	0	0	0	0	37	101	0	0	138	281
Total Volume	2	0	158	0	160	0	414	0	0	414	0	0	0	0	0	122	433	0	0	555	1129
% App Total	1.3%	0.0%	98.8%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		22.0%	78.0%	0.0%	0.0%		
PHF	.500	.000	.878	.000	.870	.000	.815	.000	.000	.815	.000	.000	.000	.000	.000	.824	.887	.000	.000	.889	.932

CLASSIFICATION

Sperry Ave Bet. Rogers Rd & Park Center Dr

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	120	10	1	12	1	0	0	58	0	0	0	0	202
01:00	2	89	8	0	5	5	0	1	36	0	0	0	0	146
02:00	3	124	12	3	5	8	0	1	24	0	0	0	0	180
03:00	2	309	43	2	27	4	0	2	26	0	0	0	0	415
04:00	0	392	91	5	58	5	0	1	37	0	6	0	0	595
05:00	0	421	102	7	59	11	0	4	41	0	4	0	0	649
06:00	1	518	79	8	59	5	0	7	64	0	1	0	0	742
07:00	1	510	80	8	61	14	0	7	79	0	2	0	0	762
08:00	3	412	71	4	44	7	0	6	45	0	0	0	0	592
09:00	0	426	71	5	56	9	0	10	64	0	0	0	0	641
10:00	2	441	62	9	55	4	0	18	68	1	0	0	0	660
11:00	4	467	82	8	53	6	0	13	70	0	1	0	0	704
12:00 PM	1	553	92	4	57	11	0	11	57	0	0	0	0	786
13:00	1	553	74	7	68	6	0	11	87	0	1	0	0	808
14:00	3	574	63	8	63	5	0	14	64	0	0	0	0	794
15:00	0	604	90	4	61	6	0	14	74	0	1	0	0	854
16:00	5	642	105	5	88	9	1	9	56	0	3	0	0	923
17:00	9	714	70	5	69	4	0	1	50	0	1	0	0	923
18:00	4	659	88	3	57	6	0	11	59	0	2	0	0	889
19:00	0	537	67	7	55	2	0	7	50	0	1	0	0	726
20:00	3	487	54	3	40	2	0	2	52	1	5	0	0	649
21:00	1	532	46	2	32	1	0	3	48	0	2	0	0	667
22:00	1	324	37	5	25	3	0	0	42	0	3	0	0	440
23:00	4	214	13	4	15	5	0	5	26	0	4	0	0	290
Totals	50	10622	1510	117	1124	139	1	158	1277	2	37			15037
% of Totals	0%	71%	10%	1%	7%	1%	0%	1%	8%	0%	0%			100%

AM Volumes	18	4229	711	60	494	79	0	70	612	1	14	0	0	6288
% AM	0%	28%	5%	0%	3%	1%		0%	4%	0%	0%			42%
AM Peak Hour	11:00	06:00	05:00	10:00	07:00	07:00		10:00	07:00	10:00	04:00			07:00
Volume	4	518	102	9	61	14		18	79	1	6			762
PM Volumes	32	6393	799	57	630	60	1	88	665	1	23	0	0	8749
% PM	0%	43%	5%	0%	4%	0%	0%	1%	4%	0%	0%			58%
PM Peak Hour	17:00	17:00	16:00	14:00	16:00	12:00	16:00	14:00	13:00	20:00	20:00			16:00
Volume	9	714	105	8	88	11	1	14	87	1	5			923

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1354	↔ 9%	1594	↔ 11%	1846	↔ 12%	10243	↔ 68%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Baldwin Rd N/O Sperry Ave

Day: Wednesday
Date: 5/30/2018

City: Patterson
Project #: CA18_7213_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	49	2	0	0	0	0	0	0	0	0	0	0	51
01:00	0	37	4	0	1	1	0	0	0	0	0	0	0	43
02:00	0	43	1	0	4	0	0	0	0	0	0	0	0	48
03:00	0	77	16	0	6	0	0	0	0	0	0	0	0	99
04:00	0	131	12	1	15	2	0	0	0	0	0	0	0	161
05:00	0	169	19	1	18	0	0	0	1	0	0	0	0	208
06:00	0	168	16	0	19	3	2	0	4	0	0	0	0	212
07:00	1	234	41	0	17	3	0	1	1	0	0	0	0	298
08:00	1	182	28	1	10	1	0	1	1	0	0	0	0	225
09:00	1	192	36	2	23	3	0	0	0	0	0	0	0	257
10:00	2	182	42	0	18	1	0	1	3	0	0	0	0	249
11:00	0	186	24	1	16	1	0	1	2	0	0	0	0	231
12:00 PM	1	209	26	1	19	1	0	1	1	0	0	0	0	259
13:00	1	248	26	2	21	0	0	1	2	0	0	0	0	301
14:00	1	275	32	2	14	0	0	1	1	0	0	0	0	326
15:00	0	222	39	3	20	0	0	1	1	0	0	0	0	286
16:00	1	274	40	1	26	0	0	2	0	0	0	0	0	344
17:00	0	245	29	0	12	0	0	1	0	0	0	0	0	287
18:00	0	222	27	0	18	0	0	1	1	0	0	0	0	269
19:00	0	162	18	0	7	0	0	0	1	0	0	0	0	188
20:00	0	155	19	0	10	0	0	0	0	0	0	0	0	184
21:00	0	157	16	0	9	0	0	0	0	0	0	0	0	182
22:00	0	99	6	1	6	0	0	0	0	0	0	0	0	112
23:00	1	83	5	0	3	0	0	0	0	0	0	0	0	92
Totals	10	4001	524	16	312	16	2	12	19					4912
% of Totals	0%	81%	11%	0%	6%	0%	0%	0%	0%					100%

AM Volumes	5	1650	241	6	147	15	2	4	12	0	0	0	0	2082
% AM	0%	34%	5%	0%	3%	0%	0%	0%	0%					42%
AM Peak Hour	10:00	07:00	10:00	09:00	09:00	06:00	06:00	07:00	06:00					07:00
Volume	2	234	42	2	23	3	2	1	4					298
PM Volumes	5	2351	283	10	165	1	0	8	7	0	0	0	0	2830
% PM	0%	48%	6%	0%	3%	0%		0%	0%					58%
PM Peak Hour	12:00	14:00	16:00	15:00	16:00	12:00		16:00	13:00					16:00
Volume	1	275	40	3	26	1		2	2					344

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	523	↔ 11%	560	↔ 11%	631	↔ 13%	3198	↔ 65%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Ward Ave Bet. Bartch Ave & Elfers Rd

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	8	5	0	1	0	0	0	0	0	0	0	0	14
01:00	0	6	3	0	1	0	0	0	1	0	0	0	0	11
02:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
03:00	0	13	1	0	0	0	0	0	1	0	0	0	0	15
04:00	0	22	8	0	1	0	0	0	0	0	0	0	0	31
05:00	0	48	9	0	13	0	0	0	1	0	0	0	0	71
06:00	0	60	16	1	13	0	0	0	1	0	0	0	0	91
07:00	0	102	24	1	8	3	0	0	0	0	0	0	0	138
08:00	0	75	25	0	15	4	1	0	0	0	0	0	0	120
09:00	0	84	23	0	14	5	1	0	0	0	0	0	0	127
10:00	3	100	27	0	11	2	0	0	1	0	0	0	0	144
11:00	0	105	42	0	17	3	1	0	0	0	0	0	0	168
12:00 PM	0	114	36	0	26	4	1	0	1	0	0	0	0	182
13:00	1	129	33	1	23	4	0	0	1	0	0	0	0	192
14:00	3	169	31	2	33	4	1	0	0	0	0	0	0	243
15:00	2	132	32	1	24	0	0	0	1	0	0	0	0	192
16:00	0	188	30	1	24	0	0	0	1	0	0	0	0	244
17:00	1	182	33	0	24	0	1	0	2	0	0	0	0	243
18:00	1	161	24	0	17	0	0	0	0	0	0	0	0	203
19:00	0	144	9	0	14	0	1	0	1	0	0	0	0	169
20:00	0	120	7	0	6	0	0	0	2	0	0	0	0	135
21:00	2	77	7	0	5	0	1	0	1	0	0	0	0	93
22:00	0	40	6	0	2	0	0	0	1	0	0	0	0	49
23:00	0	38	5	0	1	0	0	0	0	0	0	0	0	44
Totals	13	2129	436	7	293	29	8		16					2931
% of Totals	0%	73%	15%	0%	10%	1%	0%		1%					100%

AM Volumes	3	635	183	2	94	17	3	0	5	0	0	0	0	942
% AM	0%	22%	6%	0%	3%	1%	0%		0%					32%
AM Peak Hour	10:00	11:00	11:00	06:00	11:00	09:00	08:00		01:00					11:00
Volume	3	105	42	1	17	5	1		1					168
PM Volumes	10	1494	253	5	199	12	5	0	11	0	0	0	0	1989
% PM	0%	51%	9%	0%	7%	0%	0%		0%					68%
PM Peak Hour	14:00	16:00	12:00	14:00	14:00	12:00	12:00		17:00					16:00
Volume	3	188	36	2	33	4	1		2					244

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	258	↔ 9%	374	↔ 13%	487	↔ 17%	1812	↔ 62%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

DAILY TOTALS					NB	SB	EB		WB		To				
					0	0	736		662		1,3				
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOT			
00:00	0	0	1	2	3		12:00	0	0	7	8	15			
00:15	0	0	0	0			12:15	0	0	12	11	23			
00:30	0	0	2	0	2		12:30	0	0	13	10	23			
00:45	0	0	1	4	0	2	12:45	0	0	8	40	8	37	16	
01:00	0	0	1	0	1		13:00	0	0	8	7	15			
01:15	0	0	0	0			13:15	0	0	10	17	27			
01:30	0	0	1	2	3		13:30	0	0	11	11	22			
01:45	0	0	0	2	1	3	13:45	0	0	15	44	14	49	29	
02:00	0	0	1	3	4		14:00	0	0	10	10	20			
02:15	0	0	0	1	1		14:15	0	0	15	18	33			
02:30	0	0	0	0			14:30	0	0	18	13	31			
02:45	0	0	1	2	1	5	14:45	0	0	21	64	13	54	34	
03:00	0	0	0	1	1		15:00	0	0	14	12	26			
03:15	0	0	1	0	1		15:15	0	0	19	10	29			
03:30	0	0	1	2	3		15:30	0	0	11	8	19			
03:45	0	0	0	2	4	7	15:45	0	0	15	59	14	44	29	
04:00	0	0	0	3	3		16:00	0	0	17	11	28			
04:15	0	0	0	2	2		16:15	0	0	15	11	26			
04:30	0	0	6	7	13		16:30	0	0	15	11	26			
04:45	0	0	2	8	4	16	16:45	0	0	14	61	13	46	27	
05:00	0	0	1	3	4		17:00	0	0	20	17	37			
05:15	0	0	3	4	7		17:15	0	0	18	10	28			
05:30	0	0	4	7	11		17:30	0	0	21	10	31			
05:45	0	0	3	11	11	25	17:45	0	0	11	70	9	46	20	
06:00	0	0	6	14	20		18:00	0	0	16	19	35			
06:15	0	0	5	6	11		18:15	0	0	17	16	33			
06:30	0	0	3	11	14		18:30	0	0	11	6	17			
06:45	0	0	8	22	6	37	18:45	0	0	10	54	7	48	17	
07:00	0	0	6	11	17		19:00	0	0	9	4	13			
07:15	0	0	8	9	17		19:15	0	0	6	4	10			
07:30	0	0	8	12	20		19:30	0	0	13	4	17			
07:45	0	0	7	29	18	50	19:45	0	0	8	36	3	15	11	
08:00	0	0	6	6	12		20:00	0	0	6	8	14			
08:15	0	0	5	10	15		20:15	0	0	12	2	14			
08:30	0	0	5	8	13		20:30	0	0	10	5	15			
08:45	0	0	1	17	8	32	20:45	0	0	13	41	2	17	15	
09:00	0	0	6	5	11		21:00	0	0	8	3	11			
09:15	0	0	11	7	18		21:15	0	0	8	3	11			
09:30	0	0	6	7	13		21:30	0	0	6	5	11			
09:45	0	0	13	36	10	29	21:45	0	0	4	26	1	12	5	
10:00	0	0	8	11	19		22:00	0	0	6	2	8			
10:15	0	0	6	10	16		22:15	0	0	3	0	3			
10:30	0	0	11	8	19		22:30	0	0	0	3	3			
10:45	0	0	11	36	7	36	22:45	0	0	3	12	1	6	4	
11:00	0	0	7	12	19		23:00	0	0	9	0	9			
11:15	0	0	12	2	14		23:15	0	0	3	2	5			
11:30	0	0	8	11	19		23:30	0	0	2	2	4			
11:45	0	0	13	40	14	39	23:45	0	0	6	20	3	7	9	
TOTALS			209		281		490	TOTALS			527		381		
SPLIT %			42.7%		57.3%		35.1%	SPLIT %			58.0%		42.0%		

DAILY TOTALS					NB	SB	EB		WB		To
					0	0	736		662		1,3

AM Peak Hour			11:45	07:00	11:45	PM Peak Hour			16:45	14:15
AM Pk Volume			45	50	88	PM Pk Volume			73	56
Pk Hr Factor			0.865	0.694	0.815	Pk Hr Factor			0.869	0.778
7 - 9 Volume	0	0	46	82	128	4 - 6 Volume	0	0	131	92
7 - 9 Peak Hour			07:00	07:00	07:00	4 - 6 Peak Hour			16:45	16:15
7 - 9 Pk Volume	0	0	29	50	79	4 - 6 Pk Volume	0	0	73	52
Pk Hr Factor	0.000	0.000	0.906	0.694	0.790	Pk Hr Factor	0.000	0.000	0.869	0.765

CLASSIFICATION

SR-33 Bet. Bartch Ave & Elfers Rd

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_005

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	13
01:00	0	18	0	0	1	1	0	1	0	0	0	0	0	21
02:00	0	20	2	0	1	1	0	4	0	0	0	0	0	28
03:00	0	32	6	0	7	1	0	0	0	0	0	0	0	46
04:00	0	62	16	0	19	2	0	0	0	0	1	0	0	100
05:00	0	144	38	3	37	0	0	7	1	0	1	0	0	231
06:00	0	107	36	6	48	1	0	9	1	0	2	0	0	210
07:00	0	228	65	5	61	3	0	9	2	0	2	0	0	375
08:00	2	148	41	2	39	4	0	11	1	0	3	0	0	251
09:00	0	153	66	2	58	2	0	4	3	0	2	0	0	290
10:00	1	167	66	3	56	1	0	14	0	0	1	0	0	309
11:00	0	182	61	2	59	4	0	7	1	0	2	0	0	318
12:00 PM	0	199	50	5	58	1	0	7	0	0	0	0	0	320
13:00	0	196	56	2	64	2	0	8	0	0	4	0	0	332
14:00	1	219	43	3	53	1	0	7	0	0	0	0	0	327
15:00	6	239	68	1	58	0	0	9	0	0	0	0	0	381
16:00	1	232	67	2	64	1	0	8	0	0	0	0	0	375
17:00	0	277	60	2	55	0	0	5	0	0	2	0	0	401
18:00	0	202	36	1	47	0	0	4	0	0	0	0	0	290
19:00	0	174	27	0	21	0	0	0	1	0	0	0	0	223
20:00	0	124	25	0	29	0	0	1	0	0	2	0	0	181
21:00	1	120	15	0	16	0	0	1	0	0	0	0	0	153
22:00	0	57	7	0	7	0	0	0	0	0	0	0	0	71
23:00	0	39	5	0	3	0	0	0	0	0	0	0	0	47
Totals	12	3350	858	39	861	25		116	10		22			5293
% of Totals	0%	63%	16%	1%	16%	0%		2%	0%		0%			100%

AM Volumes	3	1272	399	23	386	20	0	66	9	0	14	0	0	2192
% AM	0%	24%	8%	0%	7%	0%		1%	0%		0%			41%
AM Peak Hour	08:00	07:00	09:00	06:00	07:00	08:00		10:00	09:00		08:00			07:00
Volume	2	228	66	6	61	4		14	3		3			375
PM Volumes	9	2078	459	16	475	5	0	50	1	0	8	0	0	3101
% PM	0%	39%	9%	0%	9%	0%		1%	0%		0%			59%
PM Peak Hour	15:00	17:00	15:00	12:00	13:00	13:00		15:00	19:00		13:00			17:00
Volume	6	277	68	5	64	2		9	1		4			401

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	626	↔ 12%	652	↔ 12%	776	↔ 15%	3239	↔ 61%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Las Palmas Ave Bet. Eucalyptus Ave & Elm Ave

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_006

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	55	7	0	6	1	0	1	0	0	0	0	0	70
01:00	0	33	3	0	3	3	0	1	2	0	0	0	0	45
02:00	0	53	2	0	5	0	0	1	2	0	0	0	0	63
03:00	0	73	12	0	6	4	0	0	3	0	0	0	0	98
04:00	0	153	28	1	17	2	0	3	1	0	0	0	0	205
05:00	0	253	51	5	42	0	0	2	4	0	0	0	0	357
06:00	1	352	75	4	66	4	0	4	4	0	0	0	0	510
07:00	2	641	94	4	88	3	0	4	7	0	0	0	0	843
08:00	0	435	79	5	54	1	0	2	6	1	0	0	0	583
09:00	0	399	89	0	82	1	0	3	9	2	0	0	0	585
10:00	1	443	77	3	66	2	0	4	8	0	0	0	0	604
11:00	0	412	85	1	63	2	0	6	4	0	0	0	0	573
12:00 PM	0	515	93	4	72	6	0	4	8	1	0	0	0	703
13:00	2	500	75	1	80	2	0	5	6	1	0	0	0	672
14:00	3	606	91	5	83	6	0	1	4	0	0	0	0	799
15:00	0	592	113	3	95	0	0	4	2	0	0	0	0	809
16:00	1	671	103	5	81	3	0	2	1	0	0	0	0	867
17:00	1	815	87	3	88	0	0	1	2	0	0	0	0	997
18:00	1	538	65	3	57	1	0	2	1	0	0	0	0	668
19:00	1	437	54	0	38	2	0	0	0	0	0	0	0	532
20:00	2	345	39	0	38	0	0	0	0	0	0	0	0	424
21:00	1	319	38	0	32	0	0	0	0	0	0	0	0	390
22:00	0	198	26	0	19	0	0	1	0	1	0	0	0	245
23:00	1	121	16	2	10	0	0	0	1	0	0	0	0	151
Totals	17	8959	1402	49	1191	43		51	75	6				11793
% of Totals	0%	76%	12%	0%	10%	0%		0%	1%	0%				100%

AM Volumes	4	3302	602	23	498	23	0	31	50	3	0	0	0	4536
% AM	0%	28%	5%	0%	4%	0%		0%	0%	0%				38%
AM Peak Hour	07:00	07:00	07:00	05:00	07:00	03:00		11:00	09:00	09:00				07:00
Volume	2	641	94	5	88	4		6	9	2				843
PM Volumes	13	5657	800	26	693	20	0	20	25	3	0	0	0	7257
% PM	0%	48%	7%	0%	6%	0%		0%	0%	0%				62%
PM Peak Hour	14:00	17:00	15:00	14:00	15:00	12:00		13:00	12:00	12:00				17:00
Volume	3	815	113	5	95	6		5	8	1				997

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1426	↔ 12%	1375	↔ 12%	1864	↔ 16%	7128	↔ 60%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Las Palmas Ave Bet. Elm Ave & Jennings Rd

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_007

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	1	59	8	0	8	2	0	2	0	0	0	0	0	80
01:00	0	43	5	0	3	2	0	0	1	0	0	0	0	54
02:00	0	58	3	0	5	0	0	3	1	0	0	0	0	70
03:00	0	85	14	1	11	4	0	1	1	0	0	0	0	117
04:00	2	175	31	2	23	2	0	3	2	0	0	0	0	240
05:00	1	319	61	5	42	0	0	6	1	0	1	0	0	436
06:00	6	365	88	5	76	3	0	5	4	0	1	0	0	553
07:00	2	645	114	5	101	1	0	6	1	0	0	0	0	875
08:00	0	456	80	7	63	5	0	7	2	0	1	0	0	621
09:00	1	380	94	1	81	3	1	10	4	0	2	0	0	577
10:00	1	411	72	1	52	3	0	17	1	1	1	0	0	560
11:00	0	418	84	3	62	5	1	6	4	1	1	0	0	585
12:00 PM	3	485	89	2	72	7	0	10	3	0	1	0	0	672
13:00	2	487	82	3	101	5	0	11	1	0	2	0	0	694
14:00	5	615	88	5	91	2	0	9	2	0	1	0	0	818
15:00	3	594	111	7	105	3	0	6	5	0	0	0	0	834
16:00	3	676	101	5	84	2	0	7	1	0	0	0	0	879
17:00	4	831	109	4	68	2	0	3	4	0	0	0	0	1025
18:00	1	557	66	4	55	0	0	4	2	0	0	0	0	689
19:00	5	444	51	0	42	0	0	4	0	0	0	0	0	546
20:00	3	340	33	0	45	1	0	3	0	0	0	0	0	425
21:00	2	326	38	0	25	0	0	2	0	0	0	0	0	393
22:00	0	212	26	1	20	0	0	0	0	0	0	0	0	259
23:00	1	135	16	1	7	0	0	1	2	0	0	0	0	163
Totals	46	9116	1464	62	1242	52	2	126	42	2	11			12165
% of Totals	0%	75%	12%	1%	10%	0%	0%	1%	0%	0%	0%			100%

AM Volumes	14	3414	654	30	527	30	2	66	22	2	7	0	0	4768
% AM	0%	28%	5%	0%	4%	0%	0%	1%	0%	0%	0%			39%
AM Peak Hour	06:00	07:00	07:00	08:00	07:00	08:00	09:00	10:00	06:00	10:00	09:00			07:00
Volume	6	645	114	7	101	5	1	17	4	1	2			875
PM Volumes	32	5702	810	32	715	22	0	60	20	0	4	0	0	7397
% PM	0%	47%	7%	0%	6%	0%		0%	0%		0%			61%
PM Peak Hour	14:00	17:00	15:00	15:00	15:00	12:00		13:00	15:00		13:00			17:00
Volume	5	831	111	7	105	7		11	5		2			1025

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1496	↔ 12%	1366	↔ 11%	1904	↔ 16%	7399	↔ 61%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

SR-33 Bet. Walnut Ave & Olive Ave

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_008

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	14	3	0	3	0	0	0	1	0	0	0	0	21
01:00	1	11	2	0	0	4	0	1	1	0	0	0	0	20
02:00	0	19	2	0	2	0	0	0	2	0	0	0	0	25
03:00	1	68	16	0	8	4	0	1	1	0	0	0	0	99
04:00	1	123	20	0	20	5	0	1	5	0	0	0	0	175
05:00	0	222	55	2	54	0	0	0	4	0	4	0	0	341
06:00	0	139	42	7	51	4	0	3	7	0	2	0	0	255
07:00	2	263	42	7	45	4	0	3	6	0	3	0	0	375
08:00	2	176	44	5	67	7	0	2	8	0	3	0	0	314
09:00	2	166	53	3	58	2	0	3	5	0	3	0	0	295
10:00	1	180	46	3	67	4	0	2	5	0	1	0	0	309
11:00	1	162	42	1	70	2	0	4	8	0	1	0	0	291
12:00 PM	0	227	57	3	74	5	0	2	10	0	0	0	0	378
13:00	4	212	59	7	76	1	0	4	4	0	3	0	0	370
14:00	1	236	54	5	75	1	0	8	7	0	0	0	0	387
15:00	3	278	70	2	69	3	0	5	6	0	0	0	0	436
16:00	3	298	67	4	89	4	0	2	5	0	2	0	0	474
17:00	2	323	55	2	53	2	0	1	8	0	1	0	0	447
18:00	0	254	38	4	43	0	0	0	5	0	0	0	0	344
19:00	2	200	42	2	27	0	0	1	4	0	1	0	0	279
20:00	1	189	26	2	19	2	0	0	2	0	2	0	0	243
21:00	0	115	15	0	13	0	0	0	5	0	0	0	0	148
22:00	0	62	6	0	5	0	0	1	1	0	0	0	0	75
23:00	0	31	4	0	4	0	0	0	1	0	0	0	0	40
Totals	27	3968	860	59	992	54		44	111		26			6141
% of Totals	0%	65%	14%	1%	16%	1%		1%	2%		0%			100%

AM Volumes	11	1543	367	28	445	36	0	20	53	0	17	0	0	2520
% AM	0%	25%	6%	0%	7%	1%		0%	1%		0%			41%
AM Peak Hour	07:00	07:00	05:00	06:00	11:00	08:00		11:00	08:00		05:00			07:00
Volume	2	263	55	7	70	7		4	8		4			375
PM Volumes	16	2425	493	31	547	18	0	24	58	0	9	0	0	3621
% PM	0%	39%	8%	1%	9%	0%		0%	1%		0%			59%
PM Peak Hour	13:00	17:00	15:00	13:00	16:00	12:00		14:00	12:00		13:00			16:00
Volume	4	323	70	7	89	5		8	10		3			474

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	689	↔ 11%	748	↔ 12%	921	↔ 15%	3783	↔ 62%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Eucalyptus Ave W/O Sycamore Ave

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_009

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	6	0	0	2	0	0	0	0	0	0	0	0	8
01:00	0	5	0	0	0	1	0	0	0	0	0	0	0	6
02:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	8	1	0	2	0	0	0	0	0	0	0	0	11
04:00	0	25	8	0	2	0	0	0	0	0	0	0	0	35
05:00	0	49	10	1	4	0	0	0	0	0	0	0	0	64
06:00	0	23	9	3	11	1	0	0	0	0	0	0	0	47
07:00	0	31	5	0	11	1	0	0	0	0	0	0	0	48
08:00	0	22	7	1	12	2	0	1	0	0	0	0	0	45
09:00	0	21	5	0	10	0	0	0	0	0	0	0	0	36
10:00	0	19	4	2	6	0	0	0	0	0	0	0	0	31
11:00	0	27	8	0	10	1	0	0	0	0	0	0	0	46
12:00 PM	0	19	3	2	7	0	0	0	1	0	0	0	0	32
13:00	0	35	9	1	7	1	0	0	0	0	0	0	0	53
14:00	0	58	8	4	12	1	0	0	0	0	0	0	0	83
15:00	0	27	11	1	7	1	0	0	0	0	0	0	0	47
16:00	0	24	4	0	8	0	0	0	0	0	0	0	0	36
17:00	0	38	4	0	4	0	0	0	0	0	0	0	0	46
18:00	0	30	8	1	1	0	0	0	0	0	0	0	0	40
19:00	0	23	4	0	5	0	0	1	0	0	0	0	0	33
20:00	1	16	1	0	3	0	0	0	0	0	0	0	0	21
21:00	0	13	1	0	4	0	0	0	0	0	0	0	0	18
22:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
23:00	0	16	2	0	1	0	0	1	1	0	0	0	0	21
Totals	1	553	112	16	129	9		3	2					825
% of Totals	0%	67%	14%	2%	16%	1%		0%	0%					100%

AM Volumes	0	244	57	7	70	6	0	1	0	0	0	0	0	385
% AM		30%	7%	1%	8%	1%		0%						47%
AM Peak Hour		05:00	05:00	06:00	08:00	08:00		08:00						05:00
Volume		49	10	3	12	2		1						64
PM Volumes	1	309	55	9	59	3	0	2	2	0	0	0	0	440
% PM	0%	37%	7%	1%	7%	0%		0%	0%					53%
PM Peak Hour	20:00	14:00	15:00	14:00	14:00	13:00		19:00	12:00					14:00
Volume	1	58	11	4	12	1		1	1					83

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	93	↔ 11%	85	↔ 10%	82	↔ 10%	565	↔ 68%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Baldwin Rd Bet. Zacharias Rd & SR-33

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_010

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	13
01:00	0	7	2	0	1	2	0	0	0	0	0	0	0	12
02:00	0	5	0	0	1	1	0	0	0	0	0	0	0	7
03:00	0	10	3	0	1	2	0	0	0	0	0	0	0	16
04:00	0	20	2	0	1	3	0	0	0	0	0	0	0	26
05:00	0	34	10	0	5	5	0	0	0	0	0	0	0	54
06:00	1	51	15	1	3	4	0	0	0	0	0	0	0	75
07:00	2	97	12	0	9	3	0	0	0	0	0	0	0	123
08:00	0	51	15	0	4	1	0	1	0	0	0	0	0	72
09:00	1	47	12	0	9	3	0	0	0	0	0	0	0	72
10:00	1	45	12	1	5	0	0	0	0	0	0	0	0	64
11:00	0	41	8	1	7	0	0	0	0	0	0	0	0	57
12:00 PM	3	60	15	1	7	2	0	0	1	0	0	0	0	89
13:00	2	48	14	1	15	0	0	0	0	0	0	0	0	80
14:00	7	73	13	2	10	1	0	0	0	0	0	0	0	106
15:00	4	67	10	0	13	0	0	1	0	0	0	0	0	95
16:00	5	80	17	0	6	0	0	0	1	0	0	0	0	109
17:00	4	100	13	1	16	0	0	0	0	0	0	0	0	134
18:00	1	72	10	0	7	0	0	0	0	0	0	0	0	90
19:00	1	44	6	0	3	0	0	0	2	0	0	0	0	56
20:00	0	34	5	0	4	0	0	0	0	0	0	0	0	43
21:00	0	42	5	0	1	0	0	0	0	0	0	0	0	48
22:00	0	16	2	0	2	0	0	0	0	0	0	0	0	20
23:00	0	24	1	0	0	0	0	0	0	0	0	0	0	25
Totals	32	1079	204	8	130	27		2	4					1486
% of Totals	2%	73%	14%	1%	9%	2%		0%	0%					100%

AM Volumes	5	419	93	3	46	24	0	1	0	0	0	0	0	591
% AM	0%	28%	6%	0%	3%	2%		0%						40%
AM Peak Hour	07:00	07:00	06:00	06:00	07:00	05:00		08:00						07:00
Volume	2	97	15	1	9	5		1						123
PM Volumes	27	660	111	5	84	3	0	1	4	0	0	0	0	895
% PM	2%	44%	7%	0%	6%	0%		0%	0%					60%
PM Peak Hour	14:00	17:00	16:00	14:00	17:00	12:00		15:00	19:00					17:00
Volume	7	100	17	2	16	2		1	2					134
Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes							
All Classes	Volume		%	Volume		%	Volume		%	Volume		%		
	195	↔	13%	169	↔	11%	243	↔	16%	879	↔	59%		

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

DAILY TOTALS					NB	SB	EB	WB	To		
					1,147	1,165	0	0	2,3		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	11	8	0	0	19	12:00	17	15	0	0	32
00:15	3	3	0	0	6	12:15	13	7	0	0	20
00:30	2	4	0	0	6	12:30	23	15	0	0	38
00:45	3	19	2	17	5	12:45	20	73	10	47	30
01:00	1	1	0	0	2	13:00	24	12	0	0	36
01:15	1	3	0	0	4	13:15	17	12	0	0	29
01:30	0	1	0	0	1	13:30	31	12	0	0	43
01:45	2	4	3	8	5	13:45	18	90	15	51	33
02:00	0	3	0	0	3	14:00	39	10	0	0	49
02:15	4	6	0	0	10	14:15	17	17	0	0	34
02:30	6	9	0	0	15	14:30	69	18	0	0	87
02:45	0	10	8	26	8	14:45	35	160	13	58	48
03:00	1	2	0	0	3	15:00	13	19	0	0	32
03:15	1	2	0	0	3	15:15	24	11	0	0	35
03:30	2	12	0	0	14	15:30	21	6	0	0	27
03:45	2	6	16	32	18	15:45	23	81	9	45	32
04:00	0	3	0	0	3	16:00	27	13	0	0	40
04:15	4	10	0	0	14	16:15	15	16	0	0	31
04:30	7	22	0	0	29	16:30	31	15	0	0	46
04:45	9	20	36	71	45	16:45	12	85	15	59	27
05:00	7	23	0	0	30	17:00	21	24	0	0	45
05:15	12	25	0	0	37	17:15	13	26	0	0	39
05:30	5	36	0	0	41	17:30	26	25	0	0	51
05:45	10	34	52	136	62	17:45	14	74	21	96	35
06:00	7	16	0	0	23	18:00	22	9	0	0	31
06:15	6	21	0	0	27	18:15	12	9	0	0	21
06:30	21	22	0	0	43	18:30	18	7	0	0	25
06:45	11	45	46	105	57	18:45	12	64	12	37	24
07:00	9	13	0	0	22	19:00	10	12	0	0	22
07:15	15	16	0	0	31	19:15	14	6	0	0	20
07:30	13	15	0	0	28	19:30	39	11	0	0	50
07:45	16	53	19	63	35	19:45	17	80	7	36	24
08:00	15	16	0	0	31	20:00	11	6	0	0	17
08:15	9	11	0	0	20	20:15	7	4	0	0	11
08:30	12	8	0	0	20	20:30	13	9	0	0	22
08:45	9	45	22	57	31	20:45	13	44	5	24	18
09:00	10	13	0	0	23	21:00	3	2	0	0	5
09:15	13	13	0	0	26	21:15	5	4	0	0	9
09:30	6	18	0	0	24	21:30	3	6	0	0	9
09:45	8	37	8	52	16	21:45	2	13	2	14	4
10:00	13	6	0	0	19	22:00	5	2	0	0	7
10:15	8	8	0	0	16	22:15	3	2	0	0	5
10:30	8	14	0	0	22	22:30	7	4	0	0	11
10:45	11	40	11	39	22	22:45	4	19	4	12	8
11:00	7	15	0	0	22	23:00	5	2	0	0	7
11:15	14	4	0	0	18	23:15	1	1	0	0	2
11:30	11	26	0	0	37	23:30	3	1	0	0	4
11:45	8	40	25	70	33	23:45	2	11	6	10	8
TOTALS	353	676			1029	TOTALS	794	489			
SPLIT %	34.3%	65.7%			44.5%	SPLIT %	61.9%	38.1%			

DAILY TOTALS					NB	SB	EB	WB	To
					1,147	1,165	0	0	2,3

AM Peak Hour	11:45	05:00		05:00	PM Peak Hour	14:00	17:00			
AM Pk Volume	61	136		170	PM Pk Volume	160	96			
Pk Hr Factor	0.663	0.654		0.685	Pk Hr Factor	0.580	0.923			
7 - 9 Volume	98	120	0	0	218	4 - 6 Volume	159	155	0	0
7 - 9 Peak Hour	07:15	07:15		07:15	4 - 6 Peak Hour	16:00	17:00			
7 - 9 Pk Volume	59	66	0	0	125	4 - 6 Pk Volume	85	96	0	0
Pk Hr Factor	0.922	0.868	0.000	0.000	0.893	Pk Hr Factor	0.685	0.923	0.000	0.000

CLASSIFICATION

SR-33 Bet. Baldwin Rd & Zacharias Rd

Day: Wednesday

Date: 5/30/2018

City: Patterson

Project #: CA18_7213_013

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	19	3	0	4	0	0	2	0	0	0	0	0	28
01:00	0	21	2	0	2	2	0	3	0	0	0	0	0	30
02:00	0	32	3	0	4	2	0	1	1	0	0	0	0	43
03:00	0	87	17	0	12	1	0	1	0	0	0	0	0	118
04:00	0	138	24	0	44	3	1	2	1	0	0	0	0	213
05:00	2	266	62	2	69	0	0	2	1	0	2	0	0	406
06:00	0	233	53	10	54	2	0	9	0	0	3	0	0	364
07:00	0	351	49	5	68	1	0	6	1	0	3	0	0	484
08:00	0	204	46	9	66	3	0	10	0	0	2	0	0	340
09:00	1	208	54	3	62	0	0	7	2	0	3	0	0	340
10:00	0	216	45	4	79	1	0	6	2	0	0	0	0	353
11:00	1	205	53	2	73	2	0	8	2	0	1	0	0	347
12:00 PM	1	298	66	6	78	5	0	9	0	0	0	0	0	463
13:00	2	261	59	7	80	0	0	5	1	0	2	0	0	417
14:00	2	288	73	7	83	1	0	14	1	0	0	0	0	469
15:00	4	382	78	2	82	0	0	10	1	0	0	0	0	559
16:00	1	390	75	2	102	0	0	4	0	0	2	0	0	576
17:00	1	479	73	4	77	1	0	5	1	0	2	0	0	643
18:00	1	384	55	4	53	0	0	5	0	0	0	0	0	502
19:00	0	254	38	2	44	1	0	3	0	0	1	0	0	343
20:00	0	206	26	2	20	0	0	1	1	0	2	0	0	258
21:00	1	182	18	0	14	0	0	5	0	0	0	0	0	220
22:00	0	88	11	0	8	0	0	2	0	0	1	0	0	110
23:00	0	47	9	0	6	0	0	1	0	0	0	0	0	63
Totals	17	5239	992	71	1184	25	1	121	15		24			7689
% of Totals	0%	68%	13%	1%	15%	0%	0%	2%	0%		0%			100%

AM Volumes	4	1980	411	35	537	17	1	57	10	0	14	0	0	3066
% AM	0%	26%	5%	0%	7%	0%	0%	1%	0%		0%			40%
AM Peak Hour	05:00	07:00	05:00	06:00	10:00	04:00	04:00	08:00	09:00		06:00			07:00
Volume	2	351	62	10	79	3	1	10	2		3			484
PM Volumes	13	3259	581	36	647	8	0	64	5	0	10	0	0	4623
% PM	0%	42%	8%	0%	8%	0%		1%	0%		0%			60%
PM Peak Hour	15:00	17:00	15:00	13:00	16:00	12:00		14:00	13:00		13:00			17:00
Volume	4	479	78	7	102	5		14	1		2			643

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	824	↔ 11%	880	↔ 11%	1219	↔ 16%	4766	↔ 62%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

TRAFFIC IMPACT STUDY FOR PROPOSED ZACHARIAS AND BALDWIN MASTER PLAN IN PATTERSON,
CALIFORNIA

Appendix B Intersection LOS Analysis: Existing Conditions LOS Calculation Sheets
February 7, 2020

**Appendix B INTERSECTION LOS ANALYSIS: EXISTING CONDITIONS
LOS CALCULATION SHEETS**

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↶			↷						↷	
Traffic Vol, veh/h	0	116	2	69	31	0	0	0	0	138	1	15
Future Vol, veh/h	0	116	2	69	31	0	0	0	0	138	1	15
Conflicting Peds, #/hr	0	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	76	76	76	25	25	25	88	88	88
Heavy Vehicles, %	0	1	50	22	17	0	0	0	0	23	25	17
Mvmt Flow	0	171	3	91	41	0	0	0	0	157	1	17

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	174	0	0		396	397	41
Stage 1	-	-	-	-	-	-		223	223	-
Stage 2	-	-	-	-	-	-		173	174	-
Critical Hdwy	-	-	-	4.32	-	-		6.63	6.75	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-		5.63	5.75	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.63	5.75	-
Follow-up Hdwy	-	-	-	2.398	-	-		3.707	4.225	3.453
Pot Cap-1 Maneuver	0	-	-	1290	-	0		570	506	989
Stage 1	0	-	-	-	-	0		767	678	-
Stage 2	0	-	-	-	-	0		809	713	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	1290	-	-		529	0	989
Mov Cap-2 Maneuver	-	-	-	-	-	-		529	0	-
Stage 1	-	-	-	-	-	-		767	0	-
Stage 2	-	-	-	-	-	-		751	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	5.5	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1290	-	554
HCM Lane V/C Ratio	-	-	0.07	-	0.316
HCM Control Delay (s)	-	-	8	0	14.5
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.2	-	1.3

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	51	203	0	0	98	418	2	1	66	0	0	0
Future Vol, veh/h	51	203	0	0	98	418	2	1	66	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	90	90	90	82	82	82	25	25	25
Heavy Vehicles, %	0	16	0	0	22	10	0	0	16	0	0	0
Mvmt Flow	61	242	0	0	109	464	2	1	80	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	573	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	1010	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1010	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	1.8	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	742	1010	-	-	-
HCM Lane V/C Ratio	0.113	0.06	-	-	-
HCM Control Delay (s)	10.5	8.8	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0.2	-	-	-

HCM 2010 Signalized Intersection Summary
3: Sperry Ave & Rogers Rd

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	106	163	398	150	90	118		
Future Volume (veh/h)	106	163	398	150	90	118		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1557	1652	1845	1827	1759		
Adj Flow Rate, veh/h	122	187	433	163	112	148		
Adj No. of Lanes	1	1	1	1	1	2		
Peak Hour Factor	0.87	0.87	0.92	0.92	0.80	0.80		
Percent Heavy Veh, %	9	22	15	3	4	8		
Cap, veh/h	173	927	574	544	222	336		
Arrive On Green	0.10	0.60	0.35	0.35	0.13	0.13		
Sat Flow, veh/h	1660	1557	1652	1566	1740	2632		
Grp Volume(v), veh/h	122	187	433	163	112	148		
Grp Sat Flow(s),veh/h/ln	1660	1557	1652	1566	1740	1316		
Q Serve(g_s), s	3.2	2.5	10.5	3.4	2.7	2.3		
Cycle Q Clear(g_c), s	3.2	2.5	10.5	3.4	2.7	2.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	173	927	574	544	222	336		
V/C Ratio(X)	0.71	0.20	0.75	0.30	0.50	0.44		
Avail Cap(c_a), veh/h	956	1586	1683	1595	1002	1515		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.6	4.2	13.0	10.7	18.4	18.2		
Incr Delay (d2), s/veh	5.2	0.2	2.0	0.3	1.8	0.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.7	1.1	5.0	3.4	1.4	1.8		
LnGrp Delay(d),s/veh	24.8	4.4	15.1	11.0	20.1	19.1		
LnGrp LOS	C	A	B	B	C	B		
Approach Vol, veh/h		309	596		260			
Approach Delay, s/veh		12.5	14.0		19.5			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		33.4		11.8	11.2	22.2		
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		
Max Green Setting (Gmax), s		46.0		26.0	26.0	46.0		
Max Q Clear Time (g_c+I1), s		4.5		4.7	5.2	12.5		
Green Ext Time (p_c), s		2.1		0.9	0.3	3.2		
Intersection Summary								
HCM 2010 Ctrl Delay			14.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↘		↖↗	↖↗	↖				↖		↖
Traffic Volume (veh/h)	66	162	0	1	379	15	0	0	0	14	0	76
Future Volume (veh/h)	66	162	0	1	379	15	0	0	0	14	0	76
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	75	184	0	1	480	19				16	0	84
Adj No. of Lanes	2	1	0	2	2	1				1	0	1
Peak Hour Factor	0.88	0.88	0.88	0.79	0.79	0.79				0.90	0.90	0.90
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	192	762	0	10	1215	436				199	0	138
Arrive On Green	0.09	0.44	0.00	0.00	0.35	0.35				0.14	0.00	0.14
Sat Flow, veh/h	2167	1743	0	3510	3471	1245				1403	0	973
Grp Volume(v), veh/h	75	184	0	1	480	19				16	0	84
Grp Sat Flow(s),veh/h/ln	1083	1743	0	1755	1736	1245				1403	0	973
Q Serve(g_s), s	1.1	2.3	0.0	0.0	3.7	0.4				0.3	0.0	2.8
Cycle Q Clear(g_c), s	1.1	2.3	0.0	0.0	3.7	0.4				0.3	0.0	2.8
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	192	762	0	10	1215	436				199	0	138
V/C Ratio(X)	0.39	0.24	0.00	0.10	0.39	0.04				0.08	0.00	0.61
Avail Cap(c_a), veh/h	1915	2485	0	3103	4949	1775				1320	0	915
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	6.2	0.0	17.5	8.6	7.5				13.1	0.0	14.1
Incr Delay (d2), s/veh	1.3	0.3	0.0	4.3	0.4	0.1				0.2	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.2	0.0	0.0	1.8	0.3				0.1	0.0	1.7
LnGrp Delay(d),s/veh	16.4	6.6	0.0	21.7	9.0	7.6				13.2	0.0	18.4
LnGrp LOS	B	A		C	A	A				B		B
Approach Vol, veh/h		259			500						100	
Approach Delay, s/veh		9.4			9.0						17.6	
Approach LOS		A			A						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	4.6	21.0		9.5	7.6	18.0						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	31.0	50.0		33.0	31.0	50.0						
Max Q Clear Time (g_c+I), s	12.0	4.3		4.8	3.1	5.7						
Green Ext Time (p_c), s	0.0	2.1		0.3	0.2	6.6						
Intersection Summary												
HCM 2010 Ctrl Delay			10.1									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	32	151	17	10	315	83	60	88	20	54	39	93
Future Volume (veh/h)	32	151	17	10	315	83	60	88	20	54	39	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1834	1900	1900	1792	1863	1900	1810	1900	1827	1874	1900
Adj Flow Rate, veh/h	37	176	20	13	409	108	76	111	25	69	50	119
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.86	0.86	0.86	0.77	0.77	0.77	0.79	0.79	0.79	0.78	0.78	0.78
Percent Heavy Veh, %	6	4	4	0	6	2	0	5	5	4	0	0
Cap, veh/h	159	615	70	36	633	559	141	230	52	248	77	184
Arrive On Green	0.05	0.38	0.38	0.02	0.35	0.35	0.08	0.16	0.16	0.07	0.16	0.16
Sat Flow, veh/h	3312	1614	183	1810	1792	1583	1810	1430	322	3375	493	1173
Grp Volume(v), veh/h	37	0	196	13	409	108	76	0	136	69	0	169
Grp Sat Flow(s),veh/h/ln1656	0	1797	1810	1792	1583	1810	0	1753	1688	0	1667	
Q Serve(g_s), s	0.5	0.0	3.8	0.4	9.7	2.4	2.1	0.0	3.6	1.0	0.0	4.8
Cycle Q Clear(g_c), s	0.5	0.0	3.8	0.4	9.7	2.4	2.1	0.0	3.6	1.0	0.0	4.8
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.18	1.00		0.70
Lane Grp Cap(c), veh/h	159	0	685	36	633	559	141	0	282	248	0	261
V/C Ratio(X)	0.23	0.00	0.29	0.36	0.65	0.19	0.54	0.00	0.48	0.28	0.00	0.65
Avail Cap(c_a), veh/h	1696	0	1699	748	1695	1497	748	0	1139	1396	0	1083
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	10.9	24.6	13.8	11.4	22.5	0.0	19.4	22.2	0.0	20.1
Incr Delay (d2), s/veh	0.3	0.0	0.5	12.7	2.4	0.4	1.2	0.0	1.3	0.2	0.0	2.7
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/ln0.3	0.0	0.0	2.0	0.3	5.2	1.1	1.1	0.0	1.8	0.5	0.0	2.4
LnGrp Delay(d),s/veh	23.5	0.0	11.4	37.2	16.1	11.8	23.7	0.0	20.7	22.5	0.0	22.8
LnGrp LOS	C		B	D	B	B	C		C	C		C
Approach Vol, veh/h		233			530			212			238	
Approach Delay, s/veh		13.3			15.8			21.8			22.7	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s5.2	24.9	8.1	12.6	6.6	23.4	7.9	12.8					
Change Period (Y+Rc), s4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6					
Max Green Setting (Gmax)21s	48.0	* 21	33.0	* 26	48.0	* 21	33.0					
Max Q Clear Time (g_c+1)12.4s	5.8	4.1	6.8	2.5	11.7	3.0	5.6					
Green Ext Time (p_c), s	0.0	2.2	0.1	1.0	0.0	6.2	0.1	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			17.7									
HCM 2010 LOS			B									
Notes												

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

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	42	356	17	29	387	40	41	94	57	80	81	105
Future Volume (veh/h)	42	356	17	29	387	40	41	94	57	80	81	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	51	434	21	37	496	51	72	165	100	136	137	178
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.82	0.82	0.82	0.78	0.78	0.78	0.57	0.57	0.57	0.59	0.59	0.59
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	107	950	46	83	844	87	301	342	207	346	234	305
Arrive On Green	0.06	0.28	0.28	0.05	0.27	0.27	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	3395	164	1757	3153	323	1057	1091	661	1117	749	973
Grp Volume(v), veh/h	51	223	232	37	270	277	72	0	265	136	0	315
Grp Sat Flow(s),veh/h/ln	1810	1750	1808	1757	1722	1754	1057	0	1752	1117	0	1722
Q Serve(g_s), s	1.5	5.7	5.7	1.1	7.4	7.4	3.3	0.0	6.6	6.1	0.0	8.3
Cycle Q Clear(g_c), s	1.5	5.7	5.7	1.1	7.4	7.4	11.7	0.0	6.6	12.7	0.0	8.3
Prop In Lane	1.00		0.09	1.00		0.18	1.00		0.38	1.00		0.57
Lane Grp Cap(c), veh/h	107	490	506	83	461	470	301	0	548	346	0	539
V/C Ratio(X)	0.47	0.46	0.46	0.45	0.59	0.59	0.24	0.00	0.48	0.39	0.00	0.58
Avail Cap(c_a), veh/h	1069	1163	1201	1037	1144	1165	478	0	840	532	0	826
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.7	16.1	16.1	25.1	17.2	17.3	20.5	0.0	15.1	20.2	0.0	15.6
Incr Delay (d2), s/veh	3.2	0.9	0.9	3.7	1.7	1.7	0.4	0.0	0.7	0.7	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.9	3.0	0.6	3.7	3.8	1.0	0.0	3.3	1.9	0.0	4.1
LnGrp Delay(d),s/veh	27.9	17.1	17.0	28.8	18.9	18.9	21.0	0.0	15.7	20.9	0.0	16.7
LnGrp LOS	C	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		506			584			337			451	
Approach Delay, s/veh		18.1			19.6			16.8			17.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	21.7		23.5	9.7	21.0		23.5				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	32.0	36.0		26.0	32.0	36.0		26.0				
Max Q Clear Time (g_c+1), s	13.5	7.7		14.7	3.5	9.4		13.7				
Green Ext Time (p_c), s	0.1	3.8		2.0	0.1	4.8		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			18.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	71	317	11	74	275	69	19	93	97	102	84	27
Future Volume (veh/h)	71	317	11	74	275	69	19	93	97	102	84	27
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1814	1900	1792	1827	1845	1900	1827	1900	1900	1863	1776
Adj Flow Rate, veh/h	92	412	14	85	316	79	33	163	170	155	127	41
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.77	0.77	0.77	0.87	0.87	0.87	0.57	0.57	0.57	0.66	0.66	0.66
Percent Heavy Veh, %	0	4	4	6	4	3	0	4	4	0	2	7
Cap, veh/h	133	699	24	121	655	291	74	226	236	201	645	514
Arrive On Green	0.07	0.21	0.21	0.07	0.19	0.19	0.04	0.28	0.28	0.11	0.35	0.35
Sat Flow, veh/h	1810	3398	115	1707	3471	1545	1810	820	855	1810	1863	1484
Grp Volume(v), veh/h	92	208	218	85	316	79	33	0	333	155	127	41
Grp Sat Flow(s),veh/h/ln	1810	1723	1791	1707	1736	1545	1810	0	1675	1810	1863	1484
Q Serve(g_s), s	3.3	7.4	7.4	3.3	5.5	2.9	1.2	0.0	12.1	5.6	3.2	1.2
Cycle Q Clear(g_c), s	3.3	7.4	7.4	3.3	5.5	2.9	1.2	0.0	12.1	5.6	3.2	1.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	133	355	368	121	655	291	74	0	462	201	645	514
V/C Ratio(X)	0.69	0.59	0.59	0.70	0.48	0.27	0.44	0.00	0.72	0.77	0.20	0.08
Avail Cap(c_a), veh/h	538	769	799	508	1652	735	565	0	847	565	720	574
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	24.1	24.1	30.5	24.3	23.3	31.5	0.0	22.0	29.0	15.4	14.8
Incr Delay (d2), s/veh	6.4	3.3	3.2	7.2	1.2	1.1	4.1	0.0	4.5	6.1	0.3	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	1.9	3.8	4.0	1.8	2.7	1.3	0.7	0.0	6.1	3.1	1.7	0.5
LnGrp Delay(d),s/veh	36.8	27.4	27.3	37.7	25.5	24.4	35.6	0.0	26.5	35.2	15.7	14.9
LnGrp LOS	D	C	C	D	C	C	D		C	D	B	B
Approach Vol, veh/h		518			480			366			323	
Approach Delay, s/veh		29.1			27.5			27.3			25.0	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	19.8	7.4	29.3	11.9	18.7	12.1	24.6				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	20.0	30.0	21.0	26.0	20.0	32.0	21.0	34.0				
Max Q Clear Time (g_c+1), s	15.3	9.4	3.2	5.2	5.3	7.5	7.6	14.1				
Green Ext Time (p_c), s	0.1	4.1	0.0	1.4	0.2	4.1	0.3	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay				27.4								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	203	21	6	189	14	56	84	16	4	44	129
Future Volume (veh/h)	149	203	21	6	189	14	56	84	16	4	44	129
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	0.99		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	177	242	25	7	220	16	76	114	22	6	66	193
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.74	0.74	0.74	0.67	0.67	0.67
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	634	1354	139	668	753	689	273	277	45	126	110	305
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1137	3162	324	1127	1759	1609	431	1083	175	14	432	1195
Grp Volume(v), veh/h	177	131	136	7	220	16	212	0	0	265	0	0
Grp Sat Flow(s),veh/h/ln	137	1727	1759	1127	1759	1609	1689	0	0	1640	0	0
Q Serve(g_s), s	3.6	1.4	1.4	0.1	2.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	1.4	1.4	1.6	2.5	0.2	2.9	0.0	0.0	4.3	0.0	0.0
Prop In Lane	1.00		0.18	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	634	739	753	668	753	689	595	0	0	542	0	0
V/C Ratio(X)	0.28	0.18	0.18	0.01	0.29	0.02	0.36	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	1547	2126	2166	1574	2166	1981	1849	0	0	1915	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	5.3	5.3	5.8	5.6	5.0	9.4	0.0	0.0	9.9	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.0	0.5	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.7	0.7	0.0	1.3	0.1	1.5	0.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	8.1	5.6	5.6	5.8	6.1	5.0	9.8	0.0	0.0	10.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A			B		
Approach Vol, veh/h		444			243			212			265	
Approach Delay, s/veh		6.6			6.0			9.8			10.6	
Approach LOS		A			A			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.5		12.6		17.5		12.6				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		37.0		33.0		37.0		33.0				
Max Q Clear Time (g_c+1), s		8.1		4.9		4.5		6.3				
Green Ext Time (p_c), s		4.7		1.4		2.7		1.8				
Intersection Summary												
HCM 2010 Ctrl Delay				8.0								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	11.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	77	90	34	7	26	10	73	227	30	14	128	115
Future Vol, veh/h	77	90	34	7	26	10	73	227	30	14	128	115
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	67	67	67	76	76	76	81	81	81
Heavy Vehicles, %	10	4	0	14	9	8	4	6	12	0	12	10
Mvmt Flow	89	103	39	10	39	15	96	299	39	17	158	142






















Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	731	722	158	774	703	320	158	0	0	338	0	0
Stage 1	192	192	-	511	511	-	-	-	-	-	-	-
Stage 2	539	530	-	263	192	-	-	-	-	-	-	-
Critical Hdwy	7.2	6.54	6.2	7.24	6.59	6.28	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.59	4.036	3.3	3.626	4.081	3.372	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	327	351	893	301	353	707	1409	-	-	1232	-	0
Stage 1	792	738	-	524	526	-	-	-	-	-	-	0
Stage 2	512	523	-	716	729	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	268	317	893	200	318	706	1409	-	-	1232	-	-
Mov Cap-2 Maneuver	268	317	-	200	318	-	-	-	-	-	-	-
Stage 1	725	727	-	480	482	-	-	-	-	-	-	-
Stage 2	422	479	-	578	718	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	37.8		18		1.7		0.8	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1409	-	-	330	283	706	1232	-
HCM Lane V/C Ratio	0.068	-	-	0.7	0.174	0.021	0.014	-
HCM Control Delay (s)	7.7	0	-	37.8	20.4	10.2	8	0
HCM Lane LOS	A	A	-	E	C	B	A	A
HCM 95th %tile Q(veh)	0.2	-	-	5	0.6	0.1	0	-

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

Existing Conditions
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	173	69	165	147	22	56	141	102	23	177	30
Future Volume (veh/h)	30	173	69	165	147	22	56	141	102	23	177	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	36	206	82	214	191	29	70	176	128	32	246	42
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.77	0.77	0.77	0.80	0.80	0.80	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	360	257	102	287	256	39	116	222	162	65	289	49
Arrive On Green	0.20	0.20	0.20	0.16	0.16	0.16	0.07	0.25	0.25	0.04	0.22	0.22
Sat Flow, veh/h	1774	1269	505	1774	1580	240	1587	898	653	1521	1330	227
Grp Volume(v), veh/h	36	0	288	214	0	220	70	0	304	32	0	288
Grp Sat Flow(s),veh/h/ln	1774	0	1774	1774	0	1820	1587	0	1551	1521	0	1557
Q Serve(g_s), s	0.9	0.0	8.2	6.1	0.0	6.1	2.3	0.0	9.7	1.1	0.0	9.4
Cycle Q Clear(g_c), s	0.9	0.0	8.2	6.1	0.0	6.1	2.3	0.0	9.7	1.1	0.0	9.4
Prop In Lane	1.00		0.28	1.00		0.13	1.00		0.42	1.00		0.15
Lane Grp Cap(c), veh/h	360	0	360	287	0	294	116	0	384	65	0	338
V/C Ratio(X)	0.10	0.00	0.80	0.75	0.00	0.75	0.61	0.00	0.79	0.49	0.00	0.85
Avail Cap(c_a), veh/h	938	0	938	972	0	997	630	0	1407	603	0	1411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	20.1	21.2	0.0	21.2	23.8	0.0	18.7	24.8	0.0	19.9
Incr Delay (d2), s/veh	0.0	0.0	1.6	1.5	0.0	1.4	1.9	0.0	1.4	2.2	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	4.2	3.1	0.0	3.2	1.1	0.0	4.3	0.5	0.0	4.2
LnGrp Delay(d),s/veh	17.2	0.0	21.7	22.6	0.0	22.6	25.7	0.0	20.1	26.9	0.0	22.3
LnGrp LOS	B		C	C		C	C		C	C		C
Approach Vol, veh/h		324			434			374			320	
Approach Delay, s/veh		21.2			22.6			21.1			22.8	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	6.3	18.0		13.8	7.9	16.4				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 28	21.0	48.0		29.0	21.0	48.0				
Max Q Clear Time (g_c+I1), s		10.2	3.1	11.7		8.1	4.3	11.4				
Green Ext Time (p_c), s		0.6	0.0	0.3		0.5	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			21.9									
HCM 2010 LOS			C									
Notes												

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

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Conditions
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	279	6	162	331	120	1	128	140	95	160	2
Future Volume (veh/h)	24	279	6	162	331	120	1	128	140	95	160	2
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	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	1777	1900	1845	1743	1900	1827	1614	1900	1743	1880	1900
Adj Flow Rate, veh/h	32	372	8	213	436	158	1	151	165	123	208	3
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.85	0.85	0.85	0.77	0.77	0.77
Percent Heavy Veh, %	0	7	7	3	9	0	4	1	1	9	1	1
Cap, veh/h	341	507	11	440	645	583	334	252	225	328	881	13
Arrive On Green	0.04	0.29	0.29	0.11	0.37	0.37	0.00	0.16	0.16	0.08	0.24	0.24
Sat Flow, veh/h	1810	1733	37	1757	1743	1575	1740	1533	1368	1660	3604	52
Grp Volume(v), veh/h	32	0	380	213	436	158	1	151	165	123	103	108
Grp Sat Flow(s),veh/h/ln	1810	0	1770	1757	1743	1575	1740	1533	1368	1660	1786	1870
Q Serve(g_s), s	0.6	0.0	9.7	3.9	10.6	3.5	0.0	4.6	5.8	2.9	2.3	2.3
Cycle Q Clear(g_c), s	0.6	0.0	9.7	3.9	10.6	3.5	0.0	4.6	5.8	2.9	2.3	2.3
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	341	0	517	440	645	583	334	252	225	328	437	457
V/C Ratio(X)	0.09	0.00	0.73	0.48	0.68	0.27	0.00	0.60	0.73	0.38	0.24	0.24
Avail Cap(c_a), veh/h	1177	0	1410	1325	1735	1568	1197	1008	899	1019	1174	1229
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	16.0	10.6	13.3	11.1	17.5	19.5	19.9	14.5	15.2	15.2
Incr Delay (d2), s/veh	0.0	0.0	0.8	0.3	0.5	0.1	0.0	0.9	1.7	0.3	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	0.3	0.0	4.9	1.9	5.0	1.5	0.0	2.0	2.3	1.3	1.2	1.2
LnGrp Delay(d),s/veh	12.0	0.0	16.8	10.9	13.8	11.2	17.5	20.3	21.7	14.8	15.3	15.3
LnGrp LOS	B		B	B	B	B	B	C	C	B	B	B
Approach Vol, veh/h		412			807			317			334	
Approach Delay, s/veh		16.4			12.5			21.0			15.1	
Approach LOS		B			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	23.2	8.1	13.1	9.7	19.3	4.1	17.2				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	25.0	50.0	25.0	33.0	31.0	40.0	25.0	33.0				
Max Q Clear Time (g_c+I), s	12.6	12.6	4.9	7.8	5.9	11.7	2.0	4.3				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.3	0.0	0.5	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			15.3									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔			↔			↔	↔
Traffic Vol, veh/h	14	37	26	6	22	57	19	172	5	39	187	4
Future Vol, veh/h	14	37	26	6	22	57	19	172	5	39	187	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	71	71	71	77	77	77	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	14	14	14	19	19	19
Mvmt Flow	22	58	41	8	31	80	25	223	6	56	267	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	711	658	267	708	661	226	273	0	0	229	0	0
Stage 1	379	379	-	276	276	-	-	-	-	-	-	-
Stage 2	332	279	-	432	385	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.24	-	-	4.29	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.326	-	-	2.371	-	-
Pot Cap-1 Maneuver	348	384	772	350	383	813	1224	-	-	1245	-	-
Stage 1	643	615	-	730	682	-	-	-	-	-	-	-
Stage 2	681	680	-	602	611	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	276	355	772	274	354	813	1224	-	-	1245	-	-
Mov Cap-2 Maneuver	276	355	-	274	354	-	-	-	-	-	-	-
Stage 1	628	582	-	713	666	-	-	-	-	-	-	-
Stage 2	572	664	-	486	579	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.2		13.3		0.8		1.4	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1224	-	-	329	772	551	1245	-	-
HCM Lane V/C Ratio	0.02	-	-	0.242	0.053	0.217	0.045	-	-
HCM Control Delay (s)	8	0	-	19.4	9.9	13.3	8	0	-
HCM Lane LOS	A	A	-	C	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.2	0.8	0.1	-	-

HCM 2010 TWSC
 13: Park Center Dr & Keystone Pacific Pkwy

Existing Conditions
 Timing Plan: AM Peak

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷			↕	
Traffic Vol, veh/h	2	23	12	8	42	5	15	1	5	2	1	0
Future Vol, veh/h	2	23	12	8	42	5	15	1	5	2	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	69	69	69	58	58	58	75	75	75
Heavy Vehicles, %	0	0	42	25	10	0	53	0	40	0	100	0
Mvmt Flow	3	32	17	12	61	7	26	2	9	3	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	49	0	0	136	139	42	142	144	65
Stage 1	-	-	-	-	-	-	47	47	-	89	89	-
Stage 2	-	-	-	-	-	-	89	92	-	53	55	-
Critical Hdwy	4.1	-	-	4.35	-	-	7.63	6.5	6.6	7.1	7.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.63	5.5	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.63	5.5	-	6.1	6.5	-
Follow-up Hdwy	2.2	-	-	2.425	-	-	3.977	4	3.66	3.5	4.9	3.3
Pot Cap-1 Maneuver	1546	-	-	1422	-	-	731	756	930	832	599	1005
Stage 1	-	-	-	-	-	-	852	860	-	923	664	-
Stage 2	-	-	-	-	-	-	807	823	-	965	690	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1422	-	-	724	748	929	815	593	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	724	748	-	815	593	-
Stage 1	-	-	-	-	-	-	850	858	-	921	659	-
Stage 2	-	-	-	-	-	-	799	816	-	951	689	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.1	9.9	10
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	724	893	1546	-	-	1422	-	-	725
HCM Lane V/C Ratio	0.036	0.012	0.002	-	-	0.008	-	-	0.006
HCM Control Delay (s)	10.2	9.1	7.3	-	-	7.6	-	-	10
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕		↕		↕	↕	↕	↕	
Traffic Vol, veh/h	0	0	0	16	0	14	0	44	28	32	15	0
Future Vol, veh/h	0	0	0	16	0	14	0	44	28	32	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	63	63	63	82	82	82	53	53	53
Heavy Vehicles, %	2	2	2	44	0	14	0	2	25	9	7	0
Mvmt Flow	0	0	0	25	0	22	0	54	34	60	28	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	230	236	28	202	-	54	28	0	0	88	0	0
Stage 1	148	148	-	54	-	-	-	-	-	-	-	-
Stage 2	82	88	-	148	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.54	-	6.34	4.1	-	-	4.19	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.896	-	3.426	2.2	-	-	2.281	-	-
Pot Cap-1 Maneuver	725	665	1047	674	0	980	1599	-	-	1465	-	-
Stage 1	855	775	-	862	0	-	-	-	-	-	-	-
Stage 2	926	822	-	764	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	687	638	1047	653	-	980	1599	-	-	1465	-	-
Mov Cap-2 Maneuver	687	638	-	653	-	-	-	-	-	-	-	-
Stage 1	855	743	-	862	-	-	-	-	-	-	-	-
Stage 2	905	822	-	733	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		9.8		0		5.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1599	-	-	-	653	980	1465	-	-
HCM Lane V/C Ratio	-	-	-	-	0.039	0.023	0.041	-	-
HCM Control Delay (s)	0	-	-	0	10.7	8.8	7.6	-	-
HCM Lane LOS	A	-	-	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1	0.1	-	-

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	10	0	7	0	46	7	16	68	1
Future Vol, veh/h	1	0	1	10	0	7	0	46	7	16	68	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	61	61	61	83	83	83	63	63	63
Heavy Vehicles, %	5	5	5	2	2	2	19	19	19	16	16	16
Mvmt Flow	4	0	4	16	0	11	0	55	8	25	108	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	224	222	109	220	219	59	110	0	0	63	0	0
Stage 1	159	159	-	59	59	-	-	-	-	-	-	-
Stage 2	65	63	-	161	160	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.12	6.52	6.22	4.29	-	-	4.26	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.518	4.018	3.318	2.371	-	-	2.344	-	-
Pot Cap-1 Maneuver	725	671	937	736	679	1007	1381	-	-	1455	-	-
Stage 1	836	761	-	953	846	-	-	-	-	-	-	-
Stage 2	938	837	-	841	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	707	659	937	723	667	1007	1381	-	-	1455	-	-
Mov Cap-2 Maneuver	707	659	-	723	667	-	-	-	-	-	-	-
Stage 1	836	747	-	953	846	-	-	-	-	-	-	-
Stage 2	927	837	-	822	752	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.5		9.6		0		1.4	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1381	-	-	806	818	1455	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.034	0.017	-	-
HCM Control Delay (s)	0	-	-	9.5	9.6	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	13	9	27	16	3	1	87	36	2	43	0
Future Vol, veh/h	0	13	9	27	16	3	1	87	36	2	43	0
Peak Hour Factor	0.55	0.55	0.55	0.58	0.58	0.58	0.78	0.78	0.78	0.75	0.75	0.75
Heavy Vehicles, %	5	5	5	2	2	2	5	5	5	18	18	18
Mvmt Flow	0	24	16	47	28	5	1	112	46	3	57	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	8.1	8.1	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	0%	59%	4%
Vol Thru, %	70%	59%	35%	96%
Vol Right, %	29%	41%	7%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	22	46	45
LT Vol	1	0	27	2
Through Vol	87	13	16	43
RT Vol	36	9	3	0
Lane Flow Rate	159	40	79	60
Geometry Grp	1	1	1	1
Degree of Util (X)	0.184	0.048	0.1	0.078
Departure Headway (Hd)	4.169	4.324	4.549	4.655
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	866	830	790	772
Service Time	2.169	2.338	2.563	2.669
HCM Lane V/C Ratio	0.184	0.048	0.1	0.078
HCM Control Delay	8.1	7.6	8.1	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.2	0.3	0.3

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	49	41	291	252	4
Future Vol, veh/h	0	49	41	291	252	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	87	87	77	77
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	0	68	47	334	327	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	758	330	332	0	-	0
Stage 1	330	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	371	705	1153	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	352	705	1153	-	-	-
Mov Cap-2 Maneuver	352	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1153	-	705	-	-
HCM Lane V/C Ratio	0.041	-	0.097	-	-
HCM Control Delay (s)	8.3	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	77	7	3	238	226	93
Future Vol, veh/h	77	7	3	238	226	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	76	76	76	76
Heavy Vehicles, %	8	8	14	14	19	19
Mvmt Flow	95	9	4	313	297	122

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	679	358	419	0	-	0
Stage 1	358	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.24	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.326	-	-	-
Pot Cap-1 Maneuver	408	673	1079	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	406	673	1079	-	-	-
Mov Cap-2 Maneuver	406	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1079	-	420	-	-
HCM Lane V/C Ratio	0.004	-	0.247	-	-
HCM Control Delay (s)	8.3	0	16.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	25	303	15	10	293
Future Vol, veh/h	22	25	303	15	10	293
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	83	83	79	79
Heavy Vehicles, %	29	29	16	16	17	17
Mvmt Flow	26	30	365	18	13	371

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	771	374	0	0	383
Stage 1	374	-	-	-	-
Stage 2	397	-	-	-	-
Critical Hdwy	6.69	6.49	-	-	4.27
Critical Hdwy Stg 1	5.69	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-
Follow-up Hdwy	3.761	3.561	-	-	2.353
Pot Cap-1 Maneuver	333	616	-	-	1098
Stage 1	640	-	-	-	-
Stage 2	624	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	328	616	-	-	1098
Mov Cap-2 Maneuver	328	-	-	-	-
Stage 1	640	-	-	-	-
Stage 2	615	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	437	1098
HCM Lane V/C Ratio	-	-	0.128	0.012
HCM Control Delay (s)	-	-	14.4	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	87	2	1	310	232	42
Future Vol, veh/h	87	2	1	310	232	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	86	86	77	77
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	121	3	1	360	301	55

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	691	329	356	0	-	0
Stage 1	329	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	406	706	1129	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	406	706	1129	-	-	-
Mov Cap-2 Maneuver	406	-	-	-	-	-
Stage 1	721	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1129	-	410	-	-
HCM Lane V/C Ratio	0.001	-	0.301	-	-
HCM Control Delay (s)	8.2	0	17.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.3	-	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	260	66	6	395	50	7
Future Vol, veh/h	260	66	6	395	50	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	79	95	95	84	84
Heavy Vehicles, %	17	17	16	16	19	19
Mvmt Flow	356	84	6	416	60	8

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	440	0	826 398
Stage 1	-	-	-	-	398 -
Stage 2	-	-	-	-	428 -
Critical Hdwy	-	-	4.26	-	6.59 6.39
Critical Hdwy Stg 1	-	-	-	-	5.59 -
Critical Hdwy Stg 2	-	-	-	-	5.59 -
Follow-up Hdwy	-	-	2.344	-	3.671 3.471
Pot Cap-1 Maneuver	-	-	1049	-	320 616
Stage 1	-	-	-	-	643 -
Stage 2	-	-	-	-	623 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1049	-	318 616
Mov Cap-2 Maneuver	-	-	-	-	318 -
Stage 1	-	-	-	-	643 -
Stage 2	-	-	-	-	619 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	338	-	-	1049	-
HCM Lane V/C Ratio	0.201	-	-	0.006	-
HCM Control Delay (s)	18.3	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	10	7	0	20	1	7	27	0	0	36	3
Future Vol, veh/h	4	10	7	0	20	1	7	27	0	0	36	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	77	77	77	75	75	75
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	5	13	9	0	27	1	9	35	0	0	48	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	117	103	50	114	105	35	52	0	0	35	0	0
Stage 1	50	50	-	53	53	-	-	-	-	-	-	-
Stage 2	67	53	-	61	52	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.39	6.79	6.49	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.761	4.261	3.561	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	819	754	970	803	737	966	1554	-	-	1576	-	-
Stage 1	919	819	-	896	800	-	-	-	-	-	-	-
Stage 2	900	817	-	887	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	791	749	970	781	733	966	1554	-	-	1576	-	-
Mov Cap-2 Maneuver	791	749	-	781	733	-	-	-	-	-	-	-
Stage 1	913	819	-	891	795	-	-	-	-	-	-	-
Stage 2	863	812	-	864	801	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	10	1.5	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	820	742	1576	-	-
HCM Lane V/C Ratio	0.006	-	-	0.034	0.038	-	-	-
HCM Control Delay (s)	7.3	0	-	9.5	10	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	9	1	4	0	14	28	1	1	20	1
Future Vol, veh/h	1	1	9	1	4	0	14	28	1	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	39	39	39	42	42	42	72	72	72	69	69	69
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	3	3	23	2	10	0	19	39	1	1	29	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	115	110	30	123	110	40	30	0	0	40	0	0
Stage 1	32	32	-	78	78	-	-	-	-	-	-	-
Stage 2	83	78	-	45	32	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.39	6.79	6.49	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.761	4.261	3.561	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	821	748	995	792	732	959	1583	-	-	1570	-	-
Stage 1	940	834	-	868	780	-	-	-	-	-	-	-
Stage 2	882	796	-	905	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	805	738	995	764	722	959	1583	-	-	1570	-	-
Mov Cap-2 Maneuver	805	738	-	764	722	-	-	-	-	-	-	-
Stage 1	929	833	-	858	771	-	-	-	-	-	-	-
Stage 2	861	786	-	880	817	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	10	2.4	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1583	-	-	945	730	1570	-	-
HCM Lane V/C Ratio	0.012	-	-	0.03	0.016	0.001	-	-
HCM Control Delay (s)	7.3	0	-	8.9	10	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

Existing Conditions
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	331	5	11	403	44	3	31	56	41	27	11
Future Volume (veh/h)	9	331	5	11	403	44	3	31	56	41	27	11
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	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	389	6	13	469	51	3	34	62	54	36	14
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.86	0.86	0.86	0.90	0.90	0.90	0.76	0.76	0.76
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	24	667	10	26	564	61	7	66	121	96	207	81
Arrive On Green	0.01	0.39	0.39	0.02	0.39	0.39	0.00	0.11	0.11	0.05	0.16	0.16
Sat Flow, veh/h	1675	1728	27	1560	1452	158	1774	592	1080	1774	1278	497
Grp Volume(v), veh/h	11	0	395	13	0	520	3	0	96	54	0	50
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1610	1774	0	1672	1774	0	1775
Q Serve(g_s), s	0.3	0.0	8.1	0.4	0.0	13.3	0.1	0.0	2.5	1.4	0.0	1.1
Cycle Q Clear(g_c), s	0.3	0.0	8.1	0.4	0.0	13.3	0.1	0.0	2.5	1.4	0.0	1.1
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.65	1.00		0.28
Lane Grp Cap(c), veh/h	24	0	678	26	0	626	7	0	187	96	0	288
V/C Ratio(X)	0.46	0.00	0.58	0.50	0.00	0.83	0.41	0.00	0.51	0.56	0.00	0.17
Avail Cap(c_a), veh/h	184	0	1049	171	0	963	195	0	853	195	0	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	11.1	22.2	0.0	12.6	22.6	0.0	19.0	21.0	0.0	16.4
Incr Delay (d2), s/veh	13.2	0.0	0.8	14.1	0.0	3.8	33.5	0.0	2.2	5.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	4.0	0.3	0.0	6.4	0.1	0.0	1.2	0.8	0.0	0.6
LnGrp Delay(d),s/veh	35.4	0.0	11.9	36.3	0.0	16.3	56.1	0.0	21.2	26.0	0.0	16.7
LnGrp LOS	D		B	D		B	E		C	C		B
Approach Vol, veh/h		406			533			99			104	
Approach Delay, s/veh		12.5			16.8			22.3			21.5	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	10.9	4.8	23.4	4.2	13.2	4.6	23.5				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.2	5.0	27.2	5.0	23.2	5.0	27.2				
Max Q Clear Time (g_c+I1), s	3.4	4.5	2.4	10.1	2.1	3.1	2.3	15.3				
Green Ext Time (p_c), s	0.0	0.4	0.0	2.0	0.0	0.1	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			16.2									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	412	4	13	431	45	10	10	26	49	5	6
Future Volume (veh/h)	2	412	4	13	431	45	10	10	26	49	5	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	490	5	15	501	52	12	12	32	56	6	7
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.82	0.82	0.82	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	5	715	7	30	624	65	153	56	112	321	31	19
Arrive On Green	0.00	0.41	0.41	0.02	0.43	0.43	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1675	1738	18	1560	1460	152	230	466	927	1102	253	153
Grp Volume(v), veh/h	2	0	495	15	0	553	56	0	0	69	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1756	1560	0	1611	1622	0	0	1508	0	0
Q Serve(g_s), s	0.0	0.0	8.0	0.3	0.0	10.4	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	8.0	0.3	0.0	10.4	1.0	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.21		0.57	0.81		0.10
Lane Grp Cap(c), veh/h	5	0	722	30	0	689	322	0	0	370	0	0
V/C Ratio(X)	0.42	0.00	0.69	0.50	0.00	0.80	0.17	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	241	0	1172	224	0	1075	1098	0	0	1059	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.3	0.0	8.4	16.9	0.0	8.7	13.9	0.0	0.0	14.0	0.0	0.0
Incr Delay (d2), s/veh	48.4	0.0	1.2	12.0	0.0	2.5	0.3	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.1	0.2	0.0	4.9	0.5	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	65.7	0.0	9.6	28.9	0.0	11.1	14.2	0.0	0.0	14.2	0.0	0.0
LnGrp LOS	E		A	C		B	B			B		
Approach Vol, veh/h		497			568			56			69	
Approach Delay, s/veh		9.8			11.6			14.2			14.2	
Approach LOS		A			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		10.0	4.7	20.1		10.0	4.1	20.7				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	23.2		21.2	5.0	23.2				
Max Q Clear Time (g_c+1), s		3.0	2.3	10.0		3.3	2.0	12.4				
Green Ext Time (p_c), s		0.2	0.0	2.3		0.2	0.0	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay				11.1								
HCM 2010 LOS				B								

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	↘
Traffic Vol, veh/h	191	332	352	2	2	89
Future Vol, veh/h	191	332	352	2	2	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	78	78	69	69
Heavy Vehicles, %	11	11	14	14	2	2
Mvmt Flow	217	377	451	3	3	129





















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	454	0	-	0	1264 453
Stage 1	-	-	-	-	453 -
Stage 2	-	-	-	-	811 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1061	-	-	-	187 607
Stage 1	-	-	-	-	640 -
Stage 2	-	-	-	-	437 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1061	-	-	-	149 607
Mov Cap-2 Maneuver	-	-	-	-	149 -
Stage 1	-	-	-	-	509 -
Stage 2	-	-	-	-	437 -

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1061	-	-	-	149	607
HCM Lane V/C Ratio	0.205	-	-	-	0.019	0.212
HCM Control Delay (s)	9.3	-	-	-	29.6	12.5
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.8	-	-	-	0.1	0.8

HCM 2010 Signalized Intersection Summary
 27: Las Palmas Ave & Sperry Ave

Existing Conditions
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	316	57	22	258	34	64	84	26	32	58	133
Future Volume (veh/h)	118	316	57	22	258	34	64	84	26	32	58	133
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1832	1900	1743	1820	1900	1863	1827	1900	1845	1836	1900
Adj Flow Rate, veh/h	144	385	70	28	327	43	98	129	40	50	91	208
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.82	0.82	0.82	0.79	0.79	0.79	0.65	0.65	0.65	0.64	0.64	0.64
Percent Heavy Veh, %	0	4	4	9	5	5	2	4	4	3	0	0
Cap, veh/h	187	750	135	60	576	75	325	367	114	431	127	290
Arrive On Green	0.10	0.26	0.26	0.04	0.19	0.19	0.07	0.28	0.28	0.05	0.26	0.26
Sat Flow, veh/h	1810	2935	528	1660	3063	399	1774	1332	413	1757	496	1133
Grp Volume(v), veh/h	144	227	228	28	183	187	98	0	169	50	0	299
Grp Sat Flow(s),veh/h/ln	1810	1741	1723	1660	1729	1733	1774	0	1745	1757	0	1628
Q Serve(g_s), s	5.5	7.9	8.1	1.2	6.8	7.0	2.8	0.0	5.5	1.4	0.0	11.9
Cycle Q Clear(g_c), s	5.5	7.9	8.1	1.2	6.8	7.0	2.8	0.0	5.5	1.4	0.0	11.9
Prop In Lane	1.00		0.31	1.00		0.23	1.00		0.24	1.00		0.70
Lane Grp Cap(c), veh/h	187	445	440	60	325	326	325	0	480	431	0	417
V/C Ratio(X)	0.77	0.51	0.52	0.47	0.56	0.57	0.30	0.00	0.35	0.12	0.00	0.72
Avail Cap(c_a), veh/h	535	1128	1116	491	1120	1123	721	0	1008	857	0	940
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.0	22.6	22.7	33.6	26.2	26.2	18.0	0.0	20.6	17.6	0.0	24.1
Incr Delay (d2), s/veh	6.6	1.5	1.6	5.7	2.6	2.7	0.5	0.0	0.6	0.1	0.0	3.3
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	3.1	4.0	4.0	0.6	3.5	3.6	1.4	0.0	2.7	0.7	0.0	5.7
LnGrp Delay(d),s/veh	37.6	24.2	24.3	39.2	28.8	28.9	18.6	0.0	21.3	17.7	0.0	27.4
LnGrp LOS	D	C	C	D	C	C	B		C	B		C
Approach Vol, veh/h		599			398			267			349	
Approach Delay, s/veh		27.4			29.6			20.3			26.0	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	24.6	11.6	25.2	14.3	19.9	10.3	26.6				
Change Period (Y+Rc), s	7.0	6.5	6.5	* 7	7.0	6.5	6.5	7.0				
Max Green Setting (Gmax), s	21.0	46.0	21.0	* 41	21.0	46.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	3.2	10.1	4.8	13.9	7.5	9.0	3.4	7.5				
Green Ext Time (p_c), s	0.0	5.0	0.2	2.9	0.3	3.9	0.1	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			26.5									
HCM 2010 LOS			C									
Notes												

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

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	9	506	412	5	7	6
Future Vol, veh/h	9	506	412	5	7	6
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	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	77	77	65	65
Heavy Vehicles, %	0	2	5	20	0	0
Mvmt Flow	9	533	535	6	11	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	541	0	-	0	1089 538
Stage 1	-	-	-	-	538 -
Stage 2	-	-	-	-	551 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1038	-	-	-	241 547
Stage 1	-	-	-	-	589 -
Stage 2	-	-	-	-	581 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1038	-	-	-	238 547
Mov Cap-2 Maneuver	-	-	-	-	238 -
Stage 1	-	-	-	-	582 -
Stage 2	-	-	-	-	581 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1038	-	-	-	238	547
HCM Lane V/C Ratio	0.009	-	-	-	0.045	0.017
HCM Control Delay (s)	8.5	0	-	-	20.8	11.7
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↘	↑↑	↘	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	-	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.13	-	6.63
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.83
Follow-up Hdwy	-	-	2.219	-	3.519
Pot Cap-1 Maneuver	-	0	1621	-	1020
Stage 1	-	0	-	-	1022
Stage 2	-	0	-	-	1022
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1621	-	1020
Mov Cap-2 Maneuver	-	-	-	-	1020
Stage 1	-	-	-	-	1022
Stage 2	-	-	-	-	1022

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

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	-	-	1621	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	0	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Intersection												
Int Delay, s/veh	39.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗			↖						↕	
Traffic Vol, veh/h	0	58	5	80	74	0	0	0	0	499	1	25
Future Vol, veh/h	0	58	5	80	74	0	0	0	0	499	1	25
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	92	92	92	25	25	25	95	95	95
Heavy Vehicles, %	0	4	0	14	0	0	0	0	0	39	4	2
Mvmt Flow	0	69	6	87	80	0	0	0	0	525	1	26

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	75	0	0		326	329	80
Stage 1	-	-	-	-	-	-		254	254	-
Stage 2	-	-	-	-	-	-		72	75	-
Critical Hdwy	-	-	-	4.24	-	-		6.79	6.54	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.79	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.79	5.54	-
Follow-up Hdwy	-	-	-	2.326	-	-		3.851	4.036	3.318
Pot Cap-1 Maneuver	0	-	-	1451	-	0		599	587	980
Stage 1	0	-	-	-	-	0		710	693	-
Stage 2	0	-	-	-	-	0		865	829	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	1451	-	-		561	0	980
Mov Cap-2 Maneuver	-	-	-	-	-	-		561	0	-
Stage 1	-	-	-	-	-	-		710	0	-
Stage 2	-	-	-	-	-	-		811	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4	56.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1451	-	573
HCM Lane V/C Ratio	-	-	0.06	-	0.964
HCM Control Delay (s)	-	-	7.6	0	56.1
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.2	-	13.2

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	15	542	0	0	152	240	2	3	114	0	0	0
Future Vol, veh/h	15	542	0	0	152	240	2	3	114	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	94	94	94	90	90	90	25	25	25
Heavy Vehicles, %	10	8	0	0	10	21	0	50	20	0	0	0
Mvmt Flow	16	571	0	0	162	255	2	3	127	0	0	0















Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	417	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.2	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.29	-	-
Pot Cap-1 Maneuver	1100	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1100	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	483	1100	-	-	-
HCM Lane V/C Ratio	0.274	0.014	-	-	-
HCM Control Delay (s)	15.2	8.3	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	1.1	0	-	-	-

HCM 2010 Signalized Intersection Summary
3: Sperry Ave & Rogers Rd

Existing Conditions
Timing Plan: PM Peak

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	124	525	221	118	139	150		
Future Volume (veh/h)	124	525	221	118	139	150		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1727	1610	1863	1881	1667		
Adj Flow Rate, veh/h	133	565	251	134	153	165		
Adj No. of Lanes	1	1	1	1	1	2		
Peak Hour Factor	0.93	0.93	0.88	0.88	0.91	0.91		
Percent Heavy Veh, %	9	10	18	2	1	14		
Cap, veh/h	196	906	385	379	274	382		
Arrive On Green	0.12	0.52	0.24	0.24	0.15	0.15		
Sat Flow, veh/h	1660	1727	1610	1583	1792	2493		
Grp Volume(v), veh/h	133	565	251	134	153	165		
Grp Sat Flow(s),veh/h/ln	1660	1727	1610	1583	1792	1247		
Q Serve(g_s), s	3.0	9.0	5.4	2.7	3.1	2.3		
Cycle Q Clear(g_c), s	3.0	9.0	5.4	2.7	3.1	2.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	196	906	385	379	274	382		
V/C Ratio(X)	0.68	0.62	0.65	0.35	0.56	0.43		
Avail Cap(c_a), veh/h	1113	2049	1910	1878	1201	1671		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.4	6.5	13.3	12.3	15.2	14.9		
Incr Delay (d2), s/veh	4.1	1.5	1.9	0.6	1.8	0.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.6	4.6	2.6	2.6	1.6	1.7		
LnGrp Delay(d),s/veh	20.5	8.0	15.2	12.8	17.0	15.7		
LnGrp LOS	C	A	B	B	B	B		
Approach Vol, veh/h		698	385		318			
Approach Delay, s/veh		10.4	14.3		16.3			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		26.8		11.9	11.1	15.8		
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		
Max Green Setting (Gmax), s		46.0		26.0	26.0	46.0		
Max Q Clear Time (g_c+I1), s		11.0		5.1	5.0	7.4		
Green Ext Time (p_c), s		7.7		1.1	0.3	1.8		
Intersection Summary								
HCM 2010 Ctrl Delay			12.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↘		↖↗	↕↕	↗				↖		↗
Traffic Volume (veh/h)	123	515	0	4	250	70	0	0	0	61	0	74
Future Volume (veh/h)	123	515	0	4	250	70	0	0	0	61	0	74
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	131	548	0	4	278	78				95	0	116
Adj No. of Lanes	2	1	0	2	2	1				1	0	1
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90				0.64	0.64	0.64
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	242	819	0	23	1265	464				244	0	169
Arrive On Green	0.11	0.47	0.00	0.01	0.36	0.36				0.17	0.00	0.17
Sat Flow, veh/h	2167	1743	0	3510	3471	1272				1403	0	973
Grp Volume(v), veh/h	131	548	0	4	278	78				95	0	116
Grp Sat Flow(s),veh/h/ln1083	1743	0	1755	1736	1272					1403	0	973
Q Serve(g_s), s	2.4	10.2	0.0	0.0	2.3	1.7				2.5	0.0	4.7
Cycle Q Clear(g_c), s	2.4	10.2	0.0	0.0	2.3	1.7				2.5	0.0	4.7
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	242	819	0	23	1265	464				244	0	169
V/C Ratio(X)	0.54	0.67	0.00	0.17	0.22	0.17				0.39	0.00	0.68
Avail Cap(c_a), veh/h	1598	2073	0	2588	4128	1512				1101	0	764
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	8.6	0.0	20.8	9.2	9.0				15.4	0.0	16.3
Incr Delay (d2), s/veh	1.9	2.0	0.0	3.6	0.2	0.4				1.0	0.0	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.8	5.3	0.0	0.0	1.2	1.5					1.0	0.0	2.7
LnGrp Delay(d),s/veh	19.5	10.6	0.0	24.3	9.4	9.4				16.4	0.0	21.1
LnGrp LOS	B	B		C	A	A				B		C
Approach Vol, veh/h		679			360						211	
Approach Delay, s/veh		12.4			9.6						19.0	
Approach LOS		B			A						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	4.8	25.5		11.8	9.2	21.0						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	31.0	50.0		33.0	31.0	50.0						
Max Q Clear Time (g_c+I), s	12.0	12.2		6.7	4.4	4.3						
Green Ext Time (p_c), s	0.0	7.5		0.7	0.4	4.2						
Intersection Summary												
HCM 2010 Ctrl Delay				12.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	98	502	55	11	298	57	23	15	12	73	34	56
Future Volume (veh/h)	98	502	55	11	298	57	23	15	12	73	34	56
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		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	1850	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	108	552	60	12	335	64	29	19	15	91	42	70
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.78	0.78	0.78	0.80	0.80	0.80
Percent Heavy Veh, %	1	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	297	744	81	30	706	624	70	127	100	277	110	183
Arrive On Green	0.09	0.45	0.45	0.02	0.39	0.39	0.04	0.13	0.13	0.08	0.17	0.17
Sat Flow, veh/h	3476	1640	178	1660	1827	1615	1810	979	773	3476	642	1070
Grp Volume(v), veh/h	108	0	612	12	335	64	29	0	34	91	0	112
Grp Sat Flow(s),veh/h/ln	1738	0	1818	1660	1827	1615	1810	0	1751	1738	0	1711
Q Serve(g_s), s	1.7	0.0	16.1	0.4	8.0	1.5	0.9	0.0	1.0	1.4	0.0	3.4
Cycle Q Clear(g_c), s	1.7	0.0	16.1	0.4	8.0	1.5	0.9	0.0	1.0	1.4	0.0	3.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.44	1.00		0.63
Lane Grp Cap(c), veh/h	297	0	824	30	706	624	70	0	227	277	0	292
V/C Ratio(X)	0.36	0.00	0.74	0.40	0.47	0.10	0.42	0.00	0.15	0.33	0.00	0.38
Avail Cap(c_a), veh/h	1559	0	1506	601	1513	1337	656	0	997	1259	0	974
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	13.1	28.1	13.4	11.4	27.2	0.0	22.4	25.2	0.0	21.3
Incr Delay (d2), s/veh	0.3	0.0	2.8	17.1	1.1	0.2	1.5	0.0	0.3	0.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	8.6	0.3	4.2	0.7	0.5	0.0	0.5	0.7	0.0	1.7
LnGrp Delay(d),s/veh	25.3	0.0	15.9	45.3	14.4	11.5	28.7	0.0	22.7	25.5	0.0	22.2
LnGrp LOS	C		B	D	B	B	C		C	C		C
Approach Vol, veh/h		720			411			63			203	
Approach Delay, s/veh		17.3			14.9			25.4			23.6	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	31.8	6.4	14.5	9.1	27.9	8.8	12.1				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	48.0	* 21	33.0	* 26	48.0	* 21	33.0					
Max Q Clear Time (g_c+1), s	18.1	2.9	5.4	3.7	10.0	3.4	3.0					
Green Ext Time (p_c), s	0.0	8.2	0.0	0.6	0.2	4.7	0.1	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.9									
HCM 2010 LOS			B									
Notes												

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

HCM 2010 Signalized Intersection Summary
 6: American Eagle Ave & Sperry Ave

Existing Conditions
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	525	32	52	423	56	10	32	22	38	28	35
Future Volume (veh/h)	83	525	32	52	423	56	10	32	22	38	28	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	87	553	34	54	441	58	12	40	28	48	35	44
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.80	0.80	0.80	0.79	0.79	0.79
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	181	1063	65	123	887	116	286	124	87	297	91	115
Arrive On Green	0.10	0.32	0.32	0.07	0.28	0.28	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1810	3360	206	1810	3120	408	1336	1040	728	1349	765	961
Grp Volume(v), veh/h	87	288	299	54	247	252	12	0	68	48	0	79
Grp Sat Flow(s),veh/h/ln	1810	1755	1811	1810	1754	1774	1336	0	1768	1349	0	1726
Q Serve(g_s), s	1.8	5.3	5.3	1.1	4.6	4.7	0.3	0.0	1.4	1.3	0.0	1.7
Cycle Q Clear(g_c), s	1.8	5.3	5.3	1.1	4.6	4.7	2.0	0.0	1.4	2.7	0.0	1.7
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	181	555	573	123	499	504	286	0	211	297	0	206
V/C Ratio(X)	0.48	0.52	0.52	0.44	0.50	0.50	0.04	0.00	0.32	0.16	0.00	0.38
Avail Cap(c_a), veh/h	1473	1608	1659	1473	1607	1625	1010	0	1170	1028	0	1142
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	11.0	11.0	17.6	11.7	11.7	16.9	0.0	15.8	17.1	0.0	16.0
Incr Delay (d2), s/veh	2.0	1.1	1.0	2.4	1.1	1.1	0.1	0.0	0.9	0.3	0.0	1.2
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	0.0	2.6	2.8	0.6	2.3	2.4	0.1	0.0	0.7	0.5	0.0	0.9
LnGrp Delay(d),s/veh	18.7	12.1	12.0	20.0	12.8	12.8	16.9	0.0	16.7	17.3	0.0	17.1
LnGrp LOS	B	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		674			553			80			127	
Approach Delay, s/veh		12.9			13.5			16.8			17.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	18.9		11.2	10.4	17.7		11.2				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	32.0	36.0		26.0	32.0	36.0		26.0				
Max Q Clear Time (g_c+I), s	13.5	7.3		4.7	3.8	6.7		4.0				
Green Ext Time (p_c), s	0.1	5.1		0.5	0.2	4.5		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			13.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	324	42	171	270	84	29	107	82	91	219	34
Future Volume (veh/h)	122	324	42	171	270	84	29	107	82	91	219	34
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1841	1900	1881	1845	1900	1845	1873	1900	1881	1900	1900
Adj Flow Rate, veh/h	126	334	43	186	293	91	35	129	99	105	252	39
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.83	0.83	0.83	0.87	0.87	0.87
Percent Heavy Veh, %	2	3	3	1	3	0	3	1	1	1	0	0
Cap, veh/h	165	604	77	238	762	349	77	223	171	145	504	416
Arrive On Green	0.09	0.19	0.19	0.13	0.22	0.22	0.04	0.23	0.23	0.08	0.27	0.27
Sat Flow, veh/h	1774	3114	397	1792	3505	1604	1757	978	750	1792	1900	1568
Grp Volume(v), veh/h	126	186	191	186	293	91	35	0	228	105	252	39
Grp Sat Flow(s),veh/h/ln	1774	1749	1763	1792	1752	1604	1757	0	1728	1792	1900	1568
Q Serve(g_s), s	4.3	6.0	6.1	6.2	4.4	2.9	1.2	0.0	7.3	3.6	7.0	1.2
Cycle Q Clear(g_c), s	4.3	6.0	6.1	6.2	4.4	2.9	1.2	0.0	7.3	3.6	7.0	1.2
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	165	339	342	238	762	349	77	0	394	145	504	416
V/C Ratio(X)	0.76	0.55	0.56	0.78	0.38	0.26	0.45	0.00	0.58	0.72	0.50	0.09
Avail Cap(c_a), veh/h	572	845	852	577	1807	827	594	0	947	606	796	657
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	22.6	22.6	26.0	20.7	20.1	29.0	0.0	21.3	27.9	19.3	17.2
Incr Delay (d2), s/veh	7.0	2.9	3.0	5.5	0.7	0.8	4.1	0.0	2.9	6.7	1.6	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	2.4	3.1	3.3	3.5	2.2	1.4	0.7	0.0	3.8	2.0	3.9	0.5
LnGrp Delay(d),s/veh	34.5	25.5	25.6	31.6	21.4	21.0	33.1	0.0	24.2	34.6	21.0	17.4
LnGrp LOS	C	C	C	C	C	C	C		C	C	C	B
Approach Vol, veh/h		503			570			263			396	
Approach Delay, s/veh		27.8			24.7			25.3			24.2	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	18.0	7.3	22.5	12.8	19.5	9.6	20.2				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	20.0	30.0	21.0	26.0	20.0	32.0	21.0	34.0				
Max Q Clear Time (g_c+I), s	10.2	8.1	3.2	9.0	6.3	6.4	5.6	9.3				
Green Ext Time (p_c), s	0.4	3.7	0.0	2.5	0.2	3.9	0.2	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay				25.6								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	258	58	19	297	12	35	34	5	3	59	148
Future Volume (veh/h)	144	258	58	19	297	12	35	34	5	3	59	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	150	269	60	21	334	13	47	46	7	3	67	168
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.89	0.89	0.89	0.74	0.74	0.74	0.88	0.88	0.88
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	595	1307	287	667	851	751	293	234	27	119	111	271
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1049	2806	616	1066	1827	1612	539	1024	118	8	488	1189
Grp Volume(v), veh/h	150	163	166	21	334	13	100	0	0	238	0	0
Grp Sat Flow(s),veh/h/ln	1049	1721	1701	1066	1827	1612	1681	0	0	1684	0	0
Q Serve(g_s), s	3.4	1.7	1.8	0.4	3.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.1	1.7	1.8	2.2	3.7	0.1	1.3	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.36	1.00		1.00	0.47		0.07	0.01		0.71
Lane Grp Cap(c), veh/h	595	801	792	667	851	751	554	0	0	501	0	0
V/C Ratio(X)	0.25	0.20	0.21	0.03	0.39	0.02	0.18	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	1357	2051	2028	1442	2178	1921	1764	0	0	1904	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.7	4.9	4.9	5.5	5.4	4.5	9.8	0.0	0.0	10.8	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.0	0.6	0.0	0.2	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.9	0.1	2.0	0.1	0.7	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	8.2	5.2	5.2	5.6	6.0	4.5	9.9	0.0	0.0	11.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A			B		
Approach Vol, veh/h		479			368			100			238	
Approach Delay, s/veh		6.1			6.0			9.9			11.5	
Approach LOS		A			A			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.1		12.0		19.1		12.0				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		37.0		33.0		37.0		33.0				
Max Q Clear Time (g_c+I1), s		9.1		3.3		5.7		5.9				
Green Ext Time (p_c), s		5.3		0.6		4.4		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				7.5								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	14.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	105	72	84	14	50	6	62	150	27	19	238	175
Future Vol, veh/h	105	72	84	14	50	6	62	150	27	19	238	175
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	80	80	80	98	98	98	88	88	88
Heavy Vehicles, %	6	4	6	0	2	0	6	3	7	16	5	4
Mvmt Flow	122	84	98	18	63	8	63	153	28	22	270	199






















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	643	621	270	698	607	167	270	0	0	181	0	0
Stage 1	314	314	-	293	293	-	-	-	-	-	-	-
Stage 2	329	307	-	405	314	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.54	6.26	7.1	6.52	6.2	4.16	-	-	4.26	-	-
Critical Hdwy Stg 1	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.036	3.354	3.5	4.018	3.3	2.254	-	-	2.344	-	-
Pot Cap-1 Maneuver	381	401	759	358	411	882	1271	-	-	1314	-	0
Stage 1	688	653	-	719	670	-	-	-	-	-	-	0
Stage 2	676	657	-	626	656	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	312	371	759	244	381	882	1271	-	-	1314	-	-
Mov Cap-2 Maneuver	312	371	-	244	381	-	-	-	-	-	-	-
Stage 1	650	640	-	679	633	-	-	-	-	-	-	-
Stage 2	571	621	-	465	643	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	35.6		18.1		2.1		0.6	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1271	-	-	407	339	882	1314	-
HCM Lane V/C Ratio	0.05	-	-	0.746	0.236	0.009	0.016	-
HCM Control Delay (s)	8	0	-	35.6	18.9	9.1	7.8	0
HCM Lane LOS	A	A	-	E	C	A	A	A
HCM 95th %tile Q(veh)	0.2	-	-	6	0.9	0	0.1	-

HCM 2010 Signalized Intersection Summary
10: SR-33 & M St/Walnut Ave

Existing Conditions
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	87	57	74	83	12	28	189	62	57	291	13
Future Volume (veh/h)	12	87	57	74	83	12	28	189	62	57	291	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1545	1545	1900	1570	1570	1900
Adj Flow Rate, veh/h	14	102	67	92	104	15	30	205	67	62	316	14
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.80	0.80	0.80	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	23	23	23	21	21	21
Cap, veh/h	277	164	108	286	256	37	61	243	79	106	369	16
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.22	0.22	0.07	0.25	0.25
Sat Flow, veh/h	1774	1051	690	1774	1593	230	1471	1116	365	1495	1492	66
Grp Volume(v), veh/h	14	0	169	92	0	119	30	0	272	62	0	330
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1774	0	1822	1471	0	1480	1495	0	1559
Q Serve(g_s), s	0.3	0.0	4.2	2.1	0.0	2.7	0.9	0.0	8.2	1.9	0.0	9.4
Cycle Q Clear(g_c), s	0.3	0.0	4.2	2.1	0.0	2.7	0.9	0.0	8.2	1.9	0.0	9.4
Prop In Lane	1.00		0.40	1.00		0.13	1.00		0.25	1.00		0.04
Lane Grp Cap(c), veh/h	277	0	272	286	0	293	61	0	323	106	0	386
V/C Ratio(X)	0.05	0.00	0.62	0.32	0.00	0.41	0.49	0.00	0.84	0.58	0.00	0.86
Avail Cap(c_a), veh/h	1070	0	1050	1108	0	1138	665	0	1530	676	0	1611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	18.3	17.2	0.0	17.5	21.8	0.0	17.4	20.9	0.0	16.7
Incr Delay (d2), s/veh	0.0	0.0	0.9	0.2	0.0	0.3	2.3	0.0	2.3	1.9	0.0	2.1
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	0.2	0.0	2.1	1.1	0.0	1.4	0.4	0.0	3.5	0.8	0.0	4.3
LnGrp Delay(d),s/veh	16.7	0.0	19.2	17.5	0.0	17.8	24.0	0.0	19.7	22.8	0.0	18.8
LnGrp LOS	B		B	B		B	C		B	C		B
Approach Vol, veh/h		183			211			302			392	
Approach Delay, s/veh		19.0			17.7			20.2			19.4	
Approach LOS		B			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.4	7.3	15.0		12.7	5.9	16.4				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 28	21.0	48.0		29.0	21.0	48.0				
Max Q Clear Time (g_c+I1), s		6.2	3.9	10.2		4.7	2.9	11.4				
Green Ext Time (p_c), s		0.4	0.0	0.2		0.2	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			19.2									
HCM 2010 LOS			B									
Notes												

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

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Conditions
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	263	9	201	319	69	12	122	163	116	234	3
Future Volume (veh/h)	20	263	9	201	319	69	12	122	163	116	234	3
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	0.99		0.99	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1868	1900	1810	1900	1900	1900	1845	1900	1881	1811	1900
Adj Flow Rate, veh/h	22	292	10	221	351	76	13	134	179	151	304	4
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.77	0.77	0.77
Percent Heavy Veh, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	370	440	15	460	648	538	375	322	284	393	899	12
Arrive On Green	0.03	0.25	0.25	0.12	0.34	0.34	0.02	0.18	0.18	0.09	0.26	0.26
Sat Flow, veh/h	1723	1794	61	1723	1900	1577	1810	1752	1547	1792	3475	46
Grp Volume(v), veh/h	22	0	302	221	351	76	13	134	179	151	150	158
Grp Sat Flow(s),veh/h/ln	1723	0	1855	1723	1900	1577	1810	1752	1547	1792	1720	1801
Q Serve(g_s), s	0.5	0.0	7.2	4.3	7.3	1.6	0.3	3.3	5.2	3.1	3.5	3.5
Cycle Q Clear(g_c), s	0.5	0.0	7.2	4.3	7.3	1.6	0.3	3.3	5.2	3.1	3.5	3.5
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	370	0	455	460	648	538	375	322	284	393	445	466
V/C Ratio(X)	0.06	0.00	0.66	0.48	0.54	0.14	0.03	0.42	0.63	0.38	0.34	0.34
Avail Cap(c_a), veh/h	1203	0	1514	1339	1938	1609	1268	1180	1041	1143	1158	1213
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	16.7	10.9	13.0	11.2	15.8	17.7	18.5	13.3	14.8	14.8
Incr Delay (d2), s/veh	0.0	0.0	0.6	0.3	0.3	0.0	0.0	0.3	0.9	0.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.7	2.0	3.8	0.7	0.1	1.6	2.3	1.5	1.6	1.7
LnGrp Delay(d),s/veh	13.3	0.0	17.3	11.2	13.3	11.2	15.8	18.0	19.3	13.6	14.9	14.9
LnGrp LOS	B		B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		324			648			326			459	
Approach Delay, s/veh		17.0			12.3			18.6			14.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	21.3	8.5	13.9	10.0	16.6	4.8	17.6				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	25.0	50.0	25.0	33.0	31.0	40.0	25.0	33.0				
Max Q Clear Time (g_c+I), s	12.5	9.3	5.1	7.2	6.3	9.2	2.3	5.5				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.3	0.0	0.4	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			14.9									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕			↕			↖	↗
Traffic Vol, veh/h	6	20	20	6	26	30	36	167	4	46	328	12
Future Vol, veh/h	6	20	20	6	26	30	36	167	4	46	328	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	92	92	92	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	23	23	23	21	21	21
Mvmt Flow	7	24	24	7	32	37	39	182	4	51	360	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	759	726	360	755	737	184	373	0	0	186	0	0
Stage 1	462	462	-	262	262	-	-	-	-	-	-	-
Stage 2	297	264	-	493	475	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.33	-	-	4.31	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.407	-	-	2.389	-	-
Pot Cap-1 Maneuver	323	351	684	325	346	858	1079	-	-	1282	-	-
Stage 1	580	565	-	743	691	-	-	-	-	-	-	-
Stage 2	712	690	-	558	557	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	266	320	684	276	316	858	1079	-	-	1282	-	-
Mov Cap-2 Maneuver	266	320	-	276	316	-	-	-	-	-	-	-
Stage 1	557	537	-	713	663	-	-	-	-	-	-	-
Stage 2	623	662	-	488	529	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.8		14.7		1.5		0.9	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1079	-	-	306	684	446	1282	-	-
HCM Lane V/C Ratio	0.036	-	-	0.104	0.036	0.17	0.039	-	-
HCM Control Delay (s)	8.5	0	-	18.1	10.5	14.7	7.9	0	-
HCM Lane LOS	A	A	-	C	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0.6	0.1	-	-

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	1	77	50	29	26	1	29	2	37	0	3	1
Future Vol, veh/h	1	77	50	29	26	1	29	2	37	0	3	1
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	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	50	50	50	37	37	37	50	50	50
Heavy Vehicles, %	100	4	8	0	15	0	3	100	3	0	100	100
Mvmt Flow	1	113	74	58	52	2	78	5	100	0	6	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	187	0	0	325	322	150	374	358	53
Stage 1	-	-	-	-	-	-	152	152	-	169	169	-
Stage 2	-	-	-	-	-	-	173	170	-	205	189	-
Critical Hdwy	5.1	-	-	4.1	-	-	7.13	7.5	6.23	7.1	7.5	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	6.5	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	6.5	-	6.1	6.5	-
Follow-up Hdwy	3.1	-	-	2.2	-	-	3.527	4.9	3.327	3.5	4.9	4.2
Pot Cap-1 Maneuver	1101	-	-	1399	-	-	626	464	894	587	440	795
Stage 1	-	-	-	-	-	-	848	618	-	838	606	-
Stage 2	-	-	-	-	-	-	827	605	-	802	592	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1101	-	-	1399	-	-	598	445	894	500	422	795
Mov Cap-2 Maneuver	-	-	-	-	-	-	598	445	-	500	422	-
Stage 1	-	-	-	-	-	-	847	617	-	837	581	-
Stage 2	-	-	-	-	-	-	783	580	-	705	591	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	4	10.7	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	598	850	1101	-	-	1399	-	-	478
HCM Lane V/C Ratio	0.131	0.124	0.001	-	-	0.041	-	-	0.017
HCM Control Delay (s)	11.9	9.8	8.3	-	-	7.7	-	-	12.7
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.4	0	-	-	0.1	-	-	0.1

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕		↕		↕	↕	↕	↕	
Traffic Vol, veh/h	0	0	0	29	0	68	0	32	33	55	46	0
Future Vol, veh/h	0	0	0	29	0	68	0	32	33	55	46	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	69	69	69	86	86	86	72	72	72
Heavy Vehicles, %	2	2	2	28	0	4	0	22	27	4	13	0
Mvmt Flow	0	0	0	42	0	99	0	37	38	76	64	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	322	291	64	253	-	37	64	0	0	75	0	0
Stage 1	216	216	-	37	-	-	-	-	-	-	-	-
Stage 2	106	75	-	216	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.38	-	6.24	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.38	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.38	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.752	-	3.336	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	631	619	1000	650	0	1030	1551	-	-	1512	-	-
Stage 1	786	724	-	916	0	-	-	-	-	-	-	-
Stage 2	900	833	-	731	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	549	588	1000	625	-	1030	1551	-	-	1512	-	-
Mov Cap-2 Maneuver	549	588	-	625	-	-	-	-	-	-	-	-
Stage 1	786	688	-	916	-	-	-	-	-	-	-	-
Stage 2	814	833	-	694	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		9.6		0		4.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1551	-	-	-	625	1030	1512	-	-
HCM Lane V/C Ratio	-	-	-	-	0.067	0.096	0.051	-	-
HCM Control Delay (s)	0	-	-	0	11.2	8.9	7.5	-	-
HCM Lane LOS	A	-	-	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.3	0.2	-	-

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	0	8	0	16	1	118	10	16	47	0
Future Vol, veh/h	0	1	0	8	0	16	1	118	10	16	47	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	86	86	86	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	8	8	8	18	18	18	16	16	16
Mvmt Flow	0	4	0	9	0	19	1	164	14	22	65	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	292	289	65	284	282	171	65	0	0	178	0	0
Stage 1	109	109	-	173	173	-	-	-	-	-	-	-
Stage 2	183	180	-	111	109	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.18	6.58	6.28	4.28	-	-	4.26	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.572	4.072	3.372	2.362	-	-	2.344	-	-
Pot Cap-1 Maneuver	660	621	999	656	617	857	1441	-	-	1318	-	-
Stage 1	896	805	-	815	744	-	-	-	-	-	-	-
Stage 2	819	750	-	880	794	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	637	610	999	644	606	857	1441	-	-	1318	-	-
Mov Cap-2 Maneuver	637	610	-	644	606	-	-	-	-	-	-	-
Stage 1	895	791	-	814	743	-	-	-	-	-	-	-
Stage 2	800	749	-	861	781	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.9		9.8		0.1		2	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1441	-	-	610	772	1318	-	-
HCM Lane V/C Ratio	0.001	-	-	0.007	0.036	0.017	-	-
HCM Control Delay (s)	7.5	0	-	10.9	9.8	7.8	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	35	8	17	13	1	5	48	14	2	83	0
Future Vol, veh/h	0	35	8	17	13	1	5	48	14	2	83	0
Peak Hour Factor	0.72	0.72	0.72	0.86	0.86	0.86	0.80	0.80	0.80	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	8	8	8	9	9	9	14	14	14
Mvmt Flow	0	49	11	20	15	1	6	60	18	2	90	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	7.8	7.7	8
HCM LOS	A	A	A	A




Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	0%	55%	2%
Vol Thru, %	72%	81%	42%	98%
Vol Right, %	21%	19%	3%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	43	31	85
LT Vol	5	0	17	2
Through Vol	48	35	13	83
RT Vol	14	8	1	0
Lane Flow Rate	84	60	36	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.097	0.071	0.046	0.112
Departure Headway (Hd)	4.179	4.266	4.594	4.373
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	844	784	809
Service Time	2.269	2.267	2.596	2.456
HCM Lane V/C Ratio	0.1	0.071	0.046	0.114
HCM Control Delay	7.7	7.6	7.8	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.1	0.4

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	3	62	20	255	475	6
Future Vol, veh/h	3	62	20	255	475	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	76	76	94	94
Heavy Vehicles, %	2	2	1	11	14	14
Mvmt Flow	4	87	26	336	505	6

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	896	508	511	0	-	0
Stage 1	508	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	311	565	1059	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	565	1059	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	686	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1059	-	543	-	-
HCM Lane V/C Ratio	0.025	-	0.169	-	-
HCM Control Delay (s)	8.5	0	13	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	92	5	4	201	374	132
Future Vol, veh/h	92	5	4	201	374	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	84	84	95	95
Heavy Vehicles, %	9	9	23	23	21	21
Mvmt Flow	130	7	5	239	394	139

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	713	464	533	0	-	0
Stage 1	464	-	-	-	-	-
Stage 2	249	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.33	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.407	-	-	-
Pot Cap-1 Maneuver	388	584	936	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	386	584	936	-	-	-
Mov Cap-2 Maneuver	386	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	776	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	936	-	393	-	-
HCM Lane V/C Ratio	0.005	-	0.348	-	-
HCM Control Delay (s)	8.9	0	19	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.5	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	12	8	266	19	42	490
Future Vol, veh/h	12	8	266	19	42	490
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	71	71	77	77	96	96
Heavy Vehicles, %	9	9	11	11	14	14
Mvmt Flow	17	11	345	25	44	510

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	956	358	0	0	370
Stage 1	358	-	-	-	-
Stage 2	598	-	-	-	-
Critical Hdwy	6.49	6.29	-	-	4.24
Critical Hdwy Stg 1	5.49	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-
Follow-up Hdwy	3.581	3.381	-	-	2.326
Pot Cap-1 Maneuver	278	671	-	-	1125
Stage 1	692	-	-	-	-
Stage 2	536	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	263	671	-	-	1125
Mov Cap-2 Maneuver	263	-	-	-	-
Stage 1	692	-	-	-	-
Stage 2	507	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.3	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	348	1125
HCM Lane V/C Ratio	-	-	0.081	0.039
HCM Control Delay (s)	-	-	16.3	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	43	4	0	243	480	54
Future Vol, veh/h	43	4	0	243	480	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	76	76	88	88
Heavy Vehicles, %	9	9	1	11	14	14
Mvmt Flow	48	4	0	320	545	61

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	896	576	606	0	-	0
Stage 1	576	-	-	-	-	-
Stage 2	320	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.11	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.209	-	-	-
Pot Cap-1 Maneuver	302	504	977	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	504	977	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	721	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	977	-	313	-	-
HCM Lane V/C Ratio	-	-	0.167	-	-
HCM Control Delay (s)	0	-	18.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	522	53	5	284	118	10
Future Vol, veh/h	522	53	5	284	118	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	82	82	80	80
Heavy Vehicles, %	11	11	14	14	18	18
Mvmt Flow	587	60	6	346	148	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	647	0	975 617
Stage 1	-	-	-	-	617 -
Stage 2	-	-	-	-	358 -
Critical Hdwy	-	-	4.24	-	6.58 6.38
Critical Hdwy Stg 1	-	-	-	-	5.58 -
Critical Hdwy Stg 2	-	-	-	-	5.58 -
Follow-up Hdwy	-	-	2.326	-	3.662 3.462
Pot Cap-1 Maneuver	-	-	884	-	261 462
Stage 1	-	-	-	-	509 -
Stage 2	-	-	-	-	673 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	884	-	259 462
Mov Cap-2 Maneuver	-	-	-	-	259 -
Stage 1	-	-	-	-	509 -
Stage 2	-	-	-	-	668 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	36.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	268	-	-	884	-
HCM Lane V/C Ratio	0.597	-	-	0.007	-
HCM Control Delay (s)	36.5	-	-	9.1	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	3.5	-	-	0	-

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	44	6	0	12	1	1	19	2	7	56	3
Future Vol, veh/h	7	44	6	0	12	1	1	19	2	7	56	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	54	54	54	50	50	50	79	79	79
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	9	59	8	0	22	2	2	38	4	9	71	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	147	137	73	169	137	40	75	0	0	42	0	0
Stage 1	91	91	-	44	44	-	-	-	-	-	-	-
Stage 2	56	46	-	125	93	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	808	743	972	779	741	1012	1524	-	-	1567	-	-
Stage 1	902	808	-	953	845	-	-	-	-	-	-	-
Stage 2	941	845	-	862	804	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	784	738	972	722	736	1012	1524	-	-	1567	-	-
Mov Cap-2 Maneuver	784	738	-	722	736	-	-	-	-	-	-	-
Stage 1	901	803	-	952	844	-	-	-	-	-	-	-
Stage 2	914	844	-	788	799	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.2		9.9		0.3		0.8	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	763	752	1567	-	-
HCM Lane V/C Ratio	0.001	-	-	0.1	0.032	0.006	-	-
HCM Control Delay (s)	7.4	0	-	10.2	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	37	2	4	1	7	15	7	3	51	1
Future Vol, veh/h	3	3	37	2	4	1	7	15	7	3	51	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	58	58	58	91	91	91	72	72	72
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	4	4	55	3	7	2	8	16	8	4	71	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	121	120	72	145	116	20	72	0	0	24	0	0
Stage 1	80	80	-	36	36	-	-	-	-	-	-	-
Stage 2	41	40	-	109	80	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	840	759	974	808	761	1038	1528	-	-	1591	-	-
Stage 1	914	817	-	962	851	-	-	-	-	-	-	-
Stage 2	959	850	-	879	815	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	827	753	974	754	755	1038	1528	-	-	1591	-	-
Mov Cap-2 Maneuver	827	753	-	754	755	-	-	-	-	-	-	-
Stage 1	909	815	-	957	847	-	-	-	-	-	-	-
Stage 2	945	846	-	822	813	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		9.7		1.8		0.4	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	943	785	1591	-	-
HCM Lane V/C Ratio	0.005	-	-	0.068	0.015	0.003	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

Existing Conditions
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	384	7	28	425	34	5	26	50	54	26	12
Future Volume (veh/h)	7	384	7	28	425	34	5	26	50	54	26	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	8	422	8	31	467	37	6	33	64	61	29	13
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.78	0.78	0.78	0.89	0.89	0.89
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	17	558	11	61	587	47	14	65	126	107	203	91
Arrive On Green	0.01	0.34	0.34	0.04	0.36	0.36	0.01	0.11	0.11	0.06	0.17	0.17
Sat Flow, veh/h	1616	1659	31	1691	1624	129	1774	568	1101	1774	1220	547
Grp Volume(v), veh/h	8	0	430	31	0	504	6	0	97	61	0	42
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1668	1774	0	1766
Q Serve(g_s), s	0.2	0.0	9.8	0.8	0.0	11.1	0.1	0.0	2.4	1.4	0.0	0.9
Cycle Q Clear(g_c), s	0.2	0.0	9.8	0.8	0.0	11.1	0.1	0.0	2.4	1.4	0.0	0.9
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.31
Lane Grp Cap(c), veh/h	17	0	568	61	0	633	14	0	191	107	0	294
V/C Ratio(X)	0.47	0.00	0.76	0.51	0.00	0.80	0.42	0.00	0.51	0.57	0.00	0.14
Avail Cap(c_a), veh/h	187	0	1064	196	0	1103	205	0	896	205	0	948
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	12.8	20.5	0.0	12.4	21.3	0.0	18.0	19.8	0.0	15.4
Incr Delay (d2), s/veh	18.5	0.0	2.1	6.5	0.0	2.3	18.5	0.0	2.1	4.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	4.9	0.5	0.0	5.7	0.1	0.0	1.2	0.9	0.0	0.4
LnGrp Delay(d),s/veh	39.8	0.0	14.9	26.9	0.0	14.7	39.8	0.0	20.1	24.5	0.0	15.6
LnGrp LOS	D		B	C		B	D		C	C		B
Approach Vol, veh/h		438			535			103			103	
Approach Delay, s/veh		15.3			15.4			21.2			20.9	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	10.7	5.6	20.3	4.3	13.0	4.5	21.4				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.2	5.0	27.2	5.0	23.2	5.0	27.2				
Max Q Clear Time (g_c+I1), s	3.4	4.4	2.8	11.8	2.1	2.9	2.2	13.1				
Green Ext Time (p_c), s	0.0	0.4	0.0	2.1	0.0	0.1	0.0	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay			16.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

Existing Conditions
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	472	7	29	466	30	9	12	20	79	21	10
Future Volume (veh/h)	4	472	7	29	466	30	9	12	20	79	21	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	4	524	8	30	480	31	11	15	25	86	23	11
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.97	0.97	0.97	0.79	0.79	0.79	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	9	662	10	61	706	46	150	87	112	310	49	19
Arrive On Green	0.01	0.40	0.40	0.04	0.43	0.43	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1616	1666	25	1691	1650	107	213	641	821	1026	358	140
Grp Volume(v), veh/h	4	0	532	30	0	511	51	0	0	120	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1675	0	0	1524	0	0
Q Serve(g_s), s	0.1	0.0	10.0	0.6	0.0	8.5	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	10.0	0.6	0.0	8.5	1.0	0.0	0.0	2.6	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	9	0	672	61	0	751	349	0	0	378	0	0
V/C Ratio(X)	0.45	0.00	0.79	0.49	0.00	0.68	0.15	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	223	0	1084	234	0	1126	1068	0	0	1032	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.0	0.0	9.6	17.1	0.0	8.4	13.9	0.0	0.0	14.6	0.0	0.0
Incr Delay (d2), s/veh	32.5	0.0	2.2	6.1	0.0	1.1	0.2	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.0	0.4	0.0	4.2	0.5	0.0	0.0	1.2	0.0	0.0
LnGrp Delay(d),s/veh	50.5	0.0	11.7	23.2	0.0	9.5	14.1	0.0	0.0	15.0	0.0	0.0
LnGrp LOS	D		B	C		A	B			B		
Approach Vol, veh/h		536			541			51			120	
Approach Delay, s/veh		12.0			10.2			14.1			15.0	
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		10.7	5.3	20.2		10.7	4.2	21.3				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	23.2		21.2	5.0	23.2				
Max Q Clear Time (g_c+1), s		3.0	2.6	12.0		4.6	2.1	10.5				
Green Ext Time (p_c), s		0.1	0.0	2.4		0.4	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			11.6									
HCM 2010 LOS			B									

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	122	433	414	0	2	158
Future Vol, veh/h	122	433	414	0	2	158
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	82	82	87	87
Heavy Vehicles, %	11	11	5	5	2	2
Mvmt Flow	137	487	505	0	2	182























Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	505	0	-	0	1266 505
Stage 1	-	-	-	-	505 -
Stage 2	-	-	-	-	761 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1015	-	-	-	187 567
Stage 1	-	-	-	-	606 -
Stage 2	-	-	-	-	461 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1015	-	-	-	162 567
Mov Cap-2 Maneuver	-	-	-	-	162 -
Stage 1	-	-	-	-	524 -
Stage 2	-	-	-	-	461 -

Approach	EB	WB	SB
HCM Control Delay, s	2	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1015	-	-	-	162	567
HCM Lane V/C Ratio	0.135	-	-	-	0.014	0.32
HCM Control Delay (s)	9.1	-	-	-	27.5	14.3
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0	1.4

HCM 2010 Signalized Intersection Summary
27: Las Palmas Ave & Sperry Ave

Existing Conditions
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	150	300	141	87	285	35	102	99	14	45	97	142
Future Volume (veh/h)	150	300	141	87	285	35	102	99	14	45	97	142
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.99		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1832	1900	1900	1835	1900	1881	1867	1900	1863	1874	1900
Adj Flow Rate, veh/h	165	330	155	89	291	36	110	106	15	52	111	163
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.98	0.98	0.98	0.93	0.93	0.93	0.87	0.87	0.87
Percent Heavy Veh, %	1	5	5	0	4	4	1	1	1	2	2	2
Cap, veh/h	209	547	252	123	584	71	352	444	63	475	175	257
Arrive On Green	0.12	0.24	0.24	0.07	0.19	0.19	0.07	0.28	0.28	0.05	0.26	0.26
Sat Flow, veh/h	1792	2317	1067	1810	3121	382	1792	1595	226	1774	675	991
Grp Volume(v), veh/h	165	246	239	89	161	166	110	0	121	52	0	274
Grp Sat Flow(s),veh/h/ln	1792	1740	1644	1810	1743	1760	1792	0	1820	1774	0	1666
Q Serve(g_s), s	6.6	9.3	9.6	3.6	6.1	6.3	3.2	0.0	3.8	1.5	0.0	10.8
Cycle Q Clear(g_c), s	6.6	9.3	9.6	3.6	6.1	6.3	3.2	0.0	3.8	1.5	0.0	10.8
Prop In Lane	1.00		0.65	1.00		0.22	1.00		0.12	1.00		0.59
Lane Grp Cap(c), veh/h	209	411	388	123	326	329	352	0	507	475	0	432
V/C Ratio(X)	0.79	0.60	0.62	0.72	0.49	0.50	0.31	0.00	0.24	0.11	0.00	0.63
Avail Cap(c_a), veh/h	508	1080	1020	513	1082	1093	730	0	1007	884	0	922
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	25.2	25.3	33.8	27.0	27.0	18.5	0.0	20.7	18.1	0.0	24.3
Incr Delay (d2), s/veh	6.5	2.4	2.7	7.8	2.0	2.0	0.5	0.0	0.3	0.1	0.0	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	3.7	4.7	4.7	2.0	3.1	3.2	1.6	0.0	2.0	0.7	0.0	5.2
LnGrp Delay(d),s/veh	38.3	27.6	28.0	41.6	29.0	29.1	19.0	0.0	21.0	18.2	0.0	26.5
LnGrp LOS	D	C	C	D	C	C	B		C	B		C
Approach Vol, veh/h		650			416			231				326
Approach Delay, s/veh		30.5			31.7			20.1				25.2
Approach LOS		C			C			C				C
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	24.0	11.9	26.2	15.7	20.4	10.4	27.6				
Change Period (Y+Rc), s	7.0	6.5	6.5	* 7	7.0	6.5	6.5	7.0				
Max Green Setting (Gmax), s	21.0	46.0	21.0	* 41	21.0	46.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	5.6	11.6	5.2	12.8	8.6	8.3	3.5	5.8				
Green Ext Time (p_c), s	0.2	5.4	0.2	2.7	0.3	3.4	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			28.2									
HCM 2010 LOS			C									
Notes												

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	5	494	541	8	3	2
Future Vol, veh/h	5	494	541	8	3	2
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	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	83	83	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	549	652	10	7	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	662	0	-	0	1218 657
Stage 1	-	-	-	-	657 -
Stage 2	-	-	-	-	561 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	927	-	-	-	199 465
Stage 1	-	-	-	-	516 -
Stage 2	-	-	-	-	571 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	927	-	-	-	197 465
Mov Cap-2 Maneuver	-	-	-	-	197 -
Stage 1	-	-	-	-	511 -
Stage 2	-	-	-	-	571 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	19.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	927	-	-	-	197	465
HCM Lane V/C Ratio	0.006	-	-	-	0.036	0.01
HCM Control Delay (s)	8.9	0	-	-	24	12.8
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↘	↑↑	↘	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

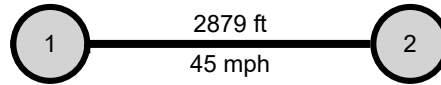
Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	-	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.13	-	6.63
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.83
Follow-up Hdwy	-	-	2.219	-	3.519
Pot Cap-1 Maneuver	-	0	1621	-	1020
Stage 1	-	0	-	-	1022
Stage 2	-	0	-	-	1022
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1621	-	1020
Mov Cap-2 Maneuver	-	-	-	-	1020
Stage 1	-	-	-	-	1022
Stage 2	-	-	-	-	1022

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

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	-	-	1621	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	0	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

HCS7 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd		Sperry Rd/Park Center Dr		Analysis Period	1> 7:00
Project Description	Existing Conditions					



Basic Segment Information (Sperry Ave between Rogers Rd & Park Center Drive)

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	44.72			44.72		
1	Running Speed, mph	43.90			43.90		
1	Through Delay, s/veh	5.95			14.30		
1	Travel Time, s	50.67			59.02		
1	Travel Speed, mph	38.74			33.26		
1	Stop Rate, stops/veh	0.57			0.67		
1	Spatial Stop Rate, stops/mi	1.05			1.23		
1	Through vol/cap Ratio	0.24			0.60		
1	Percent of Base FFS	85.61			71.38		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.30			2.32		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	3.75	D
1	Bicycle Segment LOS Score / LOS	8.20	F	6.76	F
1	Transit Segment LOS Score / LOS	6.56	F	6.48	F

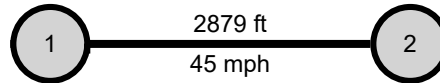
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		50.67		59.02	
Facility Travel Speed, mph		38.74		33.26	
Facility Base Free Flow Speed, mph		45.26		46.59	
Facility Percent of Base FFS		85.61		71.38	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.30		2.32	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			F	3.75	D
Bicycle Facility LOS Score / LOS		8.20	F	6.76	F
Transit Facility LOS Score / LOS		6.56	F	6.48	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd		Sperry Rd/Park Center Dr		Analysis Period	1> 7:00
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never			never	
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	46.40			44.42		
1	Running Speed, mph	42.30			44.19		
1	Through Delay, s/veh	8.13			13.34		
1	Travel Time, s	54.53			57.76		
1	Travel Speed, mph	36.00			33.99		
1	Stop Rate, stops/veh	0.54			0.68		
1	Spatial Stop Rate, stops/mi	0.99			1.25		
1	Through vol/cap Ratio	0.62			0.40		
1	Percent of Base FFS	79.54			72.94		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.29			2.33		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	3.68	D
1	Bicycle Segment LOS Score / LOS	4.92	E	4.68	E
1	Transit Segment LOS Score / LOS	6.68	F	6.44	F

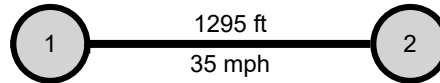
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	54.53	57.76	
Facility Travel Speed, mph	36.00	33.99			
Facility Base Free Flow Speed, mph	45.26	46.59			
Facility Percent of Base FFS	79.54	72.94			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.29	2.33			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS		3.68	D
Bicycle Facility LOS Score / LOS	4.92	4.68	E
Transit Facility LOS Score / LOS	6.68	6.44	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		25.76			25.70	
1	Running Speed, mph		34.27			34.35	
1	Through Delay, s/veh		0.17			15.69	
1	Travel Time, s		25.93			41.40	
1	Travel Speed, mph		34.05			21.33	
1	Stop Rate, stops/veh		0.01			0.80	
1	Spatial Stop Rate, stops/mi		0.03			3.27	
1	Through vol/cap Ratio		0.06			0.32	
1	Percent of Base FFS		89.61			55.96	
1	Level of Service		A			C	
1	Auto Traveler Perception Score		2.15			2.66	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.23	C	3.28	C
1	Bicycle Segment LOS Score / LOS	3.68	D	6.83	F
1	Transit Segment LOS Score / LOS	4.32	E	4.29	E

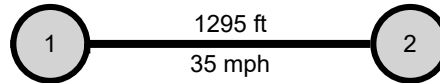
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		25.93		41.40	
Facility Travel Speed, mph		34.05		21.33	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		89.61		55.96	
Facility Level of Service		A		C	
Facility Auto Traveler Perception Score		2.15		2.66	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.23	C	3.28	C
Bicycle Facility LOS Score / LOS	3.68	D	6.83	F
Transit Facility LOS Score / LOS	4.32	E	4.29	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		25.88			25.80	
1	Running Speed, mph		34.12			34.22	
1	Through Delay, s/veh		0.21			22.16	
1	Travel Time, s		26.09			47.96	
1	Travel Speed, mph		33.85			18.41	
1	Stop Rate, stops/veh		0.01			0.81	
1	Spatial Stop Rate, stops/mi		0.03			3.30	
1	Through vol/cap Ratio		0.10			0.40	
1	Percent of Base FFS		89.07			48.30	
1	Level of Service		A			D	
1	Auto Traveler Perception Score		2.15			2.66	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.29	C	3.34	C
1	Bicycle Segment LOS Score / LOS	3.72	D	6.86	F
1	Transit Segment LOS Score / LOS	4.35	E	4.32	E

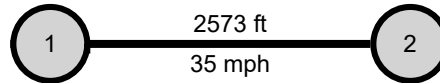
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		26.09		47.96	
Facility Travel Speed, mph		33.85		18.41	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		89.07		48.30	
Facility Level of Service		A		D	
Facility Auto Traveler Perception Score		2.15		2.66	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.29	C	3.34	C
Bicycle Facility LOS Score / LOS	3.72	D	6.86	F
Transit Facility LOS Score / LOS	4.35	E	4.32	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2573	2573	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	40.75			40.62		
1	Running Time, s	44.69			44.77		
1	Running Speed, mph	39.25			39.19		
1	Through Delay, s/veh	0.17			0.15		
1	Travel Time, s	44.86			44.92		
1	Travel Speed, mph	39.10			39.05		
1	Stop Rate, stops/veh	0.01			0.01		
1	Spatial Stop Rate, stops/mi	0.02			0.02		
1	Through vol/cap Ratio	0.05			0.04		
1	Percent of Base FFS	95.96			96.15		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.14			2.14		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.21	C	2.72	B
1	Transit Segment LOS Score / LOS	4.36	E	4.30	E

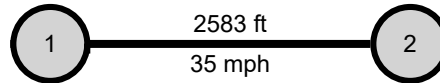
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	44.86	44.92	
Facility Travel Speed, mph	39.10	39.05			
Facility Base Free Flow Speed, mph	40.75	40.62			
Facility Percent of Base FFS	95.96	96.15			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.14	2.14			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.21	C	2.72
Transit Facility LOS Score / LOS	4.36	E	4.30

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2583	2583	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	40.76			40.62		
1	Running Time, s	44.93			45.12		
1	Running Speed, mph	39.20			39.04		
1	Through Delay, s/veh	0.20			0.21		
1	Travel Time, s	45.12			45.33		
1	Travel Speed, mph	39.03			38.85		
1	Stop Rate, stops/veh	0.01			0.01		
1	Spatial Stop Rate, stops/mi	0.02			0.02		
1	Through vol/cap Ratio	0.07			0.08		
1	Percent of Base FFS	95.76			95.64		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.14			2.14		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.38	C	3.20	C
1	Transit Segment LOS Score / LOS	4.39	E	4.38	E

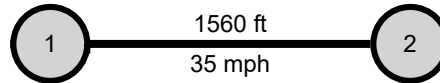
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	45.12	45.33	
Facility Travel Speed, mph	39.03	38.85			
Facility Base Free Flow Speed, mph	40.76	40.62			
Facility Percent of Base FFS	95.76	95.64			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.14	2.14			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.38	C	3.20 C
Transit Facility LOS Score / LOS	4.39	E	4.38 E

HCS7 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward Ave	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information (W Marshall Rd, east of Ward Ave)

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		41.78			41.78	
1	Running Time, s		27.78			27.82	
1	Running Speed, mph		38.28			38.24	
1	Through Delay, s/veh		1.16			1.18	
1	Travel Time, s		28.95			29.00	
1	Travel Speed, mph		36.74			36.68	
1	Stop Rate, stops/veh		0.41			0.42	
1	Spatial Stop Rate, stops/mi		1.40			1.41	
1	Through vol/cap Ratio		0.03			0.06	
1	Percent of Base FFS		87.94			87.79	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.57			2.57	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	7.03	F	6.54	F
1	Transit Segment LOS Score / LOS	6.47	F	6.49	F

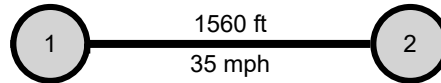
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		28.95		29.00	
Facility Travel Speed, mph		36.74		36.68	
Facility Base Free Flow Speed, mph		41.78		41.78	
Facility Percent of Base FFS		87.94		87.79	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.57		2.57	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	7.03	F	6.54	F	
Transit Facility LOS Score / LOS	6.47	F	6.49	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward Ave	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	27.85			27.81		
1	Running Speed, mph	38.20			38.24		
1	Through Delay, s/veh	1.21			1.18		
1	Travel Time, s	29.05			28.99		
1	Travel Speed, mph	36.61			36.69		
1	Stop Rate, stops/veh	0.42			0.42		
1	Spatial Stop Rate, stops/mi	1.42			1.41		
1	Through vol/cap Ratio	0.09			0.05		
1	Percent of Base FFS	87.63			87.81		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.57			2.57		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.51	E	4.35	E
1	Transit Segment LOS Score / LOS	6.51	F	6.48	F

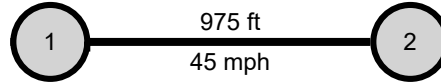
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	29.05	28.99	
Facility Travel Speed, mph	36.61	36.69			
Facility Base Free Flow Speed, mph	41.78	41.78			
Facility Percent of Base FFS	87.63	87.81			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.57	2.57			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.51	E	4.35 E
Transit Facility LOS Score / LOS	6.51	F	6.48 F

HCS7 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_A		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information (SR 33, south of Bartch Ave)

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	16.61			16.50		
1	Running Speed, mph	40.02			40.30		
1	Through Delay, s/veh	1.03			0.89		
1	Travel Time, s	17.64			17.39		
1	Travel Speed, mph	37.68			38.24		
1	Stop Rate, stops/veh	0.36			0.36		
1	Spatial Stop Rate, stops/mi	1.97			1.97		
1	Through vol/cap Ratio	0.29			0.13		
1	Percent of Base FFS	82.14			83.36		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.67			2.67		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	2.94	C	2.15	B
1	Transit Segment LOS Score / LOS	6.64	F	6.53	F

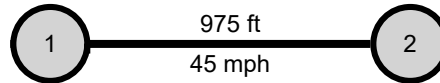
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		17.64		17.39	
Facility Travel Speed, mph		37.68		38.24	
Facility Base Free Flow Speed, mph		45.87		45.87	
Facility Percent of Base FFS		82.14		83.36	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.67		2.67	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	2.94	C	2.15	B	
Transit Facility LOS Score / LOS	6.64	F	6.53	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_P	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	18.02			18.09		
1	Running Speed, mph	36.89			36.75		
1	Through Delay, s/veh	0.94			1.01		
1	Travel Time, s	18.96			19.09		
1	Travel Speed, mph	35.06			34.82		
1	Stop Rate, stops/veh	0.36			0.36		
1	Spatial Stop Rate, stops/mi	1.97			1.97		
1	Through vol/cap Ratio	0.19			0.27		
1	Percent of Base FFS	76.44			75.91		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.67			2.67		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.43	C	3.47	C
1	Transit Segment LOS Score / LOS	6.59	F	6.62	F

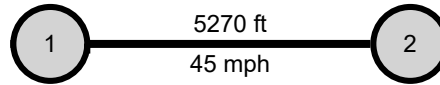
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	18.96	19.09	
Facility Travel Speed, mph	35.06	34.82			
Facility Base Free Flow Speed, mph	45.87	45.87			
Facility Percent of Base FFS	76.44	75.91			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.67	2.67			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.43	C	3.47
Transit Facility LOS Score / LOS	6.59	F	6.62

HCS7 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave_AM.xus		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information (Las Palmas Ave, between Sycamore Ave and Elm Ave)

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	82.06			82.05		
1	Running Speed, mph	43.79			43.79		
1	Through Delay, s/veh	9.11			13.63		
1	Travel Time, s	91.17			95.69		
1	Travel Speed, mph	39.41			37.55		
1	Stop Rate, stops/veh	0.57			0.63		
1	Spatial Stop Rate, stops/mi	0.57			0.63		
1	Through vol/cap Ratio	0.67			0.79		
1	Percent of Base FFS	87.29			83.17		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.23			2.23		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.48	C	5.78	F
1	Transit Segment LOS Score / LOS	6.63	F	6.63	F

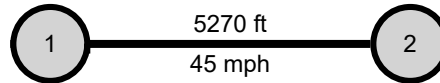
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		91.17		95.69	
Facility Travel Speed, mph		39.41		37.55	
Facility Base Free Flow Speed, mph		45.15		45.15	
Facility Percent of Base FFS		87.29		83.17	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.23		2.23	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.48	C	5.78	F	
Transit Facility LOS Score / LOS	6.63	F	6.63	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave, Sycamore &		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	82.37			82.24		
1	Running Speed, mph	43.62			43.69		
1	Through Delay, s/veh	10.50			14.06		
1	Travel Time, s	92.87			96.31		
1	Travel Speed, mph	38.69			37.31		
1	Stop Rate, stops/veh	0.57			0.62		
1	Spatial Stop Rate, stops/mi	0.57			0.62		
1	Through vol/cap Ratio	0.76			0.80		
1	Percent of Base FFS	85.70			82.63		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.22			2.23		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.92	D	4.29	E
1	Transit Segment LOS Score / LOS	6.65	F	6.64	F

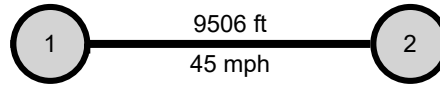
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	92.87	96.31	
Facility Travel Speed, mph	38.69	37.31			
Facility Base Free Flow Speed, mph	45.15	45.15			
Facility Percent of Base FFS	85.70	82.63			
Facility Level of Service	A	B			
Facility Auto Traveler Perception Score	2.22	2.23			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.92	D	4.29	E
Transit Facility LOS Score / LOS	6.65	F	6.64	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave2_AM - Copy	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	144.56			144.26		
1	Running Speed, mph	44.84			44.93		
1	Through Delay, s/veh	8.30			9.70		
1	Travel Time, s	152.86			153.95		
1	Travel Speed, mph	42.40			42.10		
1	Stop Rate, stops/veh	0.31			0.59		
1	Spatial Stop Rate, stops/mi	0.17			0.33		
1	Through vol/cap Ratio	0.29			0.72		
1	Percent of Base FFS	92.17			91.51		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.17			2.40		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.87	D	3.99	D
1	Transit Segment LOS Score / LOS	6.63	F	6.63	F

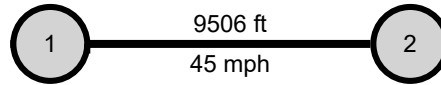
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	152.86		153.95
Facility Travel Speed, mph	42.40		42.10		
Facility Base Free Flow Speed, mph	46.00		46.01		
Facility Percent of Base FFS	92.17		91.51		
Facility Level of Service	A		A		
Facility Auto Traveler Perception Score	2.17		2.40		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.87	D	3.99	D
Transit Facility LOS Score / LOS	6.63	F	6.63	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	145.26			145.36		
1	Running Speed, mph	44.62			44.59		
1	Through Delay, s/veh	9.28			11.16		
1	Travel Time, s	154.54			156.52		
1	Travel Speed, mph	41.94			41.41		
1	Stop Rate, stops/veh	0.34			0.55		
1	Spatial Stop Rate, stops/mi	0.19			0.31		
1	Through vol/cap Ratio	0.42			0.80		
1	Percent of Base FFS	91.17			90.00		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.17			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.89	D	4.01	D
1	Transit Segment LOS Score / LOS	6.66	F	6.68	F

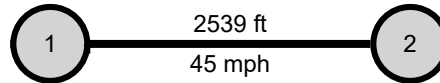
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		154.54		156.52	
Facility Travel Speed, mph		41.94		41.41	
Facility Base Free Flow Speed, mph		46.00		46.01	
Facility Percent of Base FFS		91.17		90.00	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.17		2.39	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.89	D	4.01	D	
Transit Facility LOS Score / LOS	6.66	F	6.68	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_AM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	39.85			41.85		
1	Running Speed, mph	43.44			41.36		
1	Through Delay, s/veh	8.46			20.51		
1	Travel Time, s	48.31			62.36		
1	Travel Speed, mph	35.83			27.76		
1	Stop Rate, stops/veh	0.34			0.81		
1	Spatial Stop Rate, stops/mi	0.70			1.69		
1	Through vol/cap Ratio	0.21			0.82		
1	Percent of Base FFS	78.08			63.75		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.46			2.62		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.02	D	4.68	E
1	Transit Segment LOS Score / LOS	6.56	F	0.39	A

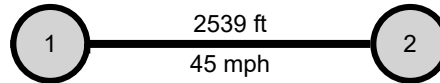
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	48.31	62.36	
Facility Travel Speed, mph	35.83	27.76			
Facility Base Free Flow Speed, mph	45.89	43.54			
Facility Percent of Base FFS	78.08	63.75			
Facility Level of Service	B	C			
Facility Auto Traveler Perception Score	2.46	2.62			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.02	D	4.68 E
Transit Facility LOS Score / LOS	6.56	F	0.39 A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_PM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	39.90			42.17		
1	Running Speed, mph	43.39			41.05		
1	Through Delay, s/veh	8.59			18.66		
1	Travel Time, s	48.48			60.83		
1	Travel Speed, mph	35.71			28.46		
1	Stop Rate, stops/veh	0.34			0.76		
1	Spatial Stop Rate, stops/mi	0.71			1.58		
1	Through vol/cap Ratio	0.24			0.86		
1	Percent of Base FFS	77.80			65.35		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.46			2.60		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.03	D	4.72	E
1	Transit Segment LOS Score / LOS	6.57	F	0.45	A

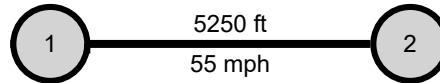
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	48.48	60.83	
Facility Travel Speed, mph	35.71	28.46			
Facility Base Free Flow Speed, mph	45.89	43.54			
Facility Percent of Base FFS	77.80	65.35			
Facility Level of Service	B	C			
Facility Auto Traveler Perception Score	2.46	2.60			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.03	D	4.72 E
Transit Facility LOS Score / LOS	6.57	F	0.45 A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	72.46			79.63		
1	Running Speed, mph	49.40			44.95		
1	Through Delay, s/veh	8.32			0.00		
1	Travel Time, s	80.78			79.63		
1	Travel Speed, mph	44.31			44.95		
1	Stop Rate, stops/veh	0.51			0.00		
1	Spatial Stop Rate, stops/mi	0.51			0.00		
1	Through vol/cap Ratio	0.04			0.00		
1	Percent of Base FFS	88.57			99.17		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.42			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.61	E	5.60	F
1	Transit Segment LOS Score / LOS	6.51	F	0.19	A

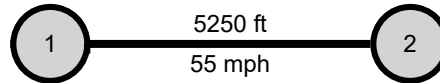
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		80.78		79.63	
Facility Travel Speed, mph		44.31		44.95	
Facility Base Free Flow Speed, mph		50.03		45.33	
Facility Percent of Base FFS		88.57		99.17	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.42		2.34	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.61	E	5.60	F	
Transit Facility LOS Score / LOS	6.51	F	0.19	A	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	72.57			79.58		
1	Running Speed, mph	49.32			44.98		
1	Through Delay, s/veh	8.54			0.00		
1	Travel Time, s	81.11			79.58		
1	Travel Speed, mph	44.13			44.98		
1	Stop Rate, stops/veh	0.51			0.00		
1	Spatial Stop Rate, stops/mi	0.52			0.00		
1	Through vol/cap Ratio	0.09			0.00		
1	Percent of Base FFS	88.21			99.23		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.75	E	5.52	F
1	Transit Segment LOS Score / LOS	6.54	F	0.18	A

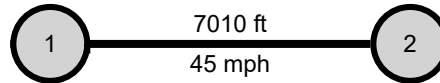
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	81.11	79.58	
Facility Travel Speed, mph	44.13	44.98			
Facility Base Free Flow Speed, mph	50.03	45.33			
Facility Percent of Base FFS	88.21	99.23			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.43	2.34			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.75	E	5.52
Transit Facility LOS Score / LOS	6.54	F	0.18

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	AM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1> 7:00
Project Description	Existing Conditions				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

		Northbound			Southbound		
Segment Output Data		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	104.37			104.11		
1	Running Speed, mph	45.80			45.91		
1	Through Delay, s/veh	0.00			5.19		
1	Travel Time, s	104.37			109.30		
1	Travel Speed, mph	45.80			43.73		
1	Stop Rate, stops/veh	0.00			0.64		
1	Spatial Stop Rate, stops/mi	0.00			0.48		
1	Through vol/cap Ratio	0.00			0.07		
1	Percent of Base FFS	99.34			94.86		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.42		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.59	D	4.35	E
1	Transit Segment LOS Score / LOS	6.53	F	6.49	F

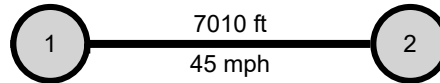
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		104.37		109.30	
Facility Travel Speed, mph		45.80		43.73	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		99.34		94.86	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.34		2.42	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.59	D	4.35	E
Transit Facility LOS Score / LOS	6.53	F	6.49	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR		Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	104.16			104.17		
1	Running Speed, mph	45.89			45.88		
1	Through Delay, s/veh	0.00			5.33		
1	Travel Time, s	104.16			109.49		
1	Travel Speed, mph	45.89			43.65		
1	Stop Rate, stops/veh	0.00			0.64		
1	Spatial Stop Rate, stops/mi	0.00			0.49		
1	Through vol/cap Ratio	0.00			0.09		
1	Percent of Base FFS	99.54			94.69		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.42		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.45	C	4.40	E
1	Transit Segment LOS Score / LOS	6.49	F	6.50	F

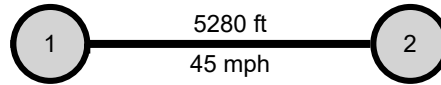
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	104.16		109.49
Facility Travel Speed, mph	45.89		43.65		
Facility Base Free Flow Speed, mph	46.10		46.10		
Facility Percent of Base FFS	99.54		94.69		
Facility Level of Service	A		A		
Facility Auto Traveler Perception Score	2.34		2.42		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.45	C	4.40	E
Transit Facility LOS Score / LOS	6.49	F	6.50	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	4/17/2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	AM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1> 7:00
Project Description	Existing Conditions				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	78.48			78.46		
1	Running Speed, mph	45.87			45.88		
1	Through Delay, s/veh	7.56			0.00		
1	Travel Time, s	86.05			78.46		
1	Travel Speed, mph	41.84			45.88		
1	Stop Rate, stops/veh	0.81			0.00		
1	Spatial Stop Rate, stops/mi	0.81			0.00		
1	Through vol/cap Ratio	0.15			0.00		
1	Percent of Base FFS	90.40			99.15		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.47			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.11	C	3.07	C
1	Transit Segment LOS Score / LOS	6.47	F	6.46	F

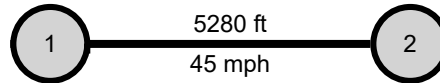
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	86.05	78.46	
Facility Travel Speed, mph	41.84	45.88			
Facility Base Free Flow Speed, mph	46.28	46.28			
Facility Percent of Base FFS	90.40	99.15			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.47	2.34			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.11	C	3.07 C
Transit Facility LOS Score / LOS	6.47	F	6.46 F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	78.50			78.47		
1	Running Speed, mph	45.86			45.88		
1	Through Delay, s/veh	7.61			0.00		
1	Travel Time, s	86.11			78.47		
1	Travel Speed, mph	41.81			45.88		
1	Stop Rate, stops/veh	0.83			0.00		
1	Spatial Stop Rate, stops/mi	0.83			0.00		
1	Through vol/cap Ratio	0.19			0.00		
1	Percent of Base FFS	90.34			99.15		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.48			2.34		

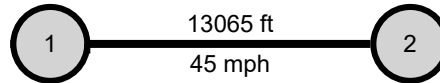
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	3.14	C	3.08
1	Transit Segment LOS Score / LOS	6.47	F	6.46

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		86.11		78.47	
Facility Travel Speed, mph		41.81		45.88	
Facility Base Free Flow Speed, mph		46.28		46.28	
Facility Percent of Base FFS		90.34		99.15	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.48		2.34	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.14	C	3.08	C
Transit Facility LOS Score / LOS	6.47	F	6.46	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement		2	12	1	6	
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		46.21			46.21	
1	Running Time, s		193.11			197.10	
1	Running Speed, mph		46.13			45.20	
1	Through Delay, s/veh		13.33			0.00	
1	Travel Time, s		206.44			197.10	
1	Travel Speed, mph		43.15			45.20	
1	Stop Rate, stops/veh		0.47			0.00	
1	Spatial Stop Rate, stops/mi		0.19			0.00	
1	Through vol/cap Ratio		0.04			0.00	
1	Percent of Base FFS		93.38			97.80	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.37			2.34	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.34	E	4.53	E
1	Transit Segment LOS Score / LOS	6.49	F	6.74	F

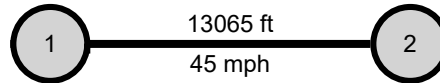
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	206.44	197.10	
Facility Travel Speed, mph	43.15	45.20			
Facility Base Free Flow Speed, mph	46.21	46.21			
Facility Percent of Base FFS	93.38	97.80			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.37	2.34			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.34	E	4.53
Transit Facility LOS Score / LOS	6.49	F	6.74

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1> 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement		2	12	1	6	
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		46.21			46.21	
1	Running Time, s		193.15			196.65	
1	Running Speed, mph		46.12			45.30	
1	Through Delay, s/veh		13.36			0.00	
1	Travel Time, s		206.51			196.65	
1	Travel Speed, mph		43.14			45.30	
1	Stop Rate, stops/veh		0.47			0.00	
1	Spatial Stop Rate, stops/mi		0.19			0.00	
1	Through vol/cap Ratio		0.04			0.00	
1	Percent of Base FFS		93.34			98.02	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.37			2.34	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.40	E	4.52	E
1	Transit Segment LOS Score / LOS	6.49	F	6.73	F

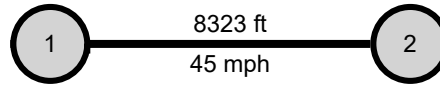
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	206.51		196.65
Facility Travel Speed, mph	43.14		45.30		
Facility Base Free Flow Speed, mph	46.21		46.21		
Facility Percent of Base FFS	93.34		98.02		
Facility Level of Service	A		A		
Facility Auto Traveler Perception Score	2.37		2.34		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.40	E	4.52	E
Transit Facility LOS Score / LOS	6.49	F	6.73	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	123.84			123.48		
1	Running Speed, mph	45.82			45.96		
1	Through Delay, s/veh	15.79			11.22		
1	Travel Time, s	139.63			134.70		
1	Travel Speed, mph	40.64			42.13		
1	Stop Rate, stops/veh	0.53			0.56		
1	Spatial Stop Rate, stops/mi	0.34			0.35		
1	Through vol/cap Ratio	0.43			0.36		
1	Percent of Base FFS	87.31			90.50		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.40			2.40		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.21	D	4.15	D
1	Transit Segment LOS Score / LOS	6.61	F	6.57	F

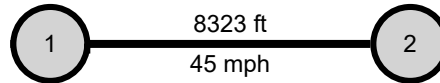
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	139.63	134.70	
Facility Travel Speed, mph	40.64	42.13			
Facility Base Free Flow Speed, mph	46.55	46.55			
Facility Percent of Base FFS	87.31	90.50			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.40	2.40			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.21	D	4.15
Transit Facility LOS Score / LOS	6.61	F	6.57

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	PM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Existing Conditions				



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0	

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	123.63			125.14		
1	Running Speed, mph	45.90			45.35		
1	Through Delay, s/veh	15.38			15.31		
1	Travel Time, s	139.01			140.45		
1	Travel Speed, mph	40.82			40.40		
1	Stop Rate, stops/veh	0.59			0.63		
1	Spatial Stop Rate, stops/mi	0.37			0.40		
1	Through vol/cap Ratio	0.41			0.75		
1	Percent of Base FFS	87.69			86.79		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.40			2.41		

Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	4.19	D	4.22 D
1	Transit Segment LOS Score / LOS	6.60	F	6.66 F

Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		139.01		140.45	
Facility Travel Speed, mph		40.82		40.40	
Facility Base Free Flow Speed, mph		46.55		46.55	
Facility Percent of Base FFS		87.69		86.79	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.40		2.41	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.19	D	4.22	D
Transit Facility LOS Score / LOS	6.60	F	6.66	F

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: Existing AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2018
Description: Patterson NW Annex Segment Analysis

Flow Inputs and Adjustments

Volume, V	1335	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	355	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	753	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

LOS and Performance Measures

Flow rate, vp	753	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	11.6	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: Existing PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2018
Description: Patterson NW Annex Segment Analysis

Flow Inputs and Adjustments

Volume, V	1508	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	401	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, fp	1.00	
Flow rate, vp	870	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

LOS and Performance Measures

Flow rate, vp	870	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	13.4	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: Existing AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2018
Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	1227	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	326	v
Trucks and buses	22	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, fp	1.00	
Flow rate, vp	724	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	724	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	2	
Density, D	12.1	pc/mi/ln
Level of service, LOS	B	

Phone: _____ Fax: _____
 E-mail: _____

----- Operational Analysis -----

Analyst: AMG
 Agency or Company:
 Date Performed: 8/23/2019
 Analysis Time Period: Existing PM Peak Hour
 Freeway/Direction: I-5 Southbound
 From/To: North of Sperry Ave
 Jurisdiction: City of Patterson
 Analysis Year: 2018
 Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	1806	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	480	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	1018	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	55.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	55.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	1018	pc/h/ln
Free-flow speed, FFS	55.0	mi/h
Average passenger-car speed, S	55.0	mi/h
Number of lanes, N	2	
Density, D	18.5	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: Existing AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2018
Description: Patterson NW Annex

Flow Inputs and Adjustments

Volume, V	1100	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	293	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	647	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

LOS and Performance Measures

Flow rate, vp	647	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	10.0	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: Existing PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2018
Description: Patterson NW Annex

----- Flow Inputs and Adjustments -----

Volume, V	1408	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	374	v
Trucks and buses	16	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.926	
Driver population factor, fp	1.00	
Flow rate, vp	809	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	58.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	58.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	809	pc/h/ln
Free-flow speed, FFS	58.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	2	
Density, D	13.5	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: Existing AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2018
Description: Patterson NW Annex

Flow Inputs and Adjustments

Volume, V	1089	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	290	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	640	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

LOS and Performance Measures

Flow rate, vp	640	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	9.8	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: Existing PM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2018
Description: Patterson NW Annex

Flow Inputs and Adjustments

Volume, V	1397	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	372	v
Trucks and buses	19	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.913	
Driver population factor, fp	1.00	
Flow rate, vp	814	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

LOS and Performance Measures

Flow rate, vp	814	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	2	
Density, D	13.6	pc/mi/ln
Level of service, LOS	B	

TRAFFIC IMPACT STUDY FOR PROPOSED ZACHARIAS AND BALDWIN MASTER PLAN IN PATTERSON,
CALIFORNIA

Appendix C Intersection LOS Analysis: Existing plus approved projects Conditions LOS Calculation Sheets
February 7, 2020

Appendix C **INTERSECTION LOS ANALYSIS: EXISTING PLUS
APPROVED PROJECTS CONDITIONS LOS CALCULATION
SHEETS**

Intersection												
Int Delay, s/veh	350.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	512	9	137	61	0	0	0	0	394	2	35
Future Vol, veh/h	0	512	9	137	61	0	0	0	0	394	2	35
Conflicting Peds, #/hr	0	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	76	76	76	25	25	25	88	88	88
Heavy Vehicles, %	0	1	50	22	17	0	0	0	0	23	25	17
Mvmt Flow	0	753	13	180	80	0	0	0	0	448	2	40

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	766	0	0		1200	1206	80
Stage 1	-	-	-	-	-	-		440	440	-
Stage 2	-	-	-	-	-	-		760	766	-
Critical Hdwy	-	-	-	4.32	-	-		6.63	6.75	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-		5.63	5.75	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.63	5.75	-
Follow-up Hdwy	-	-	-	2.398	-	-		3.707	4.225	3.453
Pot Cap-1 Maneuver	0	-	-	764	-	0		~ 186	166	940
Stage 1	0	-	-	-	-	0		607	540	-
Stage 2	0	-	-	-	-	0		~ 427	380	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	764	-	-		~ 140	0	940
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 140	0	-
Stage 1	-	-	-	-	-	-		607	0	-
Stage 2	-	-	-	-	-	-		~ 322	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	7.7	\$ 1081.8
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	764	-	150
HCM Lane V/C Ratio	-	-	0.236	-	3.265
HCM Control Delay (s)	-	-	11.2	\$ 1081.8	
HCM Lane LOS	-	-	B	A	F
HCM 95th %tile Q(veh)	-	-	0.9	-	46.4

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	442.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	172	734	0	0	176	707	22	11	819	0	0	0
Future Vol, veh/h	172	734	0	0	176	707	22	11	819	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	90	90	90	82	82	82	25	25	25
Heavy Vehicles, %	0	16	0	0	22	10	0	0	16	0	0	0
Mvmt Flow	205	874	0	0	196	786	27	13	999	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	982	0	- - - 0 1873 2266 874
Stage 1	-	-	- - - 1284 1284 -
Stage 2	-	-	- - - 589 982 -
Critical Hdwy	4.1	-	- - - 6.4 6.5 6.36
Critical Hdwy Stg 1	-	-	- - - 5.4 5.5 -
Critical Hdwy Stg 2	-	-	- - - 5.4 5.5 -
Follow-up Hdwy	2.2	-	- - - 3.5 4 3.444
Pot Cap-1 Maneuver	711	- 0 0	- - - 80 41 ~ 329
Stage 1	-	- 0 0	- - - 262 238 -
Stage 2	-	- 0 0	- - - 558 330 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	711	- - -	- - - 35 0 ~ 329
Mov Cap-2 Maneuver	-	- - -	- - - 35 0 -
Stage 1	-	- - -	- - - 115 0 -
Stage 2	-	- - -	- - - 558 0 -

Approach	EB	WB	NB
HCM Control Delay, s	2.3	0	\$ 1317.8
HCM LOS			F
























Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	270	711	-	-	-
HCM Lane V/C Ratio	3.848	0.288	-	-	-
HCM Control Delay (s)	\$ 1317.8	12.1	0	-	-
HCM Lane LOS	F	B	A	-	-
HCM 95th %tile Q(veh)	100	1.2	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis
3: Sperry Ave & Rogers Rd

Existing Plus Approved Projects

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	941	214	76	470	150	188	3	60	183	0	225
Future Volume (vph)	398	941	214	76	470	150	188	3	60	183	0	225
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	2959	1583	1770	1652	1546	1770	1863	1583		1736	2632
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1656	2959	1583	1770	1652	1546	1770	1863	1583		1736	2632
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.92	0.80
Adj. Flow (vph)	457	1082	233	83	511	163	204	3	65	229	0	281
RTOR Reduction (vph)	0	0	108	0	0	97	0	0	57	0	0	124
Lane Group Flow (vph)	457	1082	125	83	511	66	204	3	8	0	229	157
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	9%	22%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	37.5	72.2	72.2	11.3	44.0	44.0	17.9	17.9	17.9		21.1	58.6
Effective Green, g (s)	37.5	72.2	72.2	11.3	44.0	44.0	17.9	17.9	17.9		21.1	58.6
Actuated g/C Ratio	0.26	0.50	0.50	0.08	0.31	0.31	0.12	0.12	0.12		0.15	0.41
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	431	1483	793	138	504	472	220	231	196		254	1071
v/s Ratio Prot	c0.28	0.37		0.05	c0.31		c0.12	0.00			c0.13	0.04
v/s Ratio Perm			0.08			0.04			0.01			0.02
v/c Ratio	1.06	0.73	0.16	0.60	1.01	0.14	0.93	0.01	0.04		0.90	0.15
Uniform Delay, d1	53.2	28.2	19.4	64.2	50.0	36.3	62.4	55.3	55.5		60.4	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	60.2	2.3	0.2	7.2	43.6	0.1	40.6	0.0	0.1		31.8	0.1
Delay (s)	113.5	30.5	19.6	71.4	93.6	36.4	103.0	55.3	55.6		92.2	27.0
Level of Service	F	C	B	E	F	D	F	E	E		F	C
Approach Delay (s)		50.5			78.9			91.1			56.3	
Approach LOS		D			E			F			E	
Intersection Summary												
HCM 2000 Control Delay			61.2				HCM 2000 Level of Service				E	
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			144.0				Sum of lost time (s)				23.5	
Intersection Capacity Utilization			79.4%				ICU Level of Service				D	
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

Existing Plus Approved Projects
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↘		↖↗	↖↗	↖				↖		↖
Traffic Volume (veh/h)	99	242	0	1	440	17	0	0	0	23	0	123
Future Volume (veh/h)	99	242	0	1	440	17	0	0	0	23	0	123
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	112	275	0	1	557	22				26	0	137
Adj No. of Lanes	2	1	0	2	2	1				1	0	1
Peak Hour Factor	0.88	0.88	0.88	0.79	0.79	0.79				0.90	0.90	0.90
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	230	818	0	9	1267	454				234	0	162
Arrive On Green	0.11	0.47	0.00	0.00	0.37	0.37				0.17	0.00	0.17
Sat Flow, veh/h	2167	1743	0	3510	3471	1245				1403	0	973
Grp Volume(v), veh/h	112	275	0	1	557	22				26	0	137
Grp Sat Flow(s),veh/h/ln	1173	1743	0	1755	1736	1245				1403	0	973
Q Serve(g_s), s	2.0	4.0	0.0	0.0	4.9	0.5				0.6	0.0	5.5
Cycle Q Clear(g_c), s	2.0	4.0	0.0	0.0	4.9	0.5				0.6	0.0	5.5
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	230	818	0	9	1267	454				234	0	162
V/C Ratio(X)	0.49	0.34	0.00	0.12	0.44	0.05				0.11	0.00	0.84
Avail Cap(c_a), veh/h	1654	2146	0	2680	4274	1533				1140	0	791
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	6.8	0.0	20.2	9.8	8.3				14.4	0.0	16.4
Incr Delay (d2), s/veh	1.6	0.5	0.0	5.8	0.5	0.1				0.2	0.0	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.0	0.0	0.0	2.4	0.4				0.3	0.0	3.3
LnGrp Delay(d),s/veh	18.7	7.3	0.0	26.0	10.3	8.4				14.6	0.0	27.5
LnGrp LOS	B	A		C	B	A				B		C
Approach Vol, veh/h		387			580						163	
Approach Delay, s/veh		10.6			10.2						25.5	
Approach LOS		B			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	4.6	24.8		11.3	8.8	20.5						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	31.0	50.0		33.0	31.0	50.0						
Max Q Clear Time (g_c+I), s	12.0	6.0		7.5	4.0	6.9						
Green Ext Time (p_c), s	0.0	3.3		0.5	0.4	7.9						
Intersection Summary												
HCM 2010 Ctrl Delay			12.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

Existing Plus Approved Projects
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	47	221	25	10	323	85	104	153	35	54	39	93
Future Volume (veh/h)	47	221	25	10	323	85	104	153	35	54	39	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1834	1900	1900	1792	1863	1900	1810	1900	1827	1874	1900
Adj Flow Rate, veh/h	55	257	29	13	419	110	132	194	44	69	50	119
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.86	0.86	0.86	0.77	0.77	0.77	0.79	0.79	0.79	0.78	0.78	0.78
Percent Heavy Veh, %	6	4	4	0	6	2	0	5	5	4	0	0
Cap, veh/h	204	630	71	35	624	551	173	270	61	238	81	193
Arrive On Green	0.06	0.39	0.39	0.02	0.35	0.35	0.10	0.19	0.19	0.07	0.16	0.16
Sat Flow, veh/h	3312	1615	182	1810	1792	1583	1810	1428	324	3375	493	1173
Grp Volume(v), veh/h	55	0	286	13	419	110	132	0	238	69	0	169
Grp Sat Flow(s),veh/h/ln1656	0	1797	1810	1792	1583	1810	0	1752	1688	0	1667	
Q Serve(g_s), s	0.9	0.0	6.5	0.4	11.1	2.7	4.0	0.0	7.1	1.1	0.0	5.3
Cycle Q Clear(g_c), s	0.9	0.0	6.5	0.4	11.1	2.7	4.0	0.0	7.1	1.1	0.0	5.3
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.18	1.00		0.70
Lane Grp Cap(c), veh/h	204	0	701	35	624	551	173	0	332	238	0	274
V/C Ratio(X)	0.27	0.00	0.41	0.37	0.67	0.20	0.76	0.00	0.72	0.29	0.00	0.62
Avail Cap(c_a), veh/h	1539	0	1542	679	1537	1358	679	0	1033	1267	0	983
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	12.4	27.1	15.5	12.8	24.7	0.0	21.3	24.7	0.0	21.7
Incr Delay (d2), s/veh	0.3	0.0	0.8	13.0	2.7	0.4	2.7	0.0	2.9	0.2	0.0	2.3
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/ln0.4	0.0	0.0	3.3	0.3	5.9	1.2	2.1	0.0	3.7	0.5	0.0	2.6
LnGrp Delay(d),s/veh	25.3	0.0	13.2	40.0	18.2	13.2	27.3	0.0	24.2	24.9	0.0	24.0
LnGrp LOS	C		B	D	B	B	C		C	C		C
Approach Vol, veh/h		341			542			370			238	
Approach Delay, s/veh		15.2			17.7			25.3			24.3	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s5.3	27.3	9.5	13.8	7.6	25.0	8.1	15.2					
Change Period (Y+Rc), s4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6					
Max Green Setting (Gmax)21	48.0	* 21	33.0	* 26	48.0	* 21	33.0					
Max Q Clear Time (g_c+1)12.4	8.5	6.0	7.3	2.9	13.1	3.1	9.1					
Green Ext Time (p_c), s	0.0	3.4	0.1	1.0	0.1	6.3	0.1	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			20.1									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

Existing Plus Approved Projects
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	49	415	20	32	432	45	46	105	64	112	114	147
Future Volume (veh/h)	49	415	20	32	432	45	46	105	64	112	114	147
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	60	506	24	41	554	58	81	184	112	190	193	249
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.82	0.82	0.82	0.78	0.78	0.78	0.57	0.57	0.57	0.59	0.59	0.59
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	112	977	46	86	864	90	239	388	236	358	268	345
Arrive On Green	0.06	0.29	0.29	0.05	0.27	0.27	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1810	3398	161	1757	3147	329	942	1089	663	1087	752	971
Grp Volume(v), veh/h	60	260	270	41	303	309	81	0	296	190	0	442
Grp Sat Flow(s),veh/h/ln	1810	1750	1809	1757	1722	1753	942	0	1752	1087	0	1723
Q Serve(g_s), s	2.0	7.9	7.9	1.4	9.8	9.8	5.2	0.0	8.3	10.4	0.0	14.1
Cycle Q Clear(g_c), s	2.0	7.9	7.9	1.4	9.8	9.8	19.2	0.0	8.3	18.7	0.0	14.1
Prop In Lane	1.00		0.09	1.00		0.19	1.00		0.38	1.00		0.56
Lane Grp Cap(c), veh/h	112	503	520	86	473	481	239	0	623	358	0	613
V/C Ratio(X)	0.54	0.52	0.52	0.48	0.64	0.64	0.34	0.00	0.47	0.53	0.00	0.72
Avail Cap(c_a), veh/h	915	995	1029	888	979	997	291	0	720	418	0	708
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	18.9	18.9	29.3	20.2	20.2	26.0	0.0	15.8	23.1	0.0	17.7
Incr Delay (d2), s/veh	4.0	1.2	1.1	4.1	2.1	2.0	0.8	0.0	0.6	1.2	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.9	4.1	0.8	4.9	5.0	1.4	0.0	4.0	3.2	0.0	7.1
LnGrp Delay(d),s/veh	32.8	20.0	20.0	33.4	22.3	22.3	26.8	0.0	16.4	24.3	0.0	20.7
LnGrp LOS	C	C	C	C	C	C	C		B	C		C
Approach Vol, veh/h		590			653			377			632	
Approach Delay, s/veh		21.3			23.0			18.6			21.8	
Approach LOS		C			C			B			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	24.7		29.0	10.4	23.9		29.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	32.0	36.0		26.0	32.0	36.0		26.0				
Max Q Clear Time (g_c+1), s	13.4	9.9		20.7	4.0	11.8		21.2				
Green Ext Time (p_c), s	0.1	4.4		1.8	0.1	5.4		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				21.5								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

Existing Plus Approved Projects
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	373	13	118	440	110	29	140	146	130	107	34
Future Volume (veh/h)	84	373	13	118	440	110	29	140	146	130	107	34
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1813	1900	1792	1827	1845	1900	1827	1900	1900	1863	1776
Adj Flow Rate, veh/h	109	484	17	136	506	126	51	246	256	197	162	52
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.77	0.77	0.77	0.87	0.87	0.87	0.57	0.57	0.57	0.66	0.66	0.66
Percent Heavy Veh, %	0	4	4	6	4	3	0	4	4	0	2	7
Cap, veh/h	140	717	25	168	771	343	83	270	281	235	767	612
Arrive On Green	0.08	0.21	0.21	0.10	0.22	0.22	0.05	0.33	0.33	0.13	0.41	0.41
Sat Flow, veh/h	1810	3393	119	1707	3471	1546	1810	821	854	1810	1863	1485
Grp Volume(v), veh/h	109	245	256	136	506	126	51	0	502	197	162	52
Grp Sat Flow(s),veh/h/ln	1810	1723	1789	1707	1736	1546	1810	0	1675	1810	1863	1485
Q Serve(g_s), s	5.8	12.7	12.8	7.6	12.9	6.7	2.7	0.0	28.0	10.3	5.5	2.1
Cycle Q Clear(g_c), s	5.8	12.7	12.8	7.6	12.9	6.7	2.7	0.0	28.0	10.3	5.5	2.1
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	140	364	378	168	771	343	83	0	550	235	767	612
V/C Ratio(X)	0.78	0.67	0.68	0.81	0.66	0.37	0.61	0.00	0.91	0.84	0.21	0.08
Avail Cap(c_a), veh/h	372	531	552	351	1141	508	390	0	585	390	767	612
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	35.3	35.3	43.0	34.5	32.1	45.6	0.0	31.3	41.4	18.4	17.4
Incr Delay (d2), s/veh	9.0	4.6	4.5	9.0	2.0	1.4	7.0	0.0	19.4	8.1	0.3	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	8.2	6.5	6.8	4.0	6.4	3.0	1.5	0.0	15.8	5.7	2.9	0.9
LnGrp Delay(d),s/veh	53.1	39.9	39.8	52.0	36.5	33.5	52.6	0.0	50.7	49.4	18.7	17.6
LnGrp LOS	D	D	D	D	D	C	D		D	D	B	B
Approach Vol, veh/h		610			768			553			411	
Approach Delay, s/veh		42.2			38.7			50.9			33.3	
Approach LOS		D			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.6	26.6	9.1	46.1	14.5	27.6	17.2	38.0				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	20.0	30.0	21.0	26.0	20.0	32.0	21.0	34.0				
Max Q Clear Time (g_c+I), s	19.6	14.8	4.7	7.5	7.8	14.9	12.3	30.0				
Green Ext Time (p_c), s	0.2	4.3	0.1	1.8	0.2	5.8	0.3	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay				41.5								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary
 8: Del Puerto Ave & Sperry Ave

Existing Plus Approved Projects
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	242	25	11	334	25	56	84	16	5	56	163
Future Volume (veh/h)	178	242	25	11	334	25	56	84	16	5	56	163
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	212	288	30	13	388	29	76	114	22	7	84	243
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.74	0.74	0.74	0.67	0.67	0.67
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	506	1566	162	645	872	798	231	305	49	88	124	341
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	964	3159	326	1077	1759	1610	415	1070	172	11	436	1195
Grp Volume(v), veh/h	212	156	162	13	388	29	212	0	0	334	0	0
Grp Sat Flow(s),veh/h/ln	964	1727	1759	1077	1759	1610	1657	0	0	1643	0	0
Q Serve(g_s), s	7.9	2.2	2.2	0.3	6.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.1	2.2	2.2	2.5	6.2	0.4	4.1	0.0	0.0	7.9	0.0	0.0
Prop In Lane	1.00		0.19	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	506	856	872	645	872	798	585	0	0	553	0	0
V/C Ratio(X)	0.42	0.18	0.19	0.02	0.45	0.04	0.36	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	852	1474	1502	1030	1502	1375	1274	0	0	1331	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	6.1	6.1	6.8	7.1	5.6	12.5	0.0	0.0	13.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.2	0.2	0.0	0.8	0.0	0.4	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.1	1.1	0.1	3.1	0.2	2.1	0.0	0.0	3.7	0.0	0.0
LnGrp Delay(d),s/veh	12.8	6.3	6.3	6.8	7.8	5.7	12.9	0.0	0.0	15.0	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		530			430			212			334	
Approach Delay, s/veh		8.9			7.7			12.9			15.0	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.1		17.3		26.1		17.3				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		37.0		33.0		37.0		33.0				
Max Q Clear Time (g_c+1), s		16.1		6.1		8.2		9.9				
Green Ext Time (p_c), s		5.4		1.5		5.1		2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				10.4								
HCM 2010 LOS				B								

Intersection												
Int Delay, s/veh	106.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	93	108	41	7	26	10	126	393	52	20	180	162
Future Vol, veh/h	93	108	41	7	26	10	126	393	52	20	180	162
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	67	67	67	76	76	76	81	81	81
Heavy Vehicles, %	10	4	0	14	9	8	4	6	12	0	12	10
Mvmt Flow	107	124	47	10	39	15	166	517	68	25	222	200

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1183	1189	222	1241	1155	552	222	0	0	585	0	0
Stage 1	272	272	-	883	883	-	-	-	-	-	-	-
Stage 2	911	917	-	358	272	-	-	-	-	-	-	-
Critical Hdwy	7.2	6.54	6.2	7.24	6.59	6.28	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.59	4.036	3.3	3.626	4.081	3.372	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	160	186	823	143	191	522	1335	-	-	1000	-	0
Stage 1	717	681	-	324	354	-	-	-	-	-	-	0
Stage 2	318	348	-	636	672	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	~ 105	147	823	34	151	522	1335	-	-	1000	-	-
Mov Cap-2 Maneuver	~ 105	147	-	34	151	-	-	-	-	-	-	-
Stage 1	584	661	-	264	288	-	-	-	-	-	-	-
Stage 2	217	283	-	473	653	-	-	-	-	-	-	-






















Approach	EB		WB		NB		SB	
HCM Control Delay, s	489.7		72.2		1.8		0.9	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1335	-	-	145	87	522	1000	-
HCM Lane V/C Ratio	0.124	-	-	1.918	0.566	0.029	0.025	-
HCM Control Delay (s)	8.1	0	-	489.7	90.4	12.1	8.7	0
HCM Lane LOS	A	A	-	F	F	B	A	A
HCM 95th %tile Q(veh)	0.4	-	-	21.5	2.5	0.1	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

Existing Plus Approved Projects
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	233	93	459	409	61	128	321	233	25	193	33
Future Volume (veh/h)	40	233	93	459	409	61	128	321	233	25	193	33
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	48	277	111	596	531	79	160	401	291	35	268	46
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.77	0.77	0.77	0.80	0.80	0.80	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	389	278	111	403	360	54	182	338	246	51	392	67
Arrive On Green	0.22	0.22	0.22	0.23	0.23	0.23	0.11	0.38	0.38	0.03	0.29	0.29
Sat Flow, veh/h	1774	1266	507	1774	1585	236	1587	899	652	1521	1328	228
Grp Volume(v), veh/h	48	0	388	596	0	610	160	0	692	35	0	314
Grp Sat Flow(s),veh/h/ln	1774	0	1773	1774	0	1821	1587	0	1552	1521	0	1556
Q Serve(g_s), s	2.8	0.0	27.9	29.0	0.0	29.0	12.7	0.0	48.0	2.9	0.0	22.7
Cycle Q Clear(g_c), s	2.8	0.0	27.9	29.0	0.0	29.0	12.7	0.0	48.0	2.9	0.0	22.7
Prop In Lane	1.00		0.29	1.00		0.13	1.00		0.42	1.00		0.15
Lane Grp Cap(c), veh/h	389	0	389	403	0	414	182	0	584	51	0	459
V/C Ratio(X)	0.12	0.00	1.00	1.48	0.00	1.47	0.88	0.00	1.19	0.69	0.00	0.68
Avail Cap(c_a), veh/h	389	0	389	403	0	414	261	0	584	250	0	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.9	0.0	49.7	49.3	0.0	49.3	55.6	0.0	39.8	61.0	0.0	39.7
Incr Delay (d2), s/veh	0.1	0.0	44.7	228.0	0.0	225.8	15.8	0.0	99.9	6.0	0.0	1.2
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	1.4	0.0	18.4	39.7	0.0	40.5	6.4	0.0	36.6	1.3	0.0	9.9
LnGrp Delay(d),s/veh	40.0	0.0	94.5	277.3	0.0	275.1	71.4	0.0	139.6	67.0	0.0	41.0
LnGrp LOS	D		F	F		F	E		F	E		D
Approach Vol, veh/h		436			1206			852			349	
Approach Delay, s/veh		88.5			276.2			126.8			43.6	
Approach LOS		F			F			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.2	8.3	52.9		34.2	18.6	42.5				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 28	21.0	48.0		29.0	21.0	48.0				
Max Q Clear Time (g_c+I1), s		29.9	4.9	50.0		31.0	14.7	24.7				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			174.1									
HCM 2010 LOS			F									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Plus Approved Projects
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	425	9	162	331	120	2	259	284	215	362	5
Future Volume (veh/h)	37	425	9	162	331	120	2	259	284	215	362	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	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	1777	1900	1845	1743	1900	1827	1614	1900	1743	1880	1900
Adj Flow Rate, veh/h	49	567	12	213	436	158	2	305	334	279	470	6
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.85	0.85	0.85	0.77	0.77	0.77
Percent Heavy Veh, %	0	7	7	3	9	0	4	1	1	9	1	1
Cap, veh/h	301	594	13	252	699	632	307	401	358	312	1429	18
Arrive On Green	0.04	0.34	0.34	0.09	0.40	0.40	0.00	0.26	0.26	0.14	0.40	0.40
Sat Flow, veh/h	1810	1733	37	1757	1743	1577	1740	1533	1369	1660	3612	46
Grp Volume(v), veh/h	49	0	579	213	436	158	2	305	334	279	232	244
Grp Sat Flow(s),veh/h/ln	1810	0	1770	1757	1743	1577	1740	1533	1369	1660	1786	1871
Q Serve(g_s), s	1.8	0.0	33.9	8.0	21.2	7.1	0.1	19.5	25.3	12.5	9.6	9.6
Cycle Q Clear(g_c), s	1.8	0.0	33.9	8.0	21.2	7.1	0.1	19.5	25.3	12.5	9.6	9.6
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	301	0	606	252	699	632	307	401	358	312	707	740
V/C Ratio(X)	0.16	0.00	0.96	0.84	0.62	0.25	0.01	0.76	0.93	0.89	0.33	0.33
Avail Cap(c_a), veh/h	662	0	667	600	821	743	712	477	426	476	707	740
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	34.1	24.7	25.4	21.2	28.8	36.2	38.3	25.8	22.3	22.3
Incr Delay (d2), s/veh	0.1	0.0	22.6	3.0	0.6	0.1	0.0	4.6	23.7	9.6	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	0.9	0.0	20.4	4.1	10.3	3.1	0.0	8.7	11.9	6.5	4.7	5.0
LnGrp Delay(d),s/veh	22.3	0.0	56.7	27.7	26.0	21.3	28.8	40.8	62.1	35.4	22.4	22.4
LnGrp LOS	C		E	C	C	C	C	D	E	D	C	C
Approach Vol, veh/h		628			807			641			755	
Approach Delay, s/veh		54.0			25.5			51.8			27.2	
Approach LOS		D			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	47.1	18.6	32.6	14.0	41.0	4.3	46.9				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	25.0	50.0	25.0	33.0	31.0	40.0	25.0	33.0				
Max Q Clear Time (g_c+1), s	13.8	23.2	14.5	27.3	10.0	35.9	2.1	11.6				
Green Ext Time (p_c), s	0.0	0.4	0.1	0.4	0.0	0.4	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			38.2									
HCM 2010 LOS			D									

Intersection												
Int Delay, s/veh	254.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕			↕			↖	↗
Traffic Vol, veh/h	78	206	145	6	23	61	51	460	13	42	203	4
Future Vol, veh/h	78	206	145	6	23	61	51	460	13	42	203	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	71	71	71	77	77	77	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	14	14	14	19	19	19
Mvmt Flow	122	322	227	8	32	86	66	597	17	60	290	6

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1207	1156	290	1426	1154	606	296	0	0	614	0	0
Stage 1	410	410	-	738	738	-	-	-	-	-	-	-
Stage 2	797	746	-	688	416	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.24	-	-	4.29	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.326	-	-	2.371	-	-
Pot Cap-1 Maneuver	160	~ 197	749	113	197	497	1200	-	-	888	-	-
Stage 1	619	595	-	410	424	-	-	-	-	-	-	-
Stage 2	380	421	-	436	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 99	~ 166	749	-	166	497	1200	-	-	888	-	-
Mov Cap-2 Maneuver	~ 99	~ 166	-	-	166	-	-	-	-	-	-	-
Stage 1	567	547	-	376	388	-	-	-	-	-	-	-
Stage 2	264	386	-	115	544	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	694.7				0.8		1.6	
HCM LOS	F		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1200	-	-	140	749	-	888	-	-
HCM Lane V/C Ratio	0.055	-	-	3.17	0.302	-	0.068	-	-
HCM Control Delay (s)	8.2	0		\$ 1043.3	11.9	-	9.3	0	-
HCM Lane LOS	A	A	-	F	B	-	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	41.9	1.3	-	0.2	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	180.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	7	84	44	81	424	50	219	21	106	2	1	0
Future Vol, veh/h	7	84	44	81	424	50	219	21	106	2	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	69	69	69	58	58	58	75	75	75
Heavy Vehicles, %	0	0	42	25	10	0	53	0	40	0	100	0
Mvmt Flow	10	118	62	117	614	72	378	36	183	3	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	686	0	0	180	0	0	1054	1089	150	1164	1084	650
Stage 1	-	-	-	-	-	-	169	169	-	884	884	-
Stage 2	-	-	-	-	-	-	885	920	-	280	200	-
Critical Hdwy	4.1	-	-	4.35	-	-	7.63	6.5	6.6	7.1	7.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.63	5.5	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.63	5.5	-	6.1	6.5	-
Follow-up Hdwy	2.2	-	-	2.425	-	-	3.977	4	3.66	3.5	4.9	3.3
Pot Cap-1 Maneuver	917	-	-	1268	-	-	~ 164	217	806	173	147	473
Stage 1	-	-	-	-	-	-	727	763	-	343	256	-
Stage 2	-	-	-	-	-	-	~ 278	352	-	731	585	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	917	-	-	1268	-	-	~ 150	195	805	106	132	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 150	195	-	106	132	-
Stage 1	-	-	-	-	-	-	719	755	-	339	232	-
Stage 2	-	-	-	-	-	-	~ 251	320	-	532	579	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.2	\$ 480.5	38
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	150	531	917	-	-	1268	-	-	113
HCM Lane V/C Ratio	2.517	0.412	0.011	-	-	0.093	-	-	0.035
HCM Control Delay (s)	\$ 749.5	16.5	9	-	-	8.1	-	-	38
HCM Lane LOS	F	C	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	32.8	2	0	-	-	0.3	-	-	0.1

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 16029.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	0	1	0	1	489	414	338	527	28	84	400	0
Future Vol, veh/h	0	1	0	1	489	414	338	527	28	84	400	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	63	63	63	82	82	82	53	53	53
Heavy Vehicles, %	2	2	2	44	0	14	0	2	25	9	7	0
Mvmt Flow	0	4	0	2	776	657	412	643	34	158	755	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	3272	2572	755	2540	2538	643	755	0	0	677	0	0
Stage 1	1071	1071	-	1467	1467	-	-	-	-	-	-	-
Stage 2	2201	1501	-	1073	1071	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.54	6.5	6.34	4.1	-	-	4.19	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.54	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.54	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.896	4	3.426	2.2	-	-	2.281	-	-
Pot Cap-1 Maneuver	5	26	409	13	~28	~453	865	-	-	883	-	-
Stage 1	267	297	-	128	~194	-	-	-	-	-	-	-
Stage 2	59	185	-	222	~300	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	5	409	2	~5	~453	865	-	-	883	-	-
Mov Cap-2 Maneuver	-	5	-	2	~5	-	-	-	-	-	-	-
Stage 1	62	244	-	30	~45	-	-	-	-	-	-	-
Stage 2	100	43	-	179	~246	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 38436.7	4.9	1.7
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	865	-	-	-	2	5	453	883	-	-
HCM Lane V/C Ratio	0.477	-	-	-	0.794	1.552	1.451	0.179	-	-
HCM Control Delay (s)	12.9	0	-	\$ 256	\$ 708	\$ 49.4	238.7	10	-	-
HCM Lane LOS	B	A	-	-	F	F	F	A	-	-
HCM 95th %tile Q(veh)	2.6	-	-	-	0.7	99.3	33	0.7	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	555.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	601	189	0	0	119	56	16	149	3
Future Vol, veh/h	1	0	1	601	189	0	0	119	56	16	149	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	61	61	61	83	83	83	63	63	63
Heavy Vehicles, %	5	5	5	2	2	2	19	19	19	16	16	16
Mvmt Flow	4	0	4	985	310	0	0	143	67	25	237	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	622	500	240	469	469	177	242	0	0	210	0	0
Stage 1	290	290	-	177	177	-	-	-	-	-	-	-
Stage 2	332	210	-	292	292	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.12	6.52	6.22	4.29	-	-	4.26	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.518	4.018	3.318	2.371	-	-	2.344	-	-
Pot Cap-1 Maneuver	395	468	792	~ 505	492	866	1231	-	-	1282	-	-
Stage 1	711	667	-	~ 825	753	-	-	-	-	-	-	-
Stage 2	675	723	-	~ 716	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	188	457	792	~ 493	481	866	1231	-	-	1282	-	-
Mov Cap-2 Maneuver	188	457	-	~ 493	481	-	-	-	-	-	-	-
Stage 1	711	652	-	~ 825	753	-	-	-	-	-	-	-
Stage 2	397	723	-	~ 696	656	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	\$ 763.3	0	0.7
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1231	-	-	304	490	1282	-	-
HCM Lane V/C Ratio	-	-	-	0.026	2.643	0.02	-	-
HCM Control Delay (s)	0	-	-	17.2	\$ 763.3	7.9	0	-
HCM Lane LOS	A	-	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	105.2	0.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	524.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	125	9	27	814	105	1	147	36	2	80	1
Future Vol, veh/h	0	125	9	27	814	105	1	147	36	2	80	1
Peak Hour Factor	0.55	0.55	0.55	0.58	0.58	0.58	0.78	0.78	0.78	0.75	0.75	0.75
Heavy Vehicles, %	5	5	5	2	2	2	5	5	5	18	18	18
Mvmt Flow	0	227	16	47	1403	181	1	188	46	3	107	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.2	707.6	19.9	16.8
HCM LOS	C	F	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	0%	3%	2%
Vol Thru, %	80%	93%	86%	96%
Vol Right, %	20%	7%	11%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	184	134	946	83
LT Vol	1	0	27	2
Through Vol	147	125	814	80
RT Vol	36	9	105	1
Lane Flow Rate	236	244	1631	111
Geometry Grp	1	1	1	1
Degree of Util (X)	0.436	0.425	2.533	0.227
Departure Headway (Hd)	9.638	8.26	5.59	10.651
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	377	439	669	340
Service Time	7.638	6.26	3.621	8.651
HCM Lane V/C Ratio	0.626	0.556	2.438	0.326
HCM Control Delay	19.9	17.2	707.6	16.8
HCM Lane LOS	C	C	F	C
HCM 95th-tile Q	2.1	2.1	127.5	0.9

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	153	159	1130	414	7
Future Vol, veh/h	0	153	159	1130	414	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	87	87	77	77
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	0	213	183	1299	538	9

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	2208	543	547	0	0
Stage 1	543	-	-	-	-
Stage 2	1665	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-
Pot Cap-1 Maneuver	48	534	956	-	-
Stage 1	576	-	-	-	-
Stage 2	166	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	15	534	956	-	-
Mov Cap-2 Maneuver	15	-	-	-	-
Stage 1	180	-	-	-	-
Stage 2	166	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.1	1.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	956	-	534	-	-
HCM Lane V/C Ratio	0.191	-	0.398	-	-
HCM Control Delay (s)	9.7	0	16.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.7	-	1.9	-	-

Intersection						
Int Delay, s/veh	399.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	510	46	7	562	300	123
Future Vol, veh/h	510	46	7	562	300	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	76	76	76	76
Heavy Vehicles, %	8	8	14	14	19	19
Mvmt Flow	630	57	9	739	395	162

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1233	476	557	0	-	0
Stage 1	476	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.24	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.326	-	-	-
Pot Cap-1 Maneuver	~ 190	577	956	-	-	-
Stage 1	~ 613	-	-	-	-	-
Stage 2	~ 453	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 187	577	956	-	-	-
Mov Cap-2 Maneuver	~ 187	-	-	-	-	-
Stage 1	~ 603	-	-	-	-	-
Stage 2	~ 453	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	1158.2	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	956	-	198	-	-
HCM Lane V/C Ratio	0.01	-	3.467	-	-
HCM Control Delay (s)	8.8	\$	1158.2	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0	-	65	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	117					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	108	1066	53	19	552
Future Vol, veh/h	95	108	1066	53	19	552
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	83	83	79	79
Heavy Vehicles, %	29	29	16	16	17	17
Mvmt Flow	113	129	1284	64	24	699

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2063	1316	0	0	1348
Stage 1	1316	-	-	-	-
Stage 2	747	-	-	-	-
Critical Hdwy	6.69	6.49	-	-	4.27
Critical Hdwy Stg 1	5.69	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-
Follow-up Hdwy	3.761	3.561	-	-	2.353
Pot Cap-1 Maneuver	~ 50	169	-	-	465
Stage 1	220	-	-	-	-
Stage 2	423	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 46	169	-	-	465
Mov Cap-2 Maneuver	~ 46	-	-	-	-
Stage 1	220	-	-	-	-
Stage 2	387	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, \$	1118.3	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	75	465
HCM Lane V/C Ratio	-	-	3.222	0.052
HCM Control Delay (s)	-	\$ 1118.3	13.2	0
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	24.5	0.2

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	111	3	1	403	402	73
Future Vol, veh/h	111	3	1	403	402	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	86	86	77	77
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	154	4	1	469	522	95

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1041	570	617	0	-	0
Stage 1	570	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	251	515	899	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	250	515	899	-	-	-
Mov Cap-2 Maneuver	250	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	622	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.4	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	899	-	253	-	-
HCM Lane V/C Ratio	0.001	-	0.626	-	-
HCM Control Delay (s)	9	0	40.4	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	3.8	-	-

Intersection						
Int Delay, s/veh	9.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	379	96	6	395	154	22
Future Vol, veh/h	379	96	6	395	154	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	79	95	95	84	84
Heavy Vehicles, %	17	17	16	16	19	19
Mvmt Flow	519	122	6	416	183	26

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	641	0	1008 580
Stage 1	-	-	-	-	580 -
Stage 2	-	-	-	-	428 -
Critical Hdwy	-	-	4.26	-	6.59 6.39
Critical Hdwy Stg 1	-	-	-	-	5.59 -
Critical Hdwy Stg 2	-	-	-	-	5.59 -
Follow-up Hdwy	-	-	2.344	-	3.671 3.471
Pot Cap-1 Maneuver	-	-	880	-	248 484
Stage 1	-	-	-	-	528 -
Stage 2	-	-	-	-	623 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	880	-	246 484
Mov Cap-2 Maneuver	-	-	-	-	246 -
Stage 1	-	-	-	-	528 -
Stage 2	-	-	-	-	617 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	57.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	262	-	-	880	-
HCM Lane V/C Ratio	0.8	-	-	0.007	-
HCM Control Delay (s)	57.2	-	-	9.1	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	6.2	-	-	0	-

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	18	13	0	70	4	7	27	0	0	54	4
Future Vol, veh/h	7	18	13	0	70	4	7	27	0	0	54	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	77	77	77	75	75	75
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	9	24	17	0	93	5	9	35	0	0	72	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	177	128	75	148	130	35	77	0	0	35	0	0
Stage 1	75	75	-	53	53	-	-	-	-	-	-	-
Stage 2	102	53	-	95	77	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.39	6.79	6.49	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.761	4.261	3.561	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	747	730	939	762	713	966	1522	-	-	1576	-	-
Stage 1	891	799	-	896	800	-	-	-	-	-	-	-
Stage 2	862	817	-	849	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	665	726	939	725	709	966	1522	-	-	1576	-	-
Mov Cap-2 Maneuver	665	726	-	725	709	-	-	-	-	-	-	-
Stage 1	886	799	-	891	795	-	-	-	-	-	-	-
Stage 2	752	812	-	808	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.8	1.5	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	773	719	1576	-	-
HCM Lane V/C Ratio	0.006	-	-	0.066	0.137	-	-	-
HCM Control Delay (s)	7.4	0	-	10	10.8	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0	-	-

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	9	1	4	0	36	73	3	1	20	1
Future Vol, veh/h	1	1	9	1	4	0	36	73	3	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	39	39	39	42	42	42	72	72	72	69	69	69
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	3	3	23	2	10	0	50	101	4	1	29	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	240	237	30	248	235	103	30	0	0	105	0	0
Stage 1	32	32	-	203	203	-	-	-	-	-	-	-
Stage 2	208	205	-	45	32	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.39	6.79	6.49	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.761	4.261	3.561	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	678	634	995	653	621	883	1583	-	-	1486	-	-
Stage 1	940	834	-	741	686	-	-	-	-	-	-	-
Stage 2	755	700	-	905	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	652	612	995	619	599	883	1583	-	-	1486	-	-
Mov Cap-2 Maneuver	652	612	-	619	599	-	-	-	-	-	-	-
Stage 1	908	833	-	716	663	-	-	-	-	-	-	-
Stage 2	719	676	-	880	817	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	11.1	2.4	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1583	-	-	901	603	1486	-	-
HCM Lane V/C Ratio	0.032	-	-	0.031	0.02	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.1	11.1	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

Existing Plus Approved Projects
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	393	6	16	589	64	3	31	56	213	140	57
Future Volume (veh/h)	11	393	6	16	589	64	3	31	56	213	140	57
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	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	13	462	7	19	685	74	3	34	62	280	184	75
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.86	0.86	0.86	0.90	0.90	0.90	0.76	0.76	0.76
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	27	782	12	35	667	72	7	65	119	150	239	98
Arrive On Green	0.02	0.45	0.45	0.02	0.46	0.46	0.00	0.11	0.11	0.08	0.19	0.19
Sat Flow, veh/h	1675	1728	26	1560	1453	157	1774	592	1080	1774	1259	513
Grp Volume(v), veh/h	13	0	469	19	0	759	3	0	96	280	0	259
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1610	1774	0	1672	1774	0	1772
Q Serve(g_s), s	0.5	0.0	11.8	0.7	0.0	27.2	0.1	0.0	3.2	5.0	0.0	8.2
Cycle Q Clear(g_c), s	0.5	0.0	11.8	0.7	0.0	27.2	0.1	0.0	3.2	5.0	0.0	8.2
Prop In Lane	1.00		0.01	1.00		0.10	1.00		0.65	1.00		0.29
Lane Grp Cap(c), veh/h	27	0	794	35	0	739	7	0	184	150	0	337
V/C Ratio(X)	0.48	0.00	0.59	0.54	0.00	1.03	0.42	0.00	0.52	1.87	0.00	0.77
Avail Cap(c_a), veh/h	141	0	805	132	0	739	150	0	654	150	0	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.9	0.0	12.1	28.7	0.0	16.0	29.4	0.0	24.9	27.1	0.0	22.8
Incr Delay (d2), s/veh	12.4	0.0	1.1	12.1	0.0	40.2	34.0	0.0	2.3	416.4	0.0	3.7
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	0.3	0.0	5.8	0.4	0.0	20.2	0.1	0.0	1.6	19.7	0.0	4.4
LnGrp Delay(d),s/veh	41.3	0.0	13.3	40.7	0.0	56.3	63.5	0.0	27.2	443.5	0.0	26.5
LnGrp LOS	D		B	D		F	E		C	F		C
Approach Vol, veh/h		482			778			99			539	
Approach Delay, s/veh		14.0			55.9			28.3			243.1	
Approach LOS		B			E			C			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	9.0	12.3	5.3	32.6	4.2	17.1	5.0	33.0				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.2	5.0	27.2	5.0	23.2	5.0	27.2				
Max Q Clear Time (g_c+11), s	7.0	5.2	2.7	13.8	2.1	10.2	2.5	29.2				
Green Ext Time (p_c), s	0.0	0.4	0.0	2.2	0.0	1.1	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			97.0									
HCM 2010 LOS			F									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

Existing Plus Approved Projects
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	800	8	21	695	73	10	10	26	49	5	6
Future Volume (veh/h)	4	800	8	21	695	73	10	10	26	49	5	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	952	10	24	808	85	12	12	32	56	6	7
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.82	0.82	0.82	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	11	899	9	45	787	83	121	50	98	263	27	16
Arrive On Green	0.01	0.52	0.52	0.03	0.54	0.54	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1675	1738	18	1560	1458	153	222	475	929	1116	253	155
Grp Volume(v), veh/h	5	0	962	24	0	893	56	0	0	69	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1756	1560	0	1611	1625	0	0	1524	0	0
Q Serve(g_s), s	0.1	0.0	23.2	0.7	0.0	24.2	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	23.2	0.7	0.0	24.2	1.4	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.10	0.21		0.57	0.81		0.10
Lane Grp Cap(c), veh/h	11	0	909	45	0	869	269	0	0	306	0	0
V/C Ratio(X)	0.44	0.00	1.06	0.53	0.00	1.03	0.21	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	187	0	909	174	0	869	853	0	0	825	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.2	0.0	10.8	21.5	0.0	10.3	18.5	0.0	0.0	18.6	0.0	0.0
Incr Delay (d2), s/veh	25.0	0.0	46.6	9.5	0.0	37.7	0.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	22.6	0.4	0.0	19.5	0.7	0.0	0.0	0.8	0.0	0.0
LnGrp Delay(d),s/veh	47.1	0.0	57.4	31.0	0.0	48.0	18.9	0.0	0.0	19.0	0.0	0.0
LnGrp LOS	D		F	C		F	B			B		
Approach Vol, veh/h		967			917			56			69	
Approach Delay, s/veh		57.3			47.6			18.9			19.0	
Approach LOS		E			D			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		10.5	5.3	29.0		10.5	4.3	30.0				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	23.2		21.2	5.0	23.2				
Max Q Clear Time (g_c+1), s		3.4	2.7	25.2		3.7	2.1	26.2				
Green Ext Time (p_c), s		0.2	0.0	0.0		0.2	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			50.5									
HCM 2010 LOS			D									

Intersection						
Int Delay, s/veh	9.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	↘
Traffic Vol, veh/h	335	582	449	3	6	288
Future Vol, veh/h	335	582	449	3	6	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	78	78	69	69
Heavy Vehicles, %	11	11	14	14	2	2
Mvmt Flow	381	661	576	4	9	417

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	580	0	-	0	2001 578
Stage 1	-	-	-	-	578 -
Stage 2	-	-	-	-	1423 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	951	-	-	-	66 516
Stage 1	-	-	-	-	561 -
Stage 2	-	-	-	-	222 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	951	-	-	-	40 516
Mov Cap-2 Maneuver	-	-	-	-	40 -
Stage 1	-	-	-	-	336 -
Stage 2	-	-	-	-	222 -

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	36.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	951	-	-	-	40	516
HCM Lane V/C Ratio	0.4	-	-	-	0.217	0.809
HCM Control Delay (s)	11.3	-	-	-	118.4	35.2
HCM Lane LOS	B	-	-	-	F	E
HCM 95th %tile Q(veh)	1.9	-	-	-	0.7	7.8

Intersection

Int Delay, s/veh 5147.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	290	25	446	413	0	0	0	0	820	2	41
Future Vol, veh/h	0	290	25	446	413	0	0	0	0	820	2	41
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	92	92	92	25	25	25	95	95	95
Heavy Vehicles, %	0	4	0	14	0	0	0	0	0	39	4	2
Mvmt Flow	0	345	30	485	449	0	0	0	0	863	2	43

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	375	0	0		1779	1794	449
Stage 1	-	-	-	-	-	-		1419	1419	-
Stage 2	-	-	-	-	-	-		360	375	-
Critical Hdwy	-	-	-	4.24	-	-		6.79	6.54	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.79	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.79	5.54	-
Follow-up Hdwy	-	-	-	2.326	-	-		3.851	4.036	3.318
Pot Cap-1 Maneuver	0	-	-	1121	-	0		~ 73	80	610
Stage 1	0	-	-	-	-	0		~ 185	201	-
Stage 2	0	-	-	-	-	0		~ 631	614	-
Platoon blocked, %		-	-	-	-	-				
Mov Cap-1 Maneuver	-	-	-	1121	-	-		~ 31	0	610
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 31	0	-
Stage 1	-	-	-	-	-	-		~ 185	0	-
Stage 2	-	-	-	-	-	-		~ 268	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	5.5	\$ 12557.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1121	-	32
HCM Lane V/C Ratio	-	-	0.432	-	28.388
HCM Control Delay (s)	-	-	10.6	\$12557.7	
HCM Lane LOS	-	-	B	A	F
HCM 95th %tile Q(veh)	-	-	2.2	-	112.6

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	30	1080	0	0	856	1030	3	4	166	0	0	0
Future Vol, veh/h	30	1080	0	0	856	1030	3	4	166	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	94	94	94	90	90	90	25	25	25
Heavy Vehicles, %	10	8	0	0	10	21	0	50	20	0	0	0
Mvmt Flow	32	1137	0	0	911	1096	3	4	184	0	0	0


























Major/Minor	Major1	Major2		Minor1				
Conflicting Flow All	2007	0	-	-	0	2660	3208	1137
Stage 1	-	-	-	-	-	1201	1201	-
Stage 2	-	-	-	-	-	1459	2007	-
Critical Hdwy	4.2	-	-	-	-	6.4	7	6.4
Critical Hdwy Stg 1	-	-	-	-	-	5.4	6	-
Critical Hdwy Stg 2	-	-	-	-	-	5.4	6	-
Follow-up Hdwy	2.29	-	-	-	-	3.5	4.45	3.48
Pot Cap-1 Maneuver	268	-	0	0	-	25	6	226
Stage 1	-	-	0	0	-	288	210	-
Stage 2	-	-	0	0	-	216	77	-
Platoon blocked, %		-			-			
Mov Cap-1 Maneuver	268	-	-	-	-	17	0	226
Mov Cap-2 Maneuver	-	-	-	-	-	17	0	-
Stage 1	-	-	-	-	-	195	0	-
Stage 2	-	-	-	-	-	216	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0	127.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	186	268	-	-	-
HCM Lane V/C Ratio	1.033	0.118	-	-	-
HCM Control Delay (s)	127.1	20.2	0	-	-
HCM Lane LOS	F	C	A	-	-
HCM 95th %tile Q(veh)	8.9	0.4	-	-	-

HCM Signalized Intersection Capacity Analysis
3: Sperry Ave & Rogers Rd

Existing Plus Approved Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 										 
Traffic Volume (vph)	171	1008	267	113	235	126	278	8	117	394	0	920
Future Volume (vph)	171	1008	267	113	235	126	278	8	117	394	0	920
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493
Peak-hour factor, PHF	0.93	0.93	0.92	0.92	0.88	0.88	0.92	0.92	0.92	0.91	0.92	0.91
Adj. Flow (vph)	184	1084	290	123	267	143	302	9	127	433	0	1011
RTOR Reduction (vph)	0	0	111	0	0	100	0	0	106	0	0	402
Lane Group Flow (vph)	184	1084	179	123	267	43	302	9	21	0	433	609
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	20.9	46.0	46.0	14.5	39.6	39.6	22.0	22.0	22.0		26.0	46.9
Effective Green, g (s)	20.9	46.0	46.0	14.5	39.6	39.6	22.0	22.0	22.0		26.0	46.9
Actuated g/C Ratio	0.16	0.35	0.35	0.11	0.30	0.30	0.17	0.17	0.17		0.20	0.36
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	262	1143	551	194	483	474	295	310	263		351	885
v/s Ratio Prot	c0.11	c0.33		0.07	0.17		c0.17	0.00			c0.24	0.11
v/s Ratio Perm			0.11			0.03			0.01			0.14
v/c Ratio	0.70	0.95	0.32	0.63	0.55	0.09	1.02	0.03	0.08		1.23	0.69
Uniform Delay, d1	52.6	41.8	31.6	56.2	38.8	33.2	55.0	46.1	46.5		53.0	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.2	16.1	0.7	6.6	1.4	0.1	58.6	0.0	0.1		127.5	2.2
Delay (s)	60.8	57.9	32.3	62.8	40.1	33.3	113.6	46.1	46.6		180.5	38.6
Level of Service	E	E	C	E	D	C	F	D	D		F	D
Approach Delay (s)		53.5			43.5			92.8			81.1	
Approach LOS		D			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			66.5									E
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			132.0						23.5			
Intersection Capacity Utilization			78.5%									D
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

Existing Plus Approved Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↘		↖ ↗	↖ ↗	↖				↖		↖
Traffic Volume (veh/h)	131	548	0	5	308	86	0	0	0	72	0	87
Future Volume (veh/h)	131	548	0	5	308	86	0	0	0	72	0	87
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	139	583	0	6	342	96				112	0	136
Adj No. of Lanes	2	1	0	2	2	1				1	0	1
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90				0.64	0.64	0.64
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	236	841	0	34	1329	487				260	0	180
Arrive On Green	0.11	0.48	0.00	0.01	0.38	0.38				0.19	0.00	0.19
Sat Flow, veh/h	2167	1743	0	3510	3471	1272				1403	0	973
Grp Volume(v), veh/h	139	583	0	6	342	96				112	0	136
Grp Sat Flow(s),veh/h/ln	1083	1743	0	1755	1736	1272				1403	0	973
Q Serve(g_s), s	2.8	11.8	0.0	0.1	3.1	2.3				3.2	0.0	6.0
Cycle Q Clear(g_c), s	2.8	11.8	0.0	0.1	3.1	2.3				3.2	0.0	6.0
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	236	841	0	34	1329	487				260	0	180
V/C Ratio(X)	0.59	0.69	0.00	0.18	0.26	0.20				0.43	0.00	0.76
Avail Cap(c_a), veh/h	1476	1915	0	2391	3813	1397				1017	0	705
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	9.2	0.0	22.4	9.6	9.4				16.4	0.0	17.6
Incr Delay (d2), s/veh	2.3	2.2	0.0	2.5	0.2	0.4				1.1	0.0	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.0	0.0	0.0	1.5	2.0				1.3	0.0	3.4
LnGrp Delay(d),s/veh	21.6	11.4	0.0	24.8	9.8	9.8				17.6	0.0	23.9
LnGrp LOS	C	B		C	A	A				B		C
Approach Vol, veh/h		722			444						248	
Approach Delay, s/veh		13.3			10.0						21.0	
Approach LOS		B			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	4.9	27.7		12.9	9.5	23.1						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	31.0	50.0		33.0	31.0	50.0						
Max Q Clear Time (g_c+I), s	12.1	13.8		8.0	4.8	5.1						
Green Ext Time (p_c), s	0.0	8.1		0.8	0.5	5.3						
Intersection Summary												
HCM 2010 Ctrl Delay			13.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 5: Baldwin Rd & Sperry Ave

Existing Plus Approved Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	104	534	59	12	333	64	40	26	21	135	63	103
Future Volume (veh/h)	104	534	59	12	333	64	40	26	21	135	63	103
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		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	1850	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	114	587	65	13	374	72	51	33	27	169	79	129
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.78	0.78	0.78	0.80	0.80	0.80
Percent Heavy Veh, %	1	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	285	763	85	32	737	652	102	127	104	313	108	176
Arrive On Green	0.08	0.47	0.47	0.02	0.40	0.40	0.06	0.13	0.13	0.09	0.17	0.17
Sat Flow, veh/h	3476	1637	181	1660	1827	1615	1810	962	787	3476	650	1062
Grp Volume(v), veh/h	114	0	652	13	374	72	51	0	60	169	0	208
Grp Sat Flow(s),veh/h/ln	1738	0	1818	1660	1827	1615	1810	0	1748	1738	0	1713
Q Serve(g_s), s	2.0	0.0	18.9	0.5	9.7	1.8	1.7	0.0	2.0	2.9	0.0	7.3
Cycle Q Clear(g_c), s	2.0	0.0	18.9	0.5	9.7	1.8	1.7	0.0	2.0	2.9	0.0	7.3
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.45	1.00		0.62
Lane Grp Cap(c), veh/h	285	0	848	32	737	652	102	0	230	313	0	283
V/C Ratio(X)	0.40	0.00	0.77	0.40	0.51	0.11	0.50	0.00	0.26	0.54	0.00	0.73
Avail Cap(c_a), veh/h	1430	0	1381	552	1387	1226	601	0	913	1155	0	894
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	14.0	30.6	14.1	11.8	29.0	0.0	24.7	27.5	0.0	25.0
Incr Delay (d2), s/veh	0.3	0.0	3.2	16.5	1.2	0.2	1.4	0.0	0.6	0.5	0.0	3.7
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	0.0	0.0	10.2	0.4	5.1	0.8	0.9	0.0	1.0	1.4	0.0	3.7
LnGrp Delay(d),s/veh	27.9	0.0	17.2	47.2	15.3	11.9	30.4	0.0	25.3	28.0	0.0	28.7
LnGrp LOS	C		B	D	B	B	C		C	C		C
Approach Vol, veh/h		766			459			111			377	
Approach Delay, s/veh		18.8			15.7			27.6			28.4	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	35.0	7.7	15.1	9.4	31.0	9.9	12.9				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	48.0	* 21	33.0	* 26	48.0	* 21	33.0					
Max Q Clear Time (g_c+1), s	20.9	3.7	9.3	4.0	11.7	4.9	4.0					
Green Ext Time (p_c), s	0.0	8.6	0.0	1.2	0.2	5.3	0.2	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			20.6									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

Existing Plus Approved Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	542	33	57	468	62	18	56	39	52	38	48
Future Volume (veh/h)	86	542	33	57	468	62	18	56	39	52	38	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	571	35	59	488	65	22	70	49	66	48	61
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.80	0.80	0.80	0.79	0.79	0.79
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	168	1068	65	128	921	122	298	163	114	292	119	151
Arrive On Green	0.09	0.32	0.32	0.07	0.30	0.30	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1810	3361	206	1810	3114	413	1301	1040	728	1290	760	966
Grp Volume(v), veh/h	91	298	308	59	274	279	22	0	119	66	0	109
Grp Sat Flow(s),veh/h/ln	1810	1755	1811	1810	1754	1773	1301	0	1768	1290	0	1725
Q Serve(g_s), s	2.1	6.0	6.0	1.3	5.6	5.6	0.7	0.0	2.6	2.1	0.0	2.4
Cycle Q Clear(g_c), s	2.1	6.0	6.0	1.3	5.6	5.6	3.1	0.0	2.6	4.7	0.0	2.4
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	168	558	576	128	519	524	298	0	277	292	0	270
V/C Ratio(X)	0.54	0.53	0.54	0.46	0.53	0.53	0.07	0.00	0.43	0.23	0.00	0.40
Avail Cap(c_a), veh/h	1351	1474	1521	1351	1473	1489	883	0	1072	872	0	1046
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	12.0	12.0	19.1	12.6	12.6	17.7	0.0	16.3	18.5	0.0	16.3
Incr Delay (d2), s/veh	2.7	1.1	1.1	2.6	1.2	1.2	0.1	0.0	1.1	0.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.1	3.2	0.8	2.8	2.9	0.2	0.0	1.3	0.8	0.0	1.2
LnGrp Delay(d),s/veh	21.3	13.1	13.1	21.7	13.8	13.8	17.8	0.0	17.4	18.9	0.0	17.2
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		697			612			141			175	
Approach Delay, s/veh		14.2			14.6			17.5			17.8	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	20.1		13.2	10.5	19.2		13.2				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	32.0	36.0		26.0	32.0	36.0		26.0				
Max Q Clear Time (g_c+1), s	13.3	8.0		6.7	4.1	7.6		5.1				
Green Ext Time (p_c), s	0.1	5.3		0.8	0.2	5.0		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay			15.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

Existing Plus Approved Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	156	414	54	232	367	114	62	230	177	107	258	40
Future Volume (veh/h)	156	414	54	232	367	114	62	230	177	107	258	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1841	1900	1881	1845	1900	1845	1873	1900	1881	1900	1900
Adj Flow Rate, veh/h	161	427	56	252	399	124	75	277	213	123	297	46
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.83	0.83	0.83	0.87	0.87	0.87
Percent Heavy Veh, %	2	3	3	1	3	0	3	1	1	1	0	0
Cap, veh/h	197	602	79	289	820	375	98	315	242	156	672	557
Arrive On Green	0.11	0.19	0.19	0.16	0.23	0.23	0.06	0.32	0.32	0.09	0.35	0.35
Sat Flow, veh/h	1774	3105	405	1792	3505	1605	1757	977	751	1792	1900	1575
Grp Volume(v), veh/h	161	239	244	252	399	124	75	0	490	123	297	46
Grp Sat Flow(s),veh/h/ln	1774	1748	1761	1792	1752	1605	1757	0	1728	1792	1900	1575
Q Serve(g_s), s	8.5	12.3	12.4	13.2	9.4	6.2	4.0	0.0	25.7	6.5	11.5	1.9
Cycle Q Clear(g_c), s	8.5	12.3	12.4	13.2	9.4	6.2	4.0	0.0	25.7	6.5	11.5	1.9
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	197	339	342	289	820	375	98	0	557	156	672	557
V/C Ratio(X)	0.82	0.71	0.71	0.87	0.49	0.33	0.77	0.00	0.88	0.79	0.44	0.08
Avail Cap(c_a), veh/h	370	547	551	374	1170	535	385	0	613	392	672	557
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	36.1	36.2	39.3	31.8	30.5	44.7	0.0	30.7	42.9	23.7	20.6
Incr Delay (d2), s/veh	8.2	5.6	5.8	16.3	1.0	1.1	11.9	0.0	14.6	8.5	1.0	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	4.6	6.4	6.6	7.8	4.7	2.9	2.3	0.0	14.5	3.5	6.2	0.8
LnGrp Delay(d),s/veh	49.9	41.7	42.0	55.6	32.7	31.6	56.6	0.0	45.4	51.5	24.7	20.8
LnGrp LOS	D	D	D	E	C	C	E		D	D	C	C
Approach Vol, veh/h		644			775			565			466	
Approach Delay, s/veh		43.8			40.0			46.9			31.4	
Approach LOS		D			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.5	24.6	9.9	39.9	17.6	28.4	12.9	36.9				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	30.0	30.0	21.0	26.0	20.0	32.0	21.0	34.0				
Max Q Clear Time (g_c+1/2), s	14.4	14.4	6.0	13.5	10.5	11.4	8.5	27.7				
Green Ext Time (p_c), s	0.3	4.2	0.1	2.6	0.3	5.1	0.2	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay			40.9									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

Existing Plus Approved Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	319	72	25	386	16	35	34	5	5	93	233
Future Volume (veh/h)	178	319	72	25	386	16	35	34	5	5	93	233
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	185	332	75	28	434	18	47	46	7	6	106	265
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.89	0.89	0.89	0.74	0.74	0.74	0.88	0.88	0.88
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	476	1380	308	577	901	795	272	238	30	82	148	356
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	953	2797	624	993	1827	1612	524	793	99	8	493	1184
Grp Volume(v), veh/h	185	203	204	28	434	18	100	0	0	377	0	0
Grp Sat Flow(s),veh/h/ln	953	1721	1700	993	1827	1612	1416	0	0	1685	0	0
Q Serve(g_s), s	7.4	3.1	3.2	0.8	7.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.7	3.1	3.2	4.0	7.3	0.3	1.8	0.0	0.0	9.3	0.0	0.0
Prop In Lane	1.00		0.37	1.00		1.00	0.47		0.07	0.02		0.70
Lane Grp Cap(c), veh/h	476	849	839	577	901	795	540	0	0	586	0	0
V/C Ratio(X)	0.39	0.24	0.24	0.05	0.48	0.02	0.19	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	771	1382	1365	885	1467	1294	1099	0	0	1283	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.6	6.7	6.7	7.9	7.8	6.0	11.9	0.0	0.0	14.5	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.3	0.3	0.1	0.9	0.0	0.2	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.5	1.6	0.2	3.8	0.1	1.0	0.0	0.0	4.5	0.0	0.0
LnGrp Delay(d),s/veh	13.7	7.0	7.0	7.9	8.6	6.0	12.1	0.0	0.0	15.7	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		592			480			100			377	
Approach Delay, s/veh		9.1			8.5			12.1			15.7	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.3		18.7		27.3		18.7				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		37.0		33.0		37.0		33.0				
Max Q Clear Time (g_c+1), s		16.7		3.8		9.3		11.3				
Green Ext Time (p_c), s		6.1		0.6		5.8		2.6				
Intersection Summary												
HCM 2010 Ctrl Delay				10.7								
HCM 2010 LOS				B								

Intersection												
Int Delay, s/veh	123											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	105	72	84	14	50	6	127	307	55	34	428	314
Future Vol, veh/h	105	72	84	14	50	6	127	307	55	34	428	314
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	80	80	80	98	98	98	88	88	88
Heavy Vehicles, %	6	4	6	0	2	0	6	3	7	16	5	4
Mvmt Flow	122	84	98	18	63	8	130	313	56	39	486	357

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1201	1193	486	1256	1165	341	486	0	0	369	0	0
Stage 1	564	564	-	601	601	-	-	-	-	-	-	-
Stage 2	637	629	-	655	564	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.54	6.26	7.1	6.52	6.2	4.16	-	-	4.26	-	-
Critical Hdwy Stg 1	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.036	3.354	3.5	4.018	3.3	2.254	-	-	2.344	-	-
Pot Cap-1 Maneuver	159	185	573	150	194	706	1056	-	-	1116	-	0
Stage 1	503	505	-	491	489	-	-	-	-	-	-	0
Stage 2	459	472	-	458	508	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	~ 93	149	573	60	156	706	1056	-	-	1116	-	-
Mov Cap-2 Maneuver	~ 93	149	-	60	156	-	-	-	-	-	-	-
Stage 1	425	481	-	414	413	-	-	-	-	-	-	-
Stage 2	325	398	-	299	484	-	-	-	-	-	-	-






















Approach	EB		WB		NB		SB	
HCM Control Delay, s	545.6		80.1		2.3		0.6	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1056	-	-	148	116	706	1116	-
HCM Lane V/C Ratio	0.123	-	-	2.051	0.69	0.011	0.035	-
HCM Control Delay (s)	8.9	0	-	545.6	86.7	10.2	8.3	0
HCM Lane LOS	A	A	-	F	F	B	A	A
HCM 95th %tile Q(veh)	0.4	-	-	24.1	3.7	0	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
10: SR-33 & M St/Walnut Ave

Existing Plus Approved Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	219	143	304	341	49	49	332	109	111	567	25
Future Volume (veh/h)	30	219	143	304	341	49	49	332	109	111	567	25
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1545	1545	1900	1570	1570	1900
Adj Flow Rate, veh/h	35	258	168	380	426	61	53	361	118	121	616	27
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.80	0.80	0.80	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	23	23	23	21	21	21
Cap, veh/h	377	224	146	390	350	50	64	374	122	141	576	25
Arrive On Green	0.21	0.21	0.21	0.22	0.22	0.22	0.04	0.34	0.34	0.09	0.39	0.39
Sat Flow, veh/h	1774	1055	687	1774	1594	228	1471	1116	365	1495	1493	65
Grp Volume(v), veh/h	35	0	426	380	0	487	53	0	479	121	0	643
Grp Sat Flow(s),veh/h/ln	1774	0	1742	1774	0	1822	1471	0	1480	1495	0	1559
Q Serve(g_s), s	2.1	0.0	28.0	28.1	0.0	29.0	4.7	0.0	42.0	10.5	0.0	50.8
Cycle Q Clear(g_c), s	2.1	0.0	28.0	28.1	0.0	29.0	4.7	0.0	42.0	10.5	0.0	50.8
Prop In Lane	1.00		0.39	1.00		0.13	1.00		0.25	1.00		0.04
Lane Grp Cap(c), veh/h	377	0	370	390	0	401	64	0	496	141	0	601
V/C Ratio(X)	0.09	0.00	1.15	0.97	0.00	1.22	0.82	0.00	0.97	0.86	0.00	1.07
Avail Cap(c_a), veh/h	377	0	370	390	0	401	234	0	539	238	0	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	52.0	51.1	0.0	51.5	62.6	0.0	43.1	58.9	0.0	40.5
Incr Delay (d2), s/veh	0.0	0.0	95.1	38.5	0.0	117.8	9.4	0.0	28.5	6.8	0.0	56.9
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	1.0	0.0	23.2	17.9	0.0	27.7	2.1	0.0	21.1	4.6	0.0	31.4
LnGrp Delay(d),s/veh	41.8	0.0	147.1	89.6	0.0	169.3	72.0	0.0	71.6	65.7	0.0	97.5
LnGrp LOS	D		F	F		F	E		E	E		F
Approach Vol, veh/h		461			867			532			764	
Approach Delay, s/veh		139.1			134.3			71.6			92.4	
Approach LOS		F			F			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.2	16.4	49.1		34.2	9.8	55.7				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 28	21.0	48.0		29.0	21.0	48.0				
Max Q Clear Time (g_c+I1), s		30.0	12.5	44.0		31.0	6.7	52.8				
Green Ext Time (p_c), s		0.0	0.0	0.3		0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			110.3									
HCM 2010 LOS			F									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Plus Approved Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	263	9	201	319	69	20	198	265	323	652	8
Future Volume (veh/h)	20	263	9	201	319	69	20	198	265	323	652	8
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1868	1900	1810	1900	1900	1900	1845	1900	1881	1811	1900
Adj Flow Rate, veh/h	22	292	10	221	351	76	22	218	291	419	847	10
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.77	0.77	0.77
Percent Heavy Veh, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	290	397	14	377	601	498	274	391	346	490	1377	16
Arrive On Green	0.02	0.22	0.22	0.12	0.32	0.32	0.02	0.22	0.22	0.20	0.40	0.40
Sat Flow, veh/h	1723	1794	61	1723	1900	1576	1810	1752	1550	1792	3481	41
Grp Volume(v), veh/h	22	0	302	221	351	76	22	218	291	419	419	438
Grp Sat Flow(s),veh/h/ln	1723	0	1855	1723	1900	1576	1810	1752	1550	1792	1720	1802
Q Serve(g_s), s	0.7	0.0	11.1	6.8	11.4	2.5	0.7	8.1	13.2	12.4	14.2	14.2
Cycle Q Clear(g_c), s	0.7	0.0	11.1	6.8	11.4	2.5	0.7	8.1	13.2	12.4	14.2	14.2
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	290	0	411	377	601	498	274	391	346	490	681	713
V/C Ratio(X)	0.08	0.00	0.74	0.59	0.58	0.15	0.08	0.56	0.84	0.85	0.61	0.61
Avail Cap(c_a), veh/h	835	0	1013	900	1296	1075	847	789	698	749	775	812
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	26.5	18.3	21.0	18.0	21.0	25.2	27.2	16.7	17.7	17.7
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.5	0.3	0.1	0.0	0.5	2.1	3.9	0.6	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	0.3	0.0	5.8	3.2	6.0	1.1	0.3	3.9	5.8	6.5	6.9	7.2
LnGrp Delay(d),s/veh	21.3	0.0	27.5	18.8	21.3	18.1	21.0	25.7	29.3	20.6	18.3	18.3
LnGrp LOS	C		C	B	C	B	C	C	C	C	B	B
Approach Vol, veh/h		324			648			531			1276	
Approach Delay, s/veh		27.1			20.1			27.5			19.1	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	27.8	18.4	21.3	12.8	20.8	5.8	33.9				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	25.0	50.0	25.0	33.0	31.0	40.0	25.0	33.0				
Max Q Clear Time (g_c+I), s	12.7	13.4	14.4	15.2	8.8	13.1	2.7	16.2				
Green Ext Time (p_c), s	0.0	0.3	0.1	0.5	0.0	0.4	0.0	0.7				
Intersection Summary												
HCM 2010 Ctrl Delay				21.9								
HCM 2010 LOS				C								

Intersection												
Int Delay, s/veh	54											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	↗
Traffic Vol, veh/h	38	127	127	11	47	54	47	216	5	88	625	23
Future Vol, veh/h	38	127	127	11	47	54	47	216	5	88	625	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	92	92	92	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	23	23	23	21	21	21
Mvmt Flow	46	155	155	13	57	66	51	235	5	97	687	25

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1282	1223	687	1389	1246	238	712	0	0	240	0	0
Stage 1	881	881	-	340	340	-	-	-	-	-	-	-
Stage 2	401	342	-	1049	906	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.33	-	-	4.31	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.407	-	-	2.389	-	-
Pot Cap-1 Maneuver	142	179	447	120	174	801	798	-	-	1223	-	-
Stage 1	341	365	-	675	639	-	-	-	-	-	-	-
Stage 2	626	638	-	275	355	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	76	~ 144	447	-	140	801	798	-	-	1223	-	-
Mov Cap-2 Maneuver	76	~ 144	-	-	140	-	-	-	-	-	-	-
Stage 1	316	317	-	625	592	-	-	-	-	-	-	-
Stage 2	481	591	-	80	308	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	238		1.7	1
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	798	-	-	119	447	-	1223	-	-
HCM Lane V/C Ratio	0.064	-	-	1.691	0.346	-	0.079	-	-
HCM Control Delay (s)	9.8	0	-	407.9	17.3	-	8.2	0	-
HCM Lane LOS	A	A	-	F	C	-	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	15.2	1.5	-	0.3	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	438											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	8	596	387	42	37	1	149	10	190	0	3	1
Future Vol, veh/h	8	596	387	42	37	1	149	10	190	0	3	1
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	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	50	50	50	37	37	37	50	50	50
Heavy Vehicles, %	100	4	8	0	15	0	3	100	3	0	100	100
Mvmt Flow	12	876	569	84	74	2	403	27	514	0	6	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	1445	0	0	1432	1429	1161	1698	1712	75
Stage 1	-	-	-	-	-	-	1185	1185	-	243	243	-
Stage 2	-	-	-	-	-	-	247	244	-	1455	1469	-
Critical Hdwy	5.1	-	-	4.1	-	-	7.13	7.5	6.23	7.1	7.5	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	6.5	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	6.5	-	6.1	6.5	-
Follow-up Hdwy	3.1	-	-	2.2	-	-	3.527	4.9	3.327	3.5	4.9	4.2
Pot Cap-1 Maneuver	1077	-	-	475	-	-	~ 111	85	~ 237	74	54	770
Stage 1	-	-	-	-	-	-	~ 229	174	-	765	556	-
Stage 2	-	-	-	-	-	-	755	556	-	163	120	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1077	-	-	475	-	-	~ 85	69	~ 237	-	44	770
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 85	69	-	-	44	-
Stage 1	-	-	-	-	-	-	~ 226	172	-	757	458	-
Stage 2	-	-	-	-	-	-	612	458	-	-	119	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	7.5	\$ 1191.4	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	85	211	1077	-	-	475	-	-	-
HCM Lane V/C Ratio	4.738	2.562	0.011	-	-	0.177	-	-	-
HCM Control Delay (s)	\$ 1781.4	\$ 751.8	8.4	-	-	14.2	-	-	-
HCM Lane LOS	F	F	A	-	-	B	-	-	-
HCM 95th %tile Q(veh)	43.2	45.6	0	-	-	0.6	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔		↕		↕		↕↔	↕	↕	↕	↕
Traffic Vol, veh/h	0	496	226	29	131	153	249	393	33	291	621	0
Future Vol, veh/h	0	496	226	29	131	153	249	393	33	291	621	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	69	69	69	86	86	86	72	72	72
Heavy Vehicles, %	2	2	2	28	0	4	0	22	27	4	13	0
Mvmt Flow	0	1984	904	42	190	222	290	457	38	404	863	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2933	2746	863	4152	2708	457	863	0	0	495	0	0
Stage 1	1671	1671	-	1037	1037	-	-	-	-	-	-	-
Stage 2	1262	1075	-	3115	1671	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.38	6.5	6.24	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.38	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.38	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.752	4	3.336	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	9	~ 20	~ 354	~ 1	~ 21	599	788	-	-	1058	-	-
Stage 1	121	~ 153	-	250	311	-	-	-	-	-	-	-
Stage 2	208	~ 296	-	~ 13	~ 154	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 6	~ 354	-	~ 6	599	788	-	-	1058	-	-
Mov Cap-2 Maneuver	-	~ 6	-	-	~ 6	-	-	-	-	-	-	-
Stage 1	59	~ 95	-	122	~ 152	-	-	-	-	-	-	-
Stage 2	-	~ 145	-	248	~ 95	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					4.5		3.3	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	788	-	-	-	-	-	599	1058	-	-
HCM Lane V/C Ratio	0.367	-	-	-	-	-	0.37	0.382	-	-
HCM Control Delay (s)	12.2	0	-	-	-	-	14.5	10.5	-	-
HCM Lane LOS	B	A	-	-	-	-	B	B	-	-
HCM 95th %tile Q(veh)	1.7	-	-	-	-	-	1.7	1.8	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	3848.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	177	344	0	250	0	0	1	498	390	0	224	0
Future Vol, veh/h	177	344	0	250	0	0	1	498	390	0	224	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	86	86	86	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	8	8	8	18	18	18	16	16	16
Mvmt Flow	708	1376	0	291	0	0	1	692	542	0	311	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1276	1547	311	1964	1276	963	311	0	0	1234	0	0
Stage 1	311	311	-	965	965	-	-	-	-	-	-	-
Stage 2	965	1236	-	999	311	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.18	6.58	6.28	4.28	-	-	4.26	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.572	4.072	3.372	2.362	-	-	2.344	-	-
Pot Cap-1 Maneuver	~ 144	~ 114	729	~ 46	162	302	1164	-	-	519	-	-
Stage 1	~ 699	~ 658	-	299	326	-	-	-	-	-	-	-
Stage 2	~ 306	~ 248	-	~ 286	648	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 144	~ 114	729	-	162	302	1164	-	-	519	-	-
Mov Cap-2 Maneuver	~ 144	~ 114	-	-	162	-	-	-	-	-	-	-
Stage 1	~ 697	~ 658	-	298	325	-	-	-	-	-	-	-
Stage 2	~ 305	~ 247	-	-	648	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, \$	7239.6		0	0
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	123	-	519	-	-
HCM Lane V/C Ratio	0.001	-	-	16.943	-	-	-	-
HCM Control Delay (s)	8.1	0		\$ 7239.6	-	0	-	-
HCM Lane LOS	A	A	-	F	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	248.3	-	0	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	290.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	822	8	17	257	1	5	165	14	2	150	0
Future Vol, veh/h	0	822	8	17	257	1	5	165	14	2	150	0
Peak Hour Factor	0.72	0.72	0.72	0.86	0.86	0.86	0.80	0.80	0.80	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	8	8	8	9	9	9	14	14	14
Mvmt Flow	0	1142	11	20	299	1	6	206	18	2	163	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	457.6	22.6	20.2	18
HCM LOS	F	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	6%	1%
Vol Thru, %	90%	99%	93%	99%
Vol Right, %	8%	1%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	184	830	275	152
LT Vol	5	0	17	2
Through Vol	165	822	257	150
RT Vol	14	8	1	0
Lane Flow Rate	230	1153	320	165
Geometry Grp	1	1	1	1
Degree of Util (X)	0.466	1.969	0.597	0.351
Departure Headway (Hd)	9.316	6.15	8.191	9.805
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	391	599	444	370
Service Time	7.316	4.221	6.191	7.805
HCM Lane V/C Ratio	0.588	1.925	0.721	0.446
HCM Control Delay	20.2	457.6	22.6	18
HCM Lane LOS	C	F	C	C
HCM 95th-tile Q	2.4	75.7	3.8	1.5

Intersection						
Int Delay, s/veh	669.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			L		R
Traffic Vol, veh/h	39	806	45	576	936	12
Future Vol, veh/h	39	806	45	576	936	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	76	76	94	94
Heavy Vehicles, %	2	2	1	11	14	14
Mvmt Flow	55	1135	59	758	996	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1879	1003	1009	0	-	0
Stage 1	1003	-	-	-	-	-
Stage 2	876	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	78	~ 294	691	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	67	~ 294	691	-	-	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	303	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	1695.5	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	254	-	-
HCM Lane V/C Ratio	0.086	-	4.686	-	-
HCM Control Delay (s)	10.7	\$	1695.5	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	120.7	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	187.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	255	14	5	260	999	353
Future Vol, veh/h	255	14	5	260	999	353
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	84	84	95	95
Heavy Vehicles, %	9	9	23	23	21	21
Mvmt Flow	359	20	6	310	1052	372

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1560	1238	1424	0	-	0
Stage 1	1238	-	-	-	-	-
Stage 2	322	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.33	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.407	-	-	-
Pot Cap-1 Maneuver	~ 119	207	418	-	-	-
Stage 1	~ 265	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 117	207	418	-	-	-
Mov Cap-2 Maneuver	~ 117	-	-	-	-	-
Stage 1	~ 260	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	1047.9	0.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	418	-	120	-	-
HCM Lane V/C Ratio	0.014	-	3.157	-	-
HCM Control Delay (s)	13.7	\$	1047.9	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0	-	36.3	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	81	54	482	34	140	1639
Future Vol, veh/h	81	54	482	34	140	1639
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	71	71	77	77	96	96
Heavy Vehicles, %	9	9	11	11	14	14
Mvmt Flow	114	76	626	44	146	1707

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2647	648	0	0	670	0
Stage 1	648	-	-	-	-	-
Stage 2	1999	-	-	-	-	-
Critical Hdwy	6.49	6.29	-	-	4.24	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	-	-	2.326	-
Pot Cap-1 Maneuver	~ 24	458	-	-	866	-
Stage 1	508	-	-	-	-	-
Stage 2	~ 110	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	0	458	-	-	866	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.3	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	458	866
HCM Lane V/C Ratio	-	-	0.415	0.168
HCM Control Delay (s)	-	-	18.3	10
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2	0.6

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	24.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	133	12	0	339	958	108
Future Vol, veh/h	133	12	0	339	958	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	76	76	88	88
Heavy Vehicles, %	9	9	1	11	14	14
Mvmt Flow	148	13	0	446	1089	123

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1597	1151	1212	0	-	0
Stage 1	1151	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.11	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.209	-	-	-
Pot Cap-1 Maneuver	~ 113	233	579	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 113	233	579	-	-	-
Mov Cap-2 Maneuver	~ 113	-	-	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	631	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	277.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	579	-	118	-	-
HCM Lane V/C Ratio	-	-	1.365	-	-
HCM Control Delay (s)	0	-	277.4	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	10.9	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	265.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	1077	109	5	284	297	25
Future Vol, veh/h	1077	109	5	284	297	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	82	82	80	80
Heavy Vehicles, %	11	11	14	14	18	18
Mvmt Flow	1210	122	6	346	371	31

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1332	0	1629 1271
Stage 1	-	-	-	-	1271 -
Stage 2	-	-	-	-	358 -
Critical Hdwy	-	-	4.24	-	6.58 6.38
Critical Hdwy Stg 1	-	-	-	-	5.58 -
Critical Hdwy Stg 2	-	-	-	-	5.58 -
Follow-up Hdwy	-	-	2.326	-	3.662 3.462
Pot Cap-1 Maneuver	-	-	481	-	~ 102 189
Stage 1	-	-	-	-	~ 244 -
Stage 2	-	-	-	-	673 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	481	-	~ 100 189
Mov Cap-2 Maneuver	-	-	-	-	~ 100 -
Stage 1	-	-	-	-	~ 244 -
Stage 2	-	-	-	-	663 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 1376.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	104	-	-	481	-
HCM Lane V/C Ratio	3.87	-	-	0.013	-
HCM Control Delay (s)	\$ 1376.3	-	-	12.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	41	-	-	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	44	6	0	19	2	3	48	5	10	77	4
Future Vol, veh/h	7	44	6	0	19	2	3	48	5	10	77	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	54	54	54	50	50	50	79	79	79
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	9	59	8	0	35	4	6	96	10	13	97	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	259	244	100	272	241	101	102	0	0	106	0	0
Stage 1	126	126	-	113	113	-	-	-	-	-	-	-
Stage 2	133	118	-	159	128	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	682	648	939	666	649	936	1490	-	-	1485	-	-
Stage 1	864	780	-	875	789	-	-	-	-	-	-	-
Stage 2	856	787	-	827	777	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	644	640	939	608	641	936	1490	-	-	1485	-	-
Mov Cap-2 Maneuver	644	640	-	608	641	-	-	-	-	-	-	-
Stage 1	861	773	-	872	786	-	-	-	-	-	-	-
Stage 2	811	784	-	751	770	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	10.8	0.4	0.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1490	-	-	663	661	1485	-	-
HCM Lane V/C Ratio	0.004	-	-	0.115	0.059	0.009	-	-
HCM Control Delay (s)	7.4	0	-	11.1	10.8	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0	-	-

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	40	2	4	1	9	19	9	3	51	1
Future Vol, veh/h	3	3	40	2	4	1	9	19	9	3	51	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	58	58	58	91	91	91	72	72	72
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	4	4	60	3	7	2	10	21	10	4	71	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	131	131	72	158	126	26	72	0	0	31	0	0
Stage 1	80	80	-	46	46	-	-	-	-	-	-	-
Stage 2	51	51	-	112	80	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	828	749	974	792	752	1030	1528	-	-	1582	-	-
Stage 1	914	817	-	950	843	-	-	-	-	-	-	-
Stage 2	947	841	-	876	815	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	815	742	974	734	744	1030	1528	-	-	1582	-	-
Mov Cap-2 Maneuver	815	742	-	734	744	-	-	-	-	-	-	-
Stage 1	908	815	-	943	837	-	-	-	-	-	-	-
Stage 2	931	835	-	815	813	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		9.7		1.8		0.4	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	943	772	1582	-	-
HCM Lane V/C Ratio	0.006	-	-	0.073	0.016	0.003	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

Existing Plus Approved Project
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	384	7	42	636	51	5	26	50	184	89	41
Future Volume (veh/h)	7	384	7	42	636	51	5	26	50	184	89	41
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	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	8	422	8	46	699	56	6	33	64	207	100	46
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.78	0.78	0.78	0.89	0.89	0.89
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	17	703	13	77	744	60	14	58	113	154	220	101
Arrive On Green	0.01	0.42	0.42	0.05	0.46	0.46	0.01	0.10	0.10	0.09	0.18	0.18
Sat Flow, veh/h	1616	1659	31	1691	1623	130	1774	568	1101	1774	1209	556
Grp Volume(v), veh/h	8	0	430	46	0	755	6	0	97	207	0	146
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1668	1774	0	1765
Q Serve(g_s), s	0.3	0.0	11.3	1.5	0.0	23.5	0.2	0.0	3.2	5.0	0.0	4.2
Cycle Q Clear(g_c), s	0.3	0.0	11.3	1.5	0.0	23.5	0.2	0.0	3.2	5.0	0.0	4.2
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.32
Lane Grp Cap(c), veh/h	17	0	717	77	0	804	14	0	171	154	0	321
V/C Ratio(X)	0.47	0.00	0.60	0.60	0.00	0.94	0.43	0.00	0.57	1.34	0.00	0.46
Avail Cap(c_a), veh/h	141	0	801	147	0	830	154	0	674	154	0	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	0.0	12.8	26.9	0.0	14.8	28.4	0.0	24.6	26.2	0.0	21.0
Incr Delay (d2), s/veh	19.3	0.0	1.0	7.3	0.0	17.9	19.0	0.0	2.9	190.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	5.5	0.9	0.0	15.1	0.2	0.0	1.6	10.6	0.0	2.2
LnGrp Delay(d),s/veh	47.5	0.0	13.8	34.3	0.0	32.7	47.4	0.0	27.5	216.3	0.0	22.0
LnGrp LOS	D		B	C		C	D		C	F		C
Approach Vol, veh/h		438			801			103			353	
Approach Delay, s/veh		14.4			32.8			28.6			135.9	
Approach LOS		B			C			C			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	9.0	11.7	6.6	30.1	4.5	16.2	4.6	32.1				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.2	5.0	27.2	5.0	23.2	5.0	27.2				
Max Q Clear Time (g_c+I1), s	7.0	5.2	3.5	13.3	2.2	6.2	2.3	25.5				
Green Ext Time (p_c), s	0.0	0.4	0.0	2.0	0.0	0.6	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			49.3									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

Existing Plus Approved Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	594	9	53	852	55	9	12	20	157	42	20
Future Volume (veh/h)	5	594	9	53	852	55	9	12	20	157	42	20
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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	660	10	55	878	57	11	15	25	171	46	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.97	0.97	0.97	0.79	0.79	0.79	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	13	721	11	90	788	51	124	140	171	333	67	28
Arrive On Green	0.01	0.43	0.43	0.05	0.48	0.48	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1616	1667	25	1691	1650	107	182	690	838	1032	328	138
Grp Volume(v), veh/h	6	0	670	55	0	935	51	0	0	239	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1710	0	0	1498	0	0
Q Serve(g_s), s	0.2	0.0	18.7	1.6	0.0	24.0	0.0	0.0	0.0	6.3	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	18.7	1.6	0.0	24.0	1.2	0.0	0.0	7.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	13	0	732	90	0	839	435	0	0	428	0	0
V/C Ratio(X)	0.46	0.00	0.92	0.61	0.00	1.11	0.12	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	161	0	782	168	0	839	782	0	0	746	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.8	0.0	13.4	23.3	0.0	13.1	16.4	0.0	0.0	18.8	0.0	0.0
Incr Delay (d2), s/veh	23.8	0.0	14.9	6.5	0.0	67.2	0.1	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	11.6	0.9	0.0	27.1	0.6	0.0	0.0	3.3	0.0	0.0
LnGrp Delay(d),s/veh	48.6	0.0	28.3	29.8	0.0	80.3	16.5	0.0	0.0	19.9	0.0	0.0
LnGrp LOS	D		C	C		F	B			B		
Approach Vol, veh/h		676			990			51			239	
Approach Delay, s/veh		28.5			77.5			16.5			19.9	
Approach LOS		C			E			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		16.0	6.7	27.5		16.0	4.4	29.8				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	23.2		21.2	5.0	23.2				
Max Q Clear Time (g_c+1), s		3.2	3.6	20.7		9.5	2.2	26.0				
Green Ext Time (p_c), s		0.1	0.0	1.0		0.9	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				51.9								
HCM 2010 LOS				D								

Intersection						
Int Delay, s/veh	33.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	224	794	527	0	6	490
Future Vol, veh/h	224	794	527	0	6	490
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	82	82	87	87
Heavy Vehicles, %	11	11	5	5	2	2
Mvmt Flow	252	892	643	0	7	563

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	643	0	0 2039 643
Stage 1	-	-	- 643 -
Stage 2	-	-	- 1396 -
Critical Hdwy	4.21	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.299	-	- 3.518 3.318
Pot Cap-1 Maneuver	900	-	- 62 ~ 473
Stage 1	-	-	- 523 -
Stage 2	-	-	- 229 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	900	-	- 45 ~ 473
Mov Cap-2 Maneuver	-	-	- 45 -
Stage 1	-	-	- 377 -
Stage 2	-	-	- 229 -

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	132.1
HCM LOS			F























Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	900	-	-	-	45	473
HCM Lane V/C Ratio	0.28	-	-	-	0.153	1.191
HCM Control Delay (s)	10.5	-	-	-	99	132.5
HCM Lane LOS	B	-	-	-	F	F
HCM 95th %tile Q(veh)	1.1	-	-	-	0.5	21.2

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis
 1: I-5 SB Ramps & Sperry Ave

Existing Plus Approved (Mitigated)

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 					 	 	
Traffic Volume (vph)	0	512	9	137	61	0	0	0	0	394	2	35
Future Volume (vph)	0	512	9	137	61	0	0	0	0	394	2	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		1.00		1.00	1.00					1.00	0.98	
Flt Protected		1.00		0.95	0.98					0.95	0.96	
Satd. Flow (prot)		3535		1406	1488					1394	1385	
Flt Permitted		1.00		0.95	0.98					0.95	0.96	
Satd. Flow (perm)		3535		1406	1488					1394	1385	
Peak-hour factor, PHF	0.68	0.68	0.68	0.76	0.76	0.76	0.25	0.25	0.25	0.88	0.88	0.88
Adj. Flow (vph)	0	753	13	180	80	0	0	0	0	448	2	40
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	765	0	128	132	0	0	0	0	246	238	0
Confl. Peds. (#/hr)						1						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	1%	50%	22%	17%	0%	0%	0%	0%	23%	25%	17%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		27.6		14.2	14.2					44.0	44.0	
Effective Green, g (s)		27.6		14.2	14.2					44.0	44.0	
Actuated g/C Ratio		0.28		0.14	0.14					0.44	0.44	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		975		199	211					613	609	
v/s Ratio Prot		c0.22		c0.09	0.09					c0.18	0.17	
v/s Ratio Perm												
v/c Ratio		0.78		0.64	0.63					0.40	0.39	
Uniform Delay, d1		33.4		40.5	40.4					19.0	18.9	
Progression Factor		1.00		0.74	0.74					1.00	1.00	
Incremental Delay, d2		4.2		6.9	5.6					2.0	1.9	
Delay (s)		37.6		36.9	35.5					21.0	20.8	
Level of Service		D		D	D					C	C	
Approach Delay (s)		37.6			36.2			0.0			20.9	
Approach LOS		D			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			32.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			14.2			
Intersection Capacity Utilization			43.7%			ICU Level of Service			A			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & Sperry Ave

Existing Plus Approved (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗		↕	↗↗			
Traffic Volume (vph)	172	734	0	0	176	707	22	11	819	0	0	0
Future Volume (vph)	172	734	0	0	176	707	22	11	819	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.99			1.00	1.00		0.97	1.00			
Satd. Flow (prot)		3166			2959	1468		1838	2450			
Flt Permitted		0.99			1.00	1.00		0.97	1.00			
Satd. Flow (perm)		3166			2959	1468		1838	2450			
Peak-hour factor, PHF	0.84	0.84	0.84	0.90	0.90	0.90	0.82	0.82	0.82	0.25	0.25	0.25
Adj. Flow (vph)	205	874	0	0	196	786	27	13	999	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	177	0	0	79	0	0	0
Lane Group Flow (vph)	0	1079	0	0	196	609	0	40	920	0	0	0
Heavy Vehicles (%)	0%	16%	0%	0%	22%	10%	0%	0%	16%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2!	4	4	6			
Permitted Phases						6			4			
Actuated Green, G (s)		47.6			29.9	77.5		7.2	37.1			
Effective Green, g (s)		47.6			29.9	77.5		7.2	37.1			
Actuated g/C Ratio		0.48			0.30	0.78		0.07	0.37			
Clearance Time (s)		5.1			5.1	5.1		5.1	5.1			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		1507			884	1212		132	1033			
v/s Ratio Prot		c0.34			0.07	0.24		0.02	c0.27			
v/s Ratio Perm						0.18			0.11			
v/c Ratio		0.72			0.22	0.50		0.30	0.89			
Uniform Delay, d1		20.8			26.3	4.1		44.0	29.5			
Progression Factor		0.40			0.82	15.57		1.00	1.00			
Incremental Delay, d2		2.4			0.1	0.3		1.3	9.7			
Delay (s)		10.7			21.7	64.9		45.3	39.3			
Level of Service		B			C	E		D	D			
Approach Delay (s)		10.7			56.2			39.5			0.0	
Approach LOS		B			E			D			A	

Intersection Summary

HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.

























c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Sperry Ave & Rogers Rd

Existing Plus Approved (Mitigated)

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	941	214	76	470	150	188	3	60	183	0	225
Future Volume (vph)	398	941	214	76	470	150	188	3	60	183	0	225
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3213	2959	1583	1770	3139	1547	1770	1863	1583	1649	1430	1421
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3213	2959	1583	1770	3139	1547	1770	1863	1583	1649	1430	1421
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.92	0.80
Adj. Flow (vph)	457	1082	233	83	511	163	204	3	65	229	0	281
RTOR Reduction (vph)	0	0	129	0	0	120	0	0	54	0	152	108
Lane Group Flow (vph)	457	1082	104	83	511	43	204	3	11	176	19	55
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	9%	22%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	22.5	44.7	44.7	6.1	26.3	26.3	16.5	16.5	16.5	11.2	11.2	33.7
Effective Green, g (s)	22.5	44.7	44.7	6.1	26.3	26.3	16.5	16.5	16.5	11.2	11.2	33.7
Actuated g/C Ratio	0.22	0.45	0.45	0.06	0.26	0.26	0.16	0.16	0.16	0.11	0.11	0.34
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	722	1322	707	107	825	406	292	307	261	184	160	571
v/s Ratio Prot	0.14	c0.37		c0.05	0.16		c0.12	0.00		c0.11	0.01	0.02
v/s Ratio Perm			0.07			0.03			0.01			0.02
v/c Ratio	0.63	0.82	0.15	0.78	0.62	0.11	0.70	0.01	0.04	0.96	0.12	0.10
Uniform Delay, d1	35.0	24.1	16.4	46.3	32.4	27.9	39.4	34.9	35.1	44.2	40.0	22.7
Progression Factor	1.05	0.91	1.20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	3.2	0.2	28.9	3.5	0.5	7.1	0.0	0.1	53.2	0.3	0.1
Delay (s)	37.6	25.1	19.9	75.1	35.9	28.5	46.5	34.9	35.2	97.4	40.3	22.8
Level of Service	D	C	B	E	D	C	D	C	D	F	D	C
Approach Delay (s)		27.6			38.6			43.7			54.4	
Approach LOS		C			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			35.6				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)				23.5	
Intersection Capacity Utilization			62.2%				ICU Level of Service				B	
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
 4: Park Center Dr & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗	↖ ↗				↖ ↗		↖ ↗
Traffic Volume (veh/h)	99	242	0	1	440	17	0	0	0	23	0	123
Future Volume (veh/h)	99	242	0	1	440	17	0	0	0	23	0	123
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	112	275	0	1	557	22				26	0	137
Adj No. of Lanes	2	2	0	1	2	1				1	0	1
Peak Hour Factor	0.88	0.88	0.88	0.79	0.79	0.79				0.90	0.90	0.90
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	230	1554	0	4	1267	454				234	0	162
Arrive On Green	0.11	0.47	0.00	0.00	0.37	0.37				0.17	0.00	0.17
Sat Flow, veh/h	2167	3399	0	1810	3471	1245				1403	0	973
Grp Volume(v), veh/h	112	275	0	1	557	22				26	0	137
Grp Sat Flow(s),veh/h/ln	1083	1656	0	1810	1736	1245				1403	0	973
Q Serve(g_s), s	2.0	2.0	0.0	0.0	4.9	0.5				0.6	0.0	5.5
Cycle Q Clear(g_c), s	2.0	2.0	0.0	0.0	4.9	0.5				0.6	0.0	5.5
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	230	1554	0	4	1267	454				234	0	162
V/C Ratio(X)	0.49	0.18	0.00	0.22	0.44	0.05				0.11	0.00	0.84
Avail Cap(c_a), veh/h	1654	4078	0	1381	4274	1533				1140	0	791
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	6.2	0.0	20.2	9.8	8.3				14.4	0.0	16.4
Incr Delay (d2), s/veh	1.6	0.1	0.0	23.6	0.5	0.1				0.2	0.0	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	0.0	0.0	2.4	0.4				0.3	0.0	3.3
LnGrp Delay(d),s/veh	18.7	6.4	0.0	43.9	10.3	8.4				14.6	0.0	27.5
LnGrp LOS	B	A		D	B	A				B		C
Approach Vol, veh/h		387			580						163	
Approach Delay, s/veh		9.9			10.3						25.5	
Approach LOS		A			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	4.6	24.8		11.3	8.8	20.5						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	31.0	50.0		33.0	31.0	50.0						
Max Q Clear Time (g_c+I), s	12.0	4.0		7.5	4.0	6.9						
Green Ext Time (p_c), s	0.0	3.5		0.5	0.4	7.9						
Intersection Summary												
HCM 2010 Ctrl Delay			12.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 5: Baldwin Rd & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	221	25	10	323	85	104	153	35	54	39	93
Future Volume (veh/h)	47	221	25	10	323	85	104	153	35	54	39	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1834	1900	1900	1792	1863	1900	1810	1900	1827	1900	1863
Adj Flow Rate, veh/h	55	257	29	13	419	110	132	194	44	69	50	119
Adj No. of Lanes	1	2	0	1	1	1	2	1	0	1	1	1
Peak Hour Factor	0.86	0.86	0.86	0.77	0.77	0.77	0.79	0.79	0.79	0.78	0.78	0.78
Percent Heavy Veh, %	6	4	4	0	6	2	0	5	5	4	0	2
Cap, veh/h	106	1189	133	36	599	529	335	274	62	124	319	266
Arrive On Green	0.06	0.38	0.38	0.02	0.33	0.33	0.10	0.19	0.19	0.07	0.17	0.17
Sat Flow, veh/h	1707	3153	352	1810	1792	1583	3510	1428	324	1740	1900	1583
Grp Volume(v), veh/h	55	141	145	13	419	110	132	0	238	69	50	119
Grp Sat Flow(s),veh/h/ln	1707	1742	1763	1810	1792	1583	1755	0	1752	1740	1900	1583
Q Serve(g_s), s	1.7	3.0	3.0	0.4	11.0	2.7	1.9	0.0	6.9	2.1	1.2	3.7
Cycle Q Clear(g_c), s	1.7	3.0	3.0	0.4	11.0	2.7	1.9	0.0	6.9	2.1	1.2	3.7
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	106	657	665	36	599	529	335	0	336	124	319	266
V/C Ratio(X)	0.52	0.21	0.22	0.37	0.70	0.21	0.39	0.00	0.71	0.56	0.16	0.45
Avail Cap(c_a), veh/h	188	1026	1038	210	1065	941	1046	0	1154	237	944	786
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	11.5	11.5	26.3	15.7	12.9	23.1	0.0	20.6	24.4	19.3	20.4
Incr Delay (d2), s/veh	1.4	0.3	0.3	12.9	3.2	0.4	0.3	0.0	2.8	1.4	0.2	1.2
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	0.8	1.5	1.5	0.3	5.9	1.2	0.9	0.0	3.6	1.0	0.7	1.7
LnGrp Delay(d),s/veh	26.1	11.8	11.8	39.2	18.9	13.4	23.4	0.0	23.3	25.8	19.6	21.5
LnGrp LOS	C	B	B	D	B	B	C		C	C	B	C
Approach Vol, veh/h		341			542			370			238	
Approach Delay, s/veh		14.1			18.2			23.3			22.4	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	26.0	9.4	13.7	7.6	23.7	8.1	15.0				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	16.3	32.0	* 16	27.0	* 6	32.3	* 7.4	35.8				
Max Q Clear Time (g_c+1), s	12.4	5.0	3.9	5.7	3.7	13.0	4.1	8.9				
Green Ext Time (p_c), s	0.0	2.9	0.2	0.6	0.0	5.1	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				19.2								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
 6: American Eagle Ave & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	49	415	20	32	432	45	46	105	64	112	114	147
Future Volume (veh/h)	49	415	20	32	432	45	46	105	64	112	114	147
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	60	506	24	41	554	58	81	184	112	190	193	249
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.82	0.82	0.82	0.78	0.78	0.78	0.57	0.57	0.57	0.59	0.59	0.59
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	115	925	44	87	813	85	238	380	231	357	262	339
Arrive On Green	0.06	0.27	0.27	0.05	0.26	0.26	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1810	3398	161	1757	3147	329	942	1089	663	1086	752	971
Grp Volume(v), veh/h	60	260	270	41	303	309	81	0	296	190	0	442
Grp Sat Flow(s),veh/h/ln	1810	1750	1809	1757	1722	1753	942	0	1752	1086	0	1723
Q Serve(g_s), s	1.9	7.5	7.6	1.3	9.4	9.4	4.9	0.0	7.8	9.8	0.0	13.3
Cycle Q Clear(g_c), s	1.9	7.5	7.6	1.3	9.4	9.4	18.2	0.0	7.8	17.7	0.0	13.3
Prop In Lane	1.00		0.09	1.00		0.19	1.00		0.38	1.00		0.56
Lane Grp Cap(c), veh/h	115	477	493	87	445	453	238	0	611	357	0	601
V/C Ratio(X)	0.52	0.55	0.55	0.47	0.68	0.68	0.34	0.00	0.48	0.53	0.00	0.74
Avail Cap(c_a), veh/h	183	665	687	178	654	666	260	0	651	381	0	640
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.9	18.4	18.4	27.4	19.8	19.8	24.9	0.0	15.1	22.0	0.0	16.9
Incr Delay (d2), s/veh	3.6	1.4	1.4	3.9	2.6	2.6	0.8	0.0	0.6	1.2	0.0	4.1
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	3.8	3.9	0.7	4.8	4.9	1.3	0.0	3.9	3.1	0.0	7.0
LnGrp Delay(d),s/veh	30.5	19.8	19.8	31.3	22.4	22.4	25.7	0.0	15.7	23.3	0.0	21.0
LnGrp LOS	C	B	B	C	C	C	C		B	C		C
Approach Vol, veh/h		590			653			377			632	
Approach Delay, s/veh		20.9			22.9			17.9			21.7	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	22.6		27.2	10.3	21.8		27.2				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	6.5	22.5		22.0	6.0	22.5		22.0				
Max Q Clear Time (g_c+1), s	13.3	9.6		19.7	3.9	11.4		20.2				
Green Ext Time (p_c), s	0.0	3.3		0.9	0.0	3.7		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				21.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 7: Ward Ave & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	373	13	118	440	110	29	140	146	130	107	34
Future Volume (veh/h)	84	373	13	118	440	110	29	140	146	130	107	34
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1813	1900	1792	1830	1900	1900	1827	1827	1900	1863	1776
Adj Flow Rate, veh/h	109	484	17	136	506	126	51	246	256	197	162	52
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.77	0.77	0.77	0.87	0.87	0.87	0.57	0.57	0.57	0.66	0.66	0.66
Percent Heavy Veh, %	0	4	4	6	4	4	0	4	4	0	2	7
Cap, veh/h	141	945	33	174	795	197	464	671	570	346	684	545
Arrive On Green	0.08	0.28	0.28	0.10	0.29	0.29	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1810	3393	119	1707	2755	682	1183	1827	1552	910	1863	1484
Grp Volume(v), veh/h	109	245	256	136	318	314	51	246	256	197	162	52
Grp Sat Flow(s),veh/h/ln	1810	1723	1790	1707	1739	1699	1183	1827	1552	910	1863	1484
Q Serve(g_s), s	4.2	8.5	8.6	5.5	11.4	11.5	2.2	7.0	8.9	14.4	4.3	1.6
Cycle Q Clear(g_c), s	4.2	8.5	8.6	5.5	11.4	11.5	6.5	7.0	8.9	21.4	4.3	1.6
Prop In Lane	1.00		0.07	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	480	498	174	502	490	464	671	570	346	684	545
V/C Ratio(X)	0.77	0.51	0.51	0.78	0.63	0.64	0.11	0.37	0.45	0.57	0.24	0.10
Avail Cap(c_a), veh/h	228	531	552	503	804	786	593	871	740	445	888	707
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	32.3	21.7	21.7	31.3	22.1	22.1	17.9	16.5	17.1	24.3	15.6	14.8
Incr Delay (d2), s/veh	8.7	1.8	1.7	7.4	2.8	3.0	0.2	0.7	1.2	3.1	0.4	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	2.4	4.3	4.4	3.0	5.8	5.8	0.8	3.7	4.0	3.9	2.3	0.7
LnGrp Delay(d),s/veh	41.0	23.5	23.4	38.7	24.9	25.1	18.1	17.2	18.3	27.5	16.0	15.0
LnGrp LOS	D	C	C	D	C	C	B	B	B	C	B	B
Approach Vol, veh/h		610			768			553			411	
Approach Delay, s/veh		26.6			27.4			17.8			21.4	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.3	25.9		32.2	12.5	26.6		32.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	21.0	22.0		34.0	9.0	33.0		34.0				
Max Q Clear Time (g_c+1), s	17.5	10.6		23.4	6.2	13.5		10.9				
Green Ext Time (p_c), s	0.3	3.6		2.8	0.1	6.4		5.2				
Intersection Summary												
HCM 2010 Ctrl Delay				23.9								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 8: Del Puerto Ave & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	242	25	11	334	25	56	84	16	5	56	163
Future Volume (veh/h)	178	242	25	11	334	25	56	84	16	5	56	163
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	212	288	30	13	388	29	76	114	22	7	84	243
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.74	0.74	0.74	0.67	0.67	0.67
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	494	1494	154	634	832	761	243	316	50	96	125	343
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	964	3159	326	1076	1759	1610	416	1100	176	11	436	1195
Grp Volume(v), veh/h	212	156	162	13	388	29	212	0	0	334	0	0
Grp Sat Flow(s),veh/h/ln	964	1727	1759	1076	1759	1610	1692	0	0	1643	0	0
Q Serve(g_s), s	7.5	2.1	2.1	0.3	5.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.4	2.1	2.1	2.4	5.9	0.4	3.7	0.0	0.0	7.2	0.0	0.0
Prop In Lane	1.00		0.19	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	494	817	832	634	832	761	609	0	0	564	0	0
V/C Ratio(X)	0.43	0.19	0.19	0.02	0.47	0.04	0.35	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	633	1065	1085	788	1085	993	1149	0	0	1173	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	6.0	6.1	6.7	7.1	5.6	11.4	0.0	0.0	12.6	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.2	0.2	0.0	0.9	0.0	0.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.0	1.0	0.1	3.0	0.2	1.9	0.0	0.0	3.4	0.0	0.0
LnGrp Delay(d),s/veh	12.9	6.3	6.3	6.8	7.9	5.6	11.7	0.0	0.0	13.6	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		530			430			212			334	
Approach Delay, s/veh		8.9			7.7			11.7			13.6	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.3		16.3		23.3		16.3				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		24.4		26.1		24.4		26.1				
Max Q Clear Time (g_c+11), s		15.4		5.7		7.9		9.2				
Green Ext Time (p_c), s		3.3		1.3		4.1		2.1				
Intersection Summary												
HCM 2010 Ctrl Delay				10.0								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis
9: SR-33 & Sperry Ave

Existing Plus Approved (Mitigated)
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	108	41	7	26	10	126	393	52	20	180	162
Future Volume (vph)	93	108	41	7	26	10	126	393	52	20	180	162
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1641	1770		1583	1661		1736	1750		1805	1696	1468
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1641	1770		1583	1661		1736	1750		1805	1696	1468
Peak-hour factor, PHF	0.87	0.87	0.87	0.67	0.67	0.67	0.76	0.76	0.76	0.81	0.81	0.81
Adj. Flow (vph)	107	124	47	10	39	15	166	517	68	25	222	200
RTOR Reduction (vph)	0	19	0	0	14	0	0	5	0	0	0	125
Lane Group Flow (vph)	107	152	0	10	40	0	166	580	0	25	222	75
Confl. Peds. (#/hr)							1					
Heavy Vehicles (%)	10%	4%	0%	14%	9%	8%	4%	6%	12%	0%	12%	10%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	10.9	10.9		3.2	3.2		9.3	33.5		1.7	25.9	25.9
Effective Green, g (s)	10.9	10.9		3.2	3.2		9.3	33.5		1.7	25.9	25.9
Actuated g/C Ratio	0.16	0.16		0.05	0.05		0.14	0.49		0.02	0.38	0.38
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	259	280		73	77		234	852		44	638	552
v/s Ratio Prot	0.07	c0.09		0.01	c0.02		c0.10	c0.33		0.01	0.13	
v/s Ratio Perm												0.05
v/c Ratio	0.41	0.54		0.14	0.52		0.71	0.68		0.57	0.35	0.14
Uniform Delay, d1	26.1	26.7		31.5	32.0		28.5	13.5		33.2	15.4	14.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	2.2		0.9	5.7		9.5	4.4		15.7	1.5	0.5
Delay (s)	27.1	28.8		32.3	37.8		37.9	17.9		48.9	16.9	14.6
Level of Service	C	C		C	D		D	B		D	B	B
Approach Delay (s)		28.2			36.9			22.3			17.7	
Approach LOS		C			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			22.6				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			68.8				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			52.2%				ICU Level of Service			A		
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖↗	↖		↖	↑	↗	↖	↖↗	
Traffic Volume (veh/h)	40	233	93	459	409	61	128	321	233	25	193	33
Future Volume (veh/h)	40	233	93	459	409	61	128	321	233	25	193	33
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1667	1597	1597	1900
Adj Flow Rate, veh/h	48	277	111	596	531	79	160	401	291	35	268	46
Adj No. of Lanes	1	1	0	2	1	0	1	1	1	1	2	0
Peak Hour Factor	0.84	0.84	0.84	0.77	0.77	0.77	0.80	0.80	0.80	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	91	306	123	691	625	93	356	439	658	64	579	98
Arrive On Green	0.05	0.24	0.24	0.20	0.39	0.39	0.08	0.26	0.26	0.04	0.22	0.22
Sat Flow, veh/h	1774	1266	507	3442	1585	236	1587	1667	1417	1521	2596	440
Grp Volume(v), veh/h	48	0	388	596	0	610	160	401	291	35	155	159
Grp Sat Flow(s),veh/h/ln	1774	0	1773	1721	0	1821	1587	1667	1417	1521	1517	1519
Q Serve(g_s), s	1.9	0.0	15.4	12.2	0.0	22.2	5.6	17.0	1.8	1.6	6.4	6.6
Cycle Q Clear(g_c), s	1.9	0.0	15.4	12.2	0.0	22.2	5.6	17.0	1.8	1.6	6.4	6.6
Prop In Lane	1.00		0.29	1.00		0.13	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	91	0	429	691	0	718	356	439	658	64	338	339
V/C Ratio(X)	0.53	0.00	0.90	0.86	0.00	0.85	0.45	0.91	0.44	0.55	0.46	0.47
Avail Cap(c_a), veh/h	146	0	456	1373	0	1050	356	527	733	126	480	481
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	33.6	0.0	26.7	28.1	0.0	20.1	19.2	25.9	4.5	34.2	24.4	24.5
Incr Delay (d2), s/veh	1.8	0.0	19.7	1.3	0.0	3.1	0.3	16.7	0.2	2.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	9.9	5.9	0.0	11.6	2.4	9.8	2.1	0.7	2.7	2.8
LnGrp Delay(d),s/veh	35.4	0.0	46.4	29.4	0.0	23.2	19.6	42.7	4.7	36.9	24.8	24.9
LnGrp LOS	D		D	C		C	B	D	A	D	C	C
Approach Vol, veh/h		436			1206			852			349	
Approach Delay, s/veh		45.2			26.2			25.4			26.0	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	21.8	7.0	24.1	7.7	33.9	10.0	21.1				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 19	6.0	23.0	6.0	* 42	6.0	23.0				
Max Q Clear Time (g_c+1/4), s	11.4	17.4	3.6	19.0	3.9	24.2	7.6	8.6				
Green Ext Time (p_c), s	0.4	0.2	0.0	0.2	0.0	1.4	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			28.9									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	425	9	162	331	120	2	259	284	215	362	5
Future Volume (veh/h)	37	425	9	162	331	120	2	259	284	215	362	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	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	1777	1900	1845	1743	1900	1827	1881	1429	1743	1880	1900
Adj Flow Rate, veh/h	49	567	12	213	436	158	2	305	334	279	470	6
Adj No. of Lanes	1	1	0	1	1	1	1	1	1	2	1	0
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.85	0.85	0.85	0.77	0.77	0.77
Percent Heavy Veh, %	0	7	7	3	9	0	4	1	33	9	1	1
Cap, veh/h	323	599	13	274	702	635	210	551	355	601	661	8
Arrive On Green	0.04	0.35	0.35	0.10	0.40	0.40	0.00	0.29	0.29	0.07	0.36	0.36
Sat Flow, veh/h	1810	1733	37	1757	1743	1577	1740	1881	1213	3221	1852	24
Grp Volume(v), veh/h	49	0	579	213	436	158	2	305	334	279	0	476
Grp Sat Flow(s),veh/h/ln	1810	0	1770	1757	1743	1577	1740	1881	1213	1610	0	1876
Q Serve(g_s), s	1.5	0.0	28.1	6.5	17.6	5.9	0.1	12.1	23.7	5.2	0.0	19.3
Cycle Q Clear(g_c), s	1.5	0.0	28.1	6.5	17.6	5.9	0.1	12.1	23.7	5.2	0.0	19.3
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	323	0	612	274	702	635	210	551	355	601	0	670
V/C Ratio(X)	0.15	0.00	0.95	0.78	0.62	0.25	0.01	0.55	0.94	0.46	0.00	0.71
Avail Cap(c_a), veh/h	366	0	690	474	936	847	363	609	393	601	0	670
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.1	0.0	28.1	20.2	21.0	17.5	23.0	26.3	30.5	19.8	0.0	24.5
Incr Delay (d2), s/veh	0.1	0.0	20.0	1.8	0.3	0.1	0.0	0.3	28.2	0.2	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	17.1	3.3	8.5	2.5	0.0	6.3	10.7	2.3	0.0	10.5
LnGrp Delay(d),s/veh	18.2	0.0	48.1	22.1	21.4	17.6	23.0	26.7	58.6	20.0	0.0	27.5
LnGrp LOS	B		D	C	C	B	C	C	E	C		C
Approach Vol, veh/h		628			807			641			755	
Approach Delay, s/veh		45.7			20.8			43.3			24.7	
Approach LOS		D			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	40.1	9.9	30.8	12.5	35.1	4.2	36.4				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.6	47.4	5.9	28.6	18.6	34.4	8.0	26.5				
Max Q Clear Time (g_c+1), s	13.5	19.6	7.2	25.7	8.5	30.1	2.1	21.3				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.1	0.0	0.4	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			32.5									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (veh/h)	78	206	145	6	23	61	51	460	13	42	203	4
Future Volume (veh/h)	78	206	145	6	23	61	51	460	13	42	203	4
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	1900	1863	1900	1900	1863	1900	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	122	322	227	8	32	86	66	597	17	60	290	6
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.64	0.64	0.64	0.71	0.71	0.71	0.77	0.77	0.77	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	153	333	224	61	193	454	82	623	18	72	596	12
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.05	0.39	0.39	0.05	0.38	0.38
Sat Flow, veh/h	259	828	556	45	480	1128	1587	1613	46	1521	1559	32
Grp Volume(v), veh/h	671	0	0	126	0	0	66	0	614	60	0	296
Grp Sat Flow(s),veh/h/ln	1643	0	0	1653	0	0	1587	0	1659	1521	0	1591
Q Serve(g_s), s	31.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	31.7	3.4	0.0	12.4
Cycle Q Clear(g_c), s	35.4	0.0	0.0	4.3	0.0	0.0	3.6	0.0	31.7	3.4	0.0	12.4
Prop In Lane	0.18		0.34	0.06		0.68	1.00		0.03	1.00		0.02
Lane Grp Cap(c), veh/h	709	0	0	709	0	0	82	0	641	72	0	609
V/C Ratio(X)	0.95	0.00	0.00	0.18	0.00	0.00	0.81	0.00	0.96	0.83	0.00	0.49
Avail Cap(c_a), veh/h	709	0	0	709	0	0	180	0	648	100	0	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	0.0	17.0	0.0	0.0	41.3	0.0	26.3	41.5	0.0	20.6
Incr Delay (d2), s/veh	21.5	0.0	0.0	0.1	0.0	0.0	16.7	0.0	25.2	31.6	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	20.5	0.0	0.0	2.0	0.0	0.0	2.0	0.0	19.0	2.1	0.0	5.5
LnGrp Delay(d),s/veh	47.9	0.0	0.0	17.1	0.0	0.0	58.0	0.0	51.5	73.2	0.0	21.2
LnGrp LOS	D			B			E		D	E		C
Approach Vol, veh/h		671			126			680			356	
Approach Delay, s/veh		47.9			17.1			52.1			30.0	
Approach LOS		D			B			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	8.2	39.8		40.0	8.5	39.5		40.0				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	5.8	34.4		35.4	10.0	30.2		35.4				
Max Q Clear Time (g_c+1), s	15.4	33.7		37.4	5.6	14.4		6.3				
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	1.4		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			43.9									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	84	44	81	424	50	219	21	106	2	1	0
Future Volume (veh/h)	7	84	44	81	424	50	219	21	106	2	1	0
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		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1338	1520	1744	1900	1242	1424	1900	1900	1520	1900
Adj Flow Rate, veh/h	10	118	62	117	614	72	378	36	183	3	1	0
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.71	0.71	0.71	0.69	0.69	0.69	0.58	0.58	0.58	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	42	25	10	10	53	0	0	100	100	100
Cap, veh/h	23	709	679	143	702	82	534	47	241	7	2	0
Arrive On Green	0.01	0.37	0.37	0.10	0.46	0.46	0.23	0.23	0.23	0.01	0.01	0.00
Sat Flow, veh/h	1810	1900	1111	1448	1529	179	2294	204	1035	1099	366	0
Grp Volume(v), veh/h	10	118	62	117	0	686	378	0	219	4	0	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1111	1448	0	1708	1147	0	1239	1465	0	0
Q Serve(g_s), s	0.3	2.6	1.5	4.9	0.0	22.6	9.4	0.0	10.3	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.3	2.6	1.5	4.9	0.0	22.6	9.4	0.0	10.3	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.84	0.75		0.00
Lane Grp Cap(c), veh/h	23	709	679	143	0	784	534	0	288	9	0	0
V/C Ratio(X)	0.43	0.17	0.09	0.82	0.00	0.87	0.71	0.00	0.76	0.42	0.00	0.00
Avail Cap(c_a), veh/h	145	804	735	351	0	1000	902	0	487	141	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.6	13.1	5.1	27.5	0.0	15.2	22.0	0.0	22.3	30.9	0.0	0.0
Incr Delay (d2), s/veh	12.3	0.1	0.1	10.7	0.0	7.2	1.7	0.0	4.1	27.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	0.7	2.4	0.0	12.1	3.1	0.0	3.8	0.1	0.0	0.0
LnGrp Delay(d),s/veh	42.9	13.2	5.2	38.2	0.0	22.5	23.7	0.0	26.4	58.3	0.0	0.0
LnGrp LOS	D	B	A	D		C	C		C	E		
Approach Vol, veh/h		190			803			597			4	
Approach Delay, s/veh		12.1			24.8			24.7			58.3	
Approach LOS		B			C			C			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.0	10.7	27.8		4.9	5.3	33.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		24.5	15.1	26.4		6.0	5.0	36.5				
Max Q Clear Time (g_c+1), s		12.3	6.9	4.6		2.2	2.3	24.6				
Green Ext Time (p_c), s		2.2	0.2	0.8		0.0	0.0	4.0				
Intersection Summary												
HCM 2010 Ctrl Delay			23.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	0	1	489	414	338	527	28	84	400	0
Future Volume (veh/h)	0	1	0	1	489	414	338	527	28	84	400	0
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	1863	1319	1900	1667	1900	1863	1520	1743	1776	1900
Adj Flow Rate, veh/h	0	4	0	2	776	657	412	643	34	158	755	0
Adj No. of Lanes	1	2	1	1	1	1	2	2	1	2	2	0
Peak Hour Factor	0.25	0.25	0.25	0.63	0.63	0.63	0.82	0.82	0.82	0.53	0.53	0.53
Percent Heavy Veh, %	2	2	2	44	0	14	0	2	25	9	7	7
Cap, veh/h	92	1535	687	523	824	717	447	1117	408	234	880	0
Arrive On Green	0.00	0.43	0.00	0.43	0.43	0.43	0.13	0.32	0.32	0.07	0.26	0.00
Sat Flow, veh/h	372	3539	1583	996	1900	1417	3510	3539	1292	3221	3463	0
Grp Volume(v), veh/h	0	4	0	2	776	657	412	643	34	158	755	0
Grp Sat Flow(s),veh/h/ln	372	1770	1583	996	1900	1417	1755	1770	1292	1610	1687	0
Q Serve(g_s), s	0.0	0.1	0.0	0.1	30.7	33.6	9.1	11.9	1.5	3.8	16.8	0.0
Cycle Q Clear(g_c), s	0.0	0.1	0.0	0.1	30.7	33.6	9.1	11.9	1.5	3.8	16.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	92	1535	687	523	824	717	447	1117	408	234	880	0
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.94	0.92	0.92	0.58	0.08	0.67	0.86	0.00
Avail Cap(c_a), veh/h	93	1549	693	523	824	717	447	1117	408	369	961	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	12.6	0.0	12.7	21.3	17.9	33.9	22.5	18.9	35.5	27.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	18.7	16.5	24.7	0.7	0.1	3.4	7.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	20.2	16.2	5.9	5.9	0.5	1.8	8.7	0.0
LnGrp Delay(d),s/veh	0.0	12.6	0.0	12.7	40.0	34.3	58.6	23.2	19.0	38.9	35.0	0.0
LnGrp LOS		B		B	D	C	E	C	B	D	C	
Approach Vol, veh/h		4			1435			1089			913	
Approach Delay, s/veh		12.6			37.4			36.5			35.7	
Approach LOS		B			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	29.9		39.0	14.0	25.6		39.0				
Change Period (Y+Rc), s	4.0	5.1		* 4.9	4.0	* 5.1		4.9				
Max Green Setting (Gmax), s	9.0	22.9		* 34	10.0	* 22		34.1				
Max Q Clear Time (g_c+1/4), s	11.0	13.9		2.1	11.1	18.8		35.6				
Green Ext Time (p_c), s	0.1	2.9		0.0	0.0	1.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			36.6									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	601	189	0	0	119	56	16	149	3
Future Volume (veh/h)	1	0	1	601	189	0	0	119	56	16	149	3
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	1810	1810	1810	1863	1863	1863	1597	1597	1597	1638	1638	1900
Adj Flow Rate, veh/h	4	0	4	985	310	0	0	143	67	25	237	5
Adj No. of Lanes	1	2	1	2	1	1	1	2	1	1	2	0
Peak Hour Factor	0.25	0.25	0.25	0.61	0.61	0.61	0.83	0.83	0.83	0.63	0.63	0.63
Percent Heavy Veh, %	5	5	5	2	2	2	19	19	19	16	16	16
Cap, veh/h	22	43	19	1188	643	593	3	506	226	46	871	18
Arrive On Green	0.01	0.00	0.01	0.35	0.35	0.00	0.00	0.17	0.17	0.03	0.28	0.28
Sat Flow, veh/h	1723	3438	1538	3442	1863	1583	1521	3034	1357	1560	3117	66
Grp Volume(v), veh/h	4	0	4	985	310	0	0	143	67	25	118	124
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1721	1863	1583	1521	1517	1357	1560	1556	1626
Q Serve(g_s), s	0.1	0.0	0.1	12.6	6.3	0.0	0.0	2.0	2.1	0.8	2.8	2.9
Cycle Q Clear(g_c), s	0.1	0.0	0.1	12.6	6.3	0.0	0.0	2.0	2.1	0.8	2.8	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	22	43	19	1188	643	593	3	506	226	46	435	455
V/C Ratio(X)	0.18	0.00	0.21	0.83	0.48	0.00	0.00	0.28	0.30	0.54	0.27	0.27
Avail Cap(c_a), veh/h	215	430	192	1305	706	647	174	563	252	179	435	455
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	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	23.5	14.4	12.3	0.0	0.0	17.5	17.5	23.0	13.5	13.5
Incr Delay (d2), s/veh	4.0	0.0	5.1	4.3	0.6	0.0	0.0	0.3	0.7	9.6	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	6.6	3.3	0.0	0.0	0.8	0.8	0.4	1.3	1.3
LnGrp Delay(d),s/veh	27.4	0.0	28.6	18.7	12.9	0.0	0.0	17.8	18.3	32.5	13.8	13.8
LnGrp LOS	C		C	B	B			B	B	C	B	B
Approach Vol, veh/h		8			1295			210			267	
Approach Delay, s/veh		28.0			17.3			17.9			15.6	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	13.8		6.4	0.0	19.2		22.4				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	8.9		6.0	5.5	8.9		18.2				
Max Q Clear Time (g_c+1), s	12.8	4.1		2.1	0.0	4.9		14.6				
Green Ext Time (p_c), s	0.0	0.4		0.0	0.0	0.4		2.0				
Intersection Summary												
HCM 2010 Ctrl Delay				17.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 16: Baldwin Rd & Zacharias Rd

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	125	9	27	814	105	1	147	36	2	80	1
Future Volume (veh/h)	0	125	9	27	814	105	1	147	36	2	80	1
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	1810	1810	1810	1863	1863	1863	1810	1810	1900	1610	1610	1900
Adj Flow Rate, veh/h	0	227	16	47	1403	181	1	188	46	3	107	1
Adj No. of Lanes	1	2	1	2	2	1	1	1	0	1	1	0
Peak Hour Factor	0.55	0.55	0.55	0.58	0.58	0.58	0.78	0.78	0.78	0.75	0.75	0.75
Percent Heavy Veh, %	5	5	5	2	2	2	5	5	5	18	18	18
Cap, veh/h	158	315	141	1601	1646	736	2	226	55	6	260	2
Arrive On Green	0.00	0.09	0.09	0.47	0.47	0.47	0.00	0.16	0.16	0.00	0.16	0.16
Sat Flow, veh/h	1723	3438	1538	3442	3539	1583	1723	1405	344	1533	1593	15
Grp Volume(v), veh/h	0	227	16	47	1403	181	1	0	234	3	0	108
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1721	1770	1583	1723	0	1749	1533	0	1608
Q Serve(g_s), s	0.0	4.9	0.7	0.6	27.0	5.3	0.0	0.0	10.0	0.2	0.0	4.6
Cycle Q Clear(g_c), s	0.0	4.9	0.7	0.6	27.0	5.3	0.0	0.0	10.0	0.2	0.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.01
Lane Grp Cap(c), veh/h	158	315	141	1601	1646	736	2	0	281	6	0	263
V/C Ratio(X)	0.00	0.72	0.11	0.03	0.85	0.25	0.42	0.00	0.83	0.48	0.00	0.41
Avail Cap(c_a), veh/h	184	367	164	1756	1806	808	123	0	357	110	0	328
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)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	33.9	32.0	11.1	18.2	12.4	38.3	0.0	31.2	38.2	0.0	28.8
Incr Delay (d2), s/veh	0.0	5.6	0.4	0.0	3.9	0.2	89.3	0.0	12.6	48.8	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	0.3	0.3	13.9	2.4	0.1	0.0	5.8	0.1	0.0	2.1
LnGrp Delay(d),s/veh	0.0	39.6	32.4	11.2	22.1	12.6	127.7	0.0	43.8	87.0	0.0	29.9
LnGrp LOS		D	C	B	C	B	F		D	F		C
Approach Vol, veh/h		243			1631			235			111	
Approach Delay, s/veh		39.1			20.7			44.2			31.4	
Approach LOS		D			C			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	4.3	18.1		12.8	4.1	18.3		41.5				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	15.7		8.2	5.5	15.7		39.2				
Max Q Clear Time (g_c+1/2), s	12.2	12.0		6.9	2.0	6.6		29.0				
Green Ext Time (p_c), s	0.0	0.4		0.2	0.0	0.3		6.7				
Intersection Summary												
HCM 2010 Ctrl Delay				25.8								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	153	159	1130	414	7		
Future Volume (veh/h)	0	153	159	1130	414	7		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1638	1638	1624	1900		
Adj Flow Rate, veh/h	0	212	183	1299	538	9		
Adj No. of Lanes	1	2	1	2	2	0		
Peak Hour Factor	0.72	0.72	0.87	0.87	0.77	0.77		
Percent Heavy Veh, %	5	5	16	16	17	17		
Cap, veh/h	242	380	227	1732	951	16		
Arrive On Green	0.00	0.14	0.15	0.56	0.31	0.31		
Sat Flow, veh/h	1723	2707	1560	3194	3187	52		
Grp Volume(v), veh/h	0	212	183	1299	267	280		
Grp Sat Flow(s),veh/h/ln	1723	1354	1560	1556	1543	1615		
Q Serve(g_s), s	0.0	2.8	4.3	12.2	5.6	5.6		
Cycle Q Clear(g_c), s	0.0	2.8	4.3	12.2	5.6	5.6		
Prop In Lane	1.00	1.00	1.00			0.03		
Lane Grp Cap(c), veh/h	242	380	227	1732	472	494		
V/C Ratio(X)	0.00	0.56	0.81	0.75	0.57	0.57		
Avail Cap(c_a), veh/h	270	425	408	2229	540	566		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	15.3	15.8	6.5	11.1	11.1		
Incr Delay (d2), s/veh	0.0	1.3	6.6	1.1	1.1	1.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.2	2.2	5.3	2.4	2.6		
LnGrp Delay(d),s/veh	0.0	16.6	22.4	7.5	12.2	12.2		
LnGrp LOS		B	C	A	B	B		
Approach Vol, veh/h	212			1482	547			
Approach Delay, s/veh	16.6			9.4	12.2			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		27.1		11.2	9.6	17.5		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		27.4		6.0	10.0	13.4		
Max Q Clear Time (g_c+I1), s		14.2		4.8	6.3	7.6		
Green Ext Time (p_c), s		7.1		0.1	0.2	1.5		
Intersection Summary								
HCM 2010 Ctrl Delay			10.7					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
18: SR-33 & Ward Ave

Existing Plus Approved (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	510	46	7	562	300	123		
Future Volume (veh/h)	510	46	7	562	300	123		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1759	1759	1667	1667	1597	1597		
Adj Flow Rate, veh/h	630	57	9	739	395	162		
Adj No. of Lanes	1	1	1	1	2	1		
Peak Hour Factor	0.81	0.81	0.76	0.76	0.76	0.76		
Percent Heavy Veh, %	8	8	14	14	19	19		
Cap, veh/h	667	595	18	787	1254	561		
Arrive On Green	0.40	0.40	0.01	0.47	0.41	0.41		
Sat Flow, veh/h	1675	1495	1587	1667	3113	1357		
Grp Volume(v), veh/h	630	57	9	739	395	162		
Grp Sat Flow(s),veh/h/ln	1675	1495	1587	1667	1517	1357		
Q Serve(g_s), s	30.4	2.0	0.5	35.3	7.4	6.7		
Cycle Q Clear(g_c), s	30.4	2.0	0.5	35.3	7.4	6.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	667	595	18	787	1254	561		
V/C Ratio(X)	0.95	0.10	0.50	0.94	0.32	0.29		
Avail Cap(c_a), veh/h	717	640	95	858	1254	561		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	24.4	15.8	41.2	21.0	16.6	16.4		
Incr Delay (d2), s/veh	20.6	0.1	20.2	17.0	0.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.8	2.1	0.3	19.7	3.1	2.5		
LnGrp Delay(d),s/veh	45.0	15.9	61.4	38.0	16.7	16.7		
LnGrp LOS	D	B	E	D	B	B		
Approach Vol, veh/h	687			748	557			
Approach Delay, s/veh	42.5			38.3	16.7			
Approach LOS	D			D	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		45.4		38.5	4.9	40.5		
Change Period (Y+Rc), s		5.8		5.1	4.0	5.8		
Max Green Setting (Gmax), s		43.2		35.9	5.0	34.2		
Max Q Clear Time (g_c+I1), s		37.3		32.4	2.5	9.4		
Green Ext Time (p_c), s		2.4		0.9	0.0	3.0		
Intersection Summary								
HCM 2010 Ctrl Delay			33.7					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	Y		↑↑		Y	↑↑		
Traffic Volume (veh/h)	95	108	1066	53	19	552		
Future Volume (veh/h)	95	108	1066	53	19	552		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1473	1900	1638	1900	1624	1624		
Adj Flow Rate, veh/h	113	129	1284	64	24	699		
Adj No. of Lanes	0	0	2	0	1	2		
Peak Hour Factor	0.84	0.84	0.83	0.83	0.79	0.79		
Percent Heavy Veh, %	0	0	16	16	17	17		
Cap, veh/h	116	133	1629	81	42	1942		
Arrive On Green	0.19	0.19	0.54	0.54	0.03	0.63		
Sat Flow, veh/h	613	700	3099	150	1547	3167		
Grp Volume(v), veh/h	243	0	661	687	24	699		
Grp Sat Flow(s),veh/h/ln	1319	0	1556	1611	1547	1543		
Q Serve(g_s), s	11.8	0.0	21.8	21.9	1.0	7.0		
Cycle Q Clear(g_c), s	11.8	0.0	21.8	21.9	1.0	7.0		
Prop In Lane	0.47	0.53		0.09	1.00			
Lane Grp Cap(c), veh/h	250	0	840	870	42	1942		
V/C Ratio(X)	0.97	0.00	0.79	0.79	0.57	0.36		
Avail Cap(c_a), veh/h	250	0	1386	1435	120	3180		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.8	0.0	11.8	11.8	30.9	5.7		
Incr Delay (d2), s/veh	48.4	0.0	1.7	1.6	11.7	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.6	0.0	9.6	9.9	0.6	2.9		
LnGrp Delay(d),s/veh	74.2	0.0	13.5	13.5	42.6	5.8		
LnGrp LOS	E		B	B	D	A		
Approach Vol, veh/h	243		1348			723		
Approach Delay, s/veh	74.2		13.5			7.0		
Approach LOS	E		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.7	40.5				46.2		18.0
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	5.0	57.2				66.2		12.2
Max Q Clear Time (g_c+1), s	13.0	23.9				9.0		13.8
Green Ext Time (p_c), s	0.0	10.8				5.1		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			17.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
20: SR-33 & Baldwin Rd

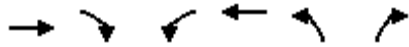
Existing Plus Approved (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	111	3	1	403	402	73		
Future Volume (veh/h)	111	3	1	403	402	73		
Number	5	12	3	8	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1638	1638	1624	1900		
Adj Flow Rate, veh/h	154	4	1	469	522	95		
Adj No. of Lanes	1	1	1	1	2	0		
Peak Hour Factor	0.72	0.72	0.86	0.86	0.77	0.77		
Percent Heavy Veh, %	5	5	16	16	17	17		
Cap, veh/h	331	295	5	710	790	143		
Arrive On Green	0.19	0.19	0.00	0.43	0.30	0.30		
Sat Flow, veh/h	1723	1538	1560	1638	2691	473		
Grp Volume(v), veh/h	154	4	1	469	308	309		
Grp Sat Flow(s),veh/h/ln	1723	1538	1560	1638	1543	1540		
Q Serve(g_s), s	2.5	0.1	0.0	7.0	5.4	5.4		
Cycle Q Clear(g_c), s	2.5	0.1	0.0	7.0	5.4	5.4		
Prop In Lane	1.00	1.00	1.00			0.31		
Lane Grp Cap(c), veh/h	331	295	5	710	467	466		
V/C Ratio(X)	0.47	0.01	0.20	0.66	0.66	0.66		
Avail Cap(c_a), veh/h	540	482	277	1254	708	707		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	11.1	10.1	15.4	7.0	9.4	9.4		
Incr Delay (d2), s/veh	1.0	0.0	18.2	1.1	1.6	1.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	3.3	2.4	2.4		
LnGrp Delay(d),s/veh	12.1	10.1	33.6	8.0	11.0	11.0		
LnGrp LOS	B	B	C	A	B	B		
Approach Vol, veh/h	158			470	617			
Approach Delay, s/veh	12.1			8.1	11.0			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		11.7	4.0	15.2				19.2
Change Period (Y+Rc), s		5.8	4.0	5.8				5.8
Max Green Setting (Gmax), s		9.7	5.5	14.2				23.7
Max Q Clear Time (g_c+1), s		4.5	2.0	7.4				9.0
Green Ext Time (p_c), s		0.2	0.0	1.9				2.3
Intersection Summary								
HCM 2010 Ctrl Delay			10.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 21: Rogers Rd & SR-33

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↵	↑	↵			
Traffic Volume (veh/h)	379	96	6	395	154	22		
Future Volume (veh/h)	379	96	6	395	154	22		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1624	1900	1638	1638	1597	1900		
Adj Flow Rate, veh/h	519	122	6	416	183	26		
Adj No. of Lanes	2	0	1	1	0	0		
Peak Hour Factor	0.73	0.79	0.95	0.95	0.84	0.84		
Percent Heavy Veh, %	17	17	16	16	0	0		
Cap, veh/h	773	181	13	736	227	32		
Arrive On Green	0.31	0.31	0.01	0.45	0.17	0.17		
Sat Flow, veh/h	2564	581	1560	1638	1306	186		
Grp Volume(v), veh/h	322	319	6	416	210	0		
Grp Sat Flow(s),veh/h/ln	1543	1521	1560	1638	1499	0		
Q Serve(g_s), s	5.6	5.6	0.1	5.8	4.1	0.0		
Cycle Q Clear(g_c), s	5.6	5.6	0.1	5.8	4.1	0.0		
Prop In Lane		0.38	1.00		0.87	0.12		
Lane Grp Cap(c), veh/h	480	474	13	736	260	0		
V/C Ratio(X)	0.67	0.67	0.47	0.57	0.81	0.00		
Avail Cap(c_a), veh/h	662	653	253	1182	545	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	9.2	9.2	15.2	6.3	12.2	0.0		
Incr Delay (d2), s/veh	1.6	1.7	25.0	0.7	5.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	2.5	0.1	2.7	2.1	0.0		
LnGrp Delay(d),s/veh	10.8	10.9	40.2	6.9	18.1	0.0		
LnGrp LOS	B	B	D	A	B			
Approach Vol, veh/h	641			422	210			
Approach Delay, s/veh	10.9			7.4	18.1			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		11.1	4.2	15.4				19.6
Change Period (Y+Rc), s		5.8	4.0	5.8				5.8
Max Green Setting (Gmax), s		11.2	5.0	13.2				22.2
Max Q Clear Time (g_c+1), s		6.1	2.1	7.6				7.8
Green Ext Time (p_c), s		0.3	0.0	1.9				2.2
Intersection Summary								
HCM 2010 Ctrl Delay			10.9					
HCM 2010 LOS			B					

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	18	13	0	70	4	7	27	0	0	54	4
Future Vol, veh/h	7	18	13	0	70	4	7	27	0	0	54	4
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.77	0.77	0.77	0.75	0.75	0.75
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	9	24	17	0	93	5	9	35	0	0	72	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	8.4	7.7	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	18%	0%	0%
Vol Thru, %	79%	47%	95%	93%
Vol Right, %	0%	34%	5%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	38	74	58
LT Vol	7	7	0	0
Through Vol	27	18	70	54
RT Vol	0	13	4	4
Lane Flow Rate	44	51	99	77
Geometry Grp	1	1	1	1
Degree of Util (X)	0.054	0.063	0.126	0.092
Departure Headway (Hd)	4.42	4.463	4.611	4.303
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	814	807	768	837
Service Time	2.425	2.468	2.701	2.307
HCM Lane V/C Ratio	0.054	0.063	0.129	0.092
HCM Control Delay	7.7	7.8	8.4	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.2	0.4	0.3

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	9	1	4	0	36	73	3	1	20	1
Future Vol, veh/h	1	1	9	1	4	0	36	73	3	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	39	39	39	42	42	42	72	72	72	69	69	69
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	3	3	23	2	10	0	50	101	4	1	29	1






















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	240	237	30	248	235	103	30	0	0	105	0	0
Stage 1	32	32	-	203	203	-	-	-	-	-	-	-
Stage 2	208	205	-	45	32	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.39	6.79	6.49	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.761	4.261	3.561	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	678	634	995	653	621	883	1583	-	-	1486	-	-
Stage 1	940	834	-	741	686	-	-	-	-	-	-	-
Stage 2	755	700	-	905	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	652	612	995	619	599	883	1583	-	-	1486	-	-
Mov Cap-2 Maneuver	652	612	-	619	599	-	-	-	-	-	-	-
Stage 1	908	833	-	716	663	-	-	-	-	-	-	-
Stage 2	719	676	-	880	817	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	11.1	2.4	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1583	-	-	901	603	1486	-	-
HCM Lane V/C Ratio	0.032	-	-	0.031	0.02	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.1	11.1	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
24: Sycamore Ave & Las Palmas Ave

Existing Plus Approved (Mitigated)
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	393	6	16	589	64	3	31	56	213	140	57
Future Volume (veh/h)	11	393	6	16	589	64	3	31	56	213	140	57
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	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	13	462	7	19	685	74	3	34	62	280	184	75
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.86	0.86	0.86	0.90	0.90	0.90	0.76	0.76	0.76
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	26	825	13	33	702	76	128	43	78	315	224	91
Arrive On Green	0.02	0.48	0.48	0.02	0.48	0.48	0.07	0.07	0.07	0.18	0.18	0.18
Sat Flow, veh/h	1675	1728	26	1560	1453	157	1774	592	1080	1774	1259	513
Grp Volume(v), veh/h	13	0	469	19	0	759	3	0	96	280	0	259
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1610	1774	0	1672	1774	0	1772
Q Serve(g_s), s	0.7	0.0	16.2	1.0	0.0	39.3	0.1	0.0	4.8	13.1	0.0	12.0
Cycle Q Clear(g_c), s	0.7	0.0	16.2	1.0	0.0	39.3	0.1	0.0	4.8	13.1	0.0	12.0
Prop In Lane	1.00		0.01	1.00		0.10	1.00		0.65	1.00		0.29
Lane Grp Cap(c), veh/h	26	0	838	33	0	778	128	0	121	315	0	315
V/C Ratio(X)	0.50	0.00	0.56	0.57	0.00	0.98	0.02	0.00	0.79	0.89	0.00	0.82
Avail Cap(c_a), veh/h	98	0	848	91	0	778	150	0	141	316	0	316
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	0.0	15.9	41.3	0.0	21.5	36.7	0.0	38.9	34.2	0.0	33.8
Incr Delay (d2), s/veh	14.0	0.0	0.8	14.6	0.0	26.2	0.1	0.0	22.8	24.8	0.0	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	8.0	0.6	0.0	22.9	0.1	0.0	3.0	8.6	0.0	7.2
LnGrp Delay(d),s/veh	55.7	0.0	16.7	56.0	0.0	47.7	36.8	0.0	61.7	59.1	0.0	49.6
LnGrp LOS	E		B	E		D	D		E	E		D
Approach Vol, veh/h		482			778			99			539	
Approach Delay, s/veh		17.7			47.9			60.9			54.5	
Approach LOS		B			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.0	5.8	46.5		21.0	5.3	47.0				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		7.2	5.0	41.2		15.2	5.0	41.2				
Max Q Clear Time (g_c+I1), s		6.8	3.0	18.2		15.1	2.7	41.3				
Green Ext Time (p_c), s		0.0	0.0	2.7		0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			42.8									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

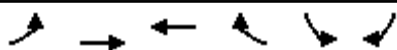
Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	800	8	21	695	73	10	10	26	49	5	6
Future Volume (veh/h)	4	800	8	21	695	73	10	10	26	49	5	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	952	10	24	808	85	12	12	32	56	6	7
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.82	0.82	0.82	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	11	1085	11	43	941	99	93	42	82	211	19	14
Arrive On Green	0.01	0.62	0.62	0.03	0.65	0.65	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1675	1738	18	1560	1458	153	225	480	940	1170	221	157
Grp Volume(v), veh/h	5	0	962	24	0	893	56	0	0	69	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1756	1560	0	1611	1646	0	0	1548	0	0
Q Serve(g_s), s	0.2	0.0	27.3	0.9	0.0	26.4	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	27.3	0.9	0.0	26.4	1.9	0.0	0.0	2.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.10	0.21		0.57	0.81		0.10
Lane Grp Cap(c), veh/h	11	0	1097	43	0	1040	217	0	0	245	0	0
V/C Ratio(X)	0.45	0.00	0.88	0.56	0.00	0.86	0.26	0.00	0.00	0.28	0.00	0.00
Avail Cap(c_a), veh/h	140	0	1735	130	0	1592	272	0	0	288	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.6	0.0	9.3	28.8	0.0	8.5	25.8	0.0	0.0	25.9	0.0	0.0
Incr Delay (d2), s/veh	25.6	0.0	3.3	10.9	0.0	3.1	0.6	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	13.8	0.5	0.0	12.3	0.9	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	55.3	0.0	12.7	39.7	0.0	11.6	26.4	0.0	0.0	26.6	0.0	0.0
LnGrp LOS	E		B	D		B	C			C		
Approach Vol, veh/h		967			917			56			69	
Approach Delay, s/veh		12.9			12.3			26.4			26.6	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.1	5.6	43.2		11.1	4.4	44.5				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		7.3	5.0	59.2		7.1	5.0	59.2				
Max Q Clear Time (g_c+1), s		3.9	2.9	29.3		4.3	2.2	28.4				
Green Ext Time (p_c), s		0.0	0.0	8.2		0.0	0.0	7.4				
Intersection Summary												
HCM 2010 Ctrl Delay			13.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 26: Las Palmas Ave/W Main Ave & Jennings Rd

Existing Plus Approved (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	335	582	449	3	6	288		
Future Volume (veh/h)	335	582	449	3	6	288		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1712	1712	1667	1900	1863	1863		
Adj Flow Rate, veh/h	381	661	576	4	9	417		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.88	0.88	0.78	0.78	0.69	0.69		
Percent Heavy Veh, %	11	11	14	14	2	2		
Cap, veh/h	421	1185	625	4	255	637		
Arrive On Green	0.26	0.69	0.38	0.38	0.14	0.14		
Sat Flow, veh/h	1630	1712	1653	11	1774	1583		
Grp Volume(v), veh/h	381	661	0	580	9	417		
Grp Sat Flow(s),veh/h/ln	1630	1712	0	1665	1774	1583		
Q Serve(g_s), s	16.0	13.7	0.0	23.6	0.3	10.2		
Cycle Q Clear(g_c), s	16.0	13.7	0.0	23.6	0.3	10.2		
Prop In Lane	1.00			0.01	1.00	1.00		
Lane Grp Cap(c), veh/h	421	1185	0	629	255	637		
V/C Ratio(X)	0.91	0.56	0.00	0.92	0.04	0.66		
Avail Cap(c_a), veh/h	460	1285	0	686	255	637		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.4	5.5	0.0	21.0	26.1	17.2		
Incr Delay (d2), s/veh	20.3	0.5	0.0	17.2	0.1	2.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	9.6	6.4	0.0	13.8	0.2	13.4		
LnGrp Delay(d),s/veh	45.7	5.9	0.0	38.3	26.1	19.6		
LnGrp LOS	D	A		D	C	B		
Approach Vol, veh/h		1042	580		426			
Approach Delay, s/veh		20.5	38.3		19.8			
Approach LOS		C	D		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				54.9		16.0	22.3	32.6
Change Period (Y+Rc), s				5.8		5.8	4.0	5.8
Max Green Setting (Gmax), s				53.2		10.2	20.0	29.2
Max Q Clear Time (g_c+I1), s				15.7		12.2	18.0	25.6
Green Ext Time (p_c), s				4.6		0.0	0.3	1.2
Intersection Summary								
HCM 2010 Ctrl Delay			25.4					
HCM 2010 LOS			C					

HCM Signalized Intersection Capacity Analysis
1: I-5 SB Ramps & Sperry Ave

Existing Plus Approved (Mitigated)
Timing Plan: PM Peak























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↗					↖	↗	
Traffic Volume (vph)	0	290	25	446	413	0	0	0	0	820	2	41
Future Volume (vph)	0	290	25	446	413	0	0	0	0	820	2	41
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		0.99		1.00	1.00					1.00	0.99	
Flt Protected		1.00		0.95	1.00					0.95	0.96	
Satd. Flow (prot)		3435		1504	1772					1234	1258	
Flt Permitted		1.00		0.95	1.00					0.95	0.96	
Satd. Flow (perm)		3435		1504	1772					1234	1258	
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.25	0.25	0.25	0.95	0.95	0.95
Adj. Flow (vph)	0	345	30	485	449	0	0	0	0	863	2	43
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	370	0	436	498	0	0	0	0	457	448	0
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	4%	0%	14%	0%	0%	0%	0%	0%	39%	4%	2%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		16.1		40.9	40.9					58.8	58.8	
Effective Green, g (s)		16.1		40.9	40.9					58.8	58.8	
Actuated g/C Ratio		0.12		0.31	0.31					0.45	0.45	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		425		473	557					558	569	
v/s Ratio Prot		c0.11		c0.29	0.28					c0.37	0.36	
v/s Ratio Perm												
v/c Ratio		0.87		0.92	0.89					0.82	0.79	
Uniform Delay, d1		55.9		43.0	42.5					31.0	30.3	
Progression Factor		1.00		0.06	0.05					1.00	1.00	
Incremental Delay, d2		17.0		13.6	9.1					12.6	10.6	
Delay (s)		73.0		16.2	11.1					43.6	40.9	
Level of Service		E		B	B					D	D	
Approach Delay (s)		73.0			13.5			0.0			42.2	
Approach LOS		E			B			A			D	
Intersection Summary												
HCM 2000 Control Delay			35.3			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)					14.2	
Intersection Capacity Utilization			69.1%			ICU Level of Service					C	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & Sperry Ave

Existing Plus Approved (Mitigated)





























Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				 			
Traffic Volume (vph)	30	1080	0	0	856	1030	3	4	166	0	0	0
Future Volume (vph)	30	1080	0	0	856	1030	3	4	166	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		1.00			1.00	1.00		0.98	1.00			
Satd. Flow (prot)		3336			3282	1335		1447	2369			
Flt Permitted		1.00			1.00	1.00		0.98	1.00			
Satd. Flow (perm)		3336			3282	1335		1447	2369			
Peak-hour factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94	0.90	0.90	0.90	0.25	0.25	0.25
Adj. Flow (vph)	32	1137	0	0	911	1096	3	4	184	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	46	0	0	0
Lane Group Flow (vph)	0	1169	0	0	911	1096	0	7	138	0	0	0
Heavy Vehicles (%)	10%	8%	0%	0%	10%	21%	0%	50%	20%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2 4!	4	4!	6			
Permitted Phases					6				4			
Actuated Green, G (s)		61.8			39.8	119.8		13.1	52.9			
Effective Green, g (s)		61.8			39.8	119.8		13.1	52.9			
Actuated g/C Ratio		0.48			0.31	0.92		0.10	0.41			
Clearance Time (s)		5.1			5.1			5.1	5.1			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		1585			1004	1335		145	1056			
v/s Ratio Prot		0.35			0.28	c0.51		0.00	0.04			
v/s Ratio Perm						0.32			0.02			
v/c Ratio		0.74			0.91	0.82		0.05	0.13			
Uniform Delay, d1		27.5			43.3	1.6		52.8	24.2			
Progression Factor		0.31			0.97	1.00		1.00	1.00			
Incremental Delay, d2		1.7			9.9	3.5		0.1	0.1			
Delay (s)		10.3			52.1	5.1		53.0	24.2			
Level of Service		B			D	A		D	C			
Approach Delay (s)		10.3			26.5			25.3			0.0	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM 2000 Control Delay			20.8				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)		15.3			
Intersection Capacity Utilization			117.3%				ICU Level of Service		H			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
3: Sperry Ave & Rogers Rd

Existing Plus Approved (Mitigated)

Timing Plan: PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	 			 						 		
Traffic Volume (vph)	171	1008	267	113	235	126	278	8	117	394	0	920	
Future Volume (vph)	171	1008	267	113	235	126	278	8	117	394	0	920	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3213	3282	1583	1770	3059	1583	1770	1863	1583	1698	1315	1346	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3213	3282	1583	1770	3059	1583	1770	1863	1583	1698	1315	1346	
Peak-hour factor, PHF	0.93	0.93	0.92	0.92	0.88	0.88	0.92	0.92	0.92	0.91	0.92	0.91	
Adj. Flow (vph)	184	1084	290	123	267	143	302	9	127	433	0	1011	
RTOR Reduction (vph)	0	0	155	0	0	124	0	0	104	0	309	92	
Lane Group Flow (vph)	184	1084	135	123	267	19	302	9	23	390	219	434	
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov	
Protected Phases	5	2		1	6		8	8		7	7	5	
Permitted Phases			2			6			8			7	
Actuated Green, G (s)	36.3	45.2	45.2	10.0	16.9	16.9	23.3	23.3	23.3	30.0	30.0	66.3	
Effective Green, g (s)	36.3	45.2	45.2	10.0	16.9	16.9	23.3	23.3	23.3	30.0	30.0	66.3	
Actuated g/C Ratio	0.28	0.35	0.35	0.08	0.13	0.13	0.18	0.18	0.18	0.23	0.23	0.51	
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	897	1141	550	136	397	205	317	333	283	391	303	753	
v/s Ratio Prot	0.06	c0.33		c0.07	0.09		c0.17	0.00		c0.23	0.17	0.16	
v/s Ratio Perm			0.09			0.01			0.01			0.16	
v/c Ratio	0.21	0.95	0.25	0.90	0.67	0.09	0.95	0.03	0.08	1.00	0.72	0.58	
Uniform Delay, d1	35.8	41.3	30.2	59.5	53.9	49.8	52.8	44.0	44.4	50.0	46.2	22.1	
Progression Factor	0.61	0.56	0.28	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	15.1	0.9	49.1	8.8	0.9	37.9	0.0	0.1	44.5	8.2	1.1	
Delay (s)	21.9	38.0	9.4	108.6	62.7	50.7	90.7	44.0	44.6	94.5	54.4	23.2	
Level of Service	C	D	A	F	E	D	F	D	D	F	D	C	
Approach Delay (s)		30.8			70.1			76.3			53.8		
Approach LOS		C			E			E			D		
Intersection Summary													
HCM 2000 Control Delay			49.5		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.98										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						23.5		
Intersection Capacity Utilization			87.7%		ICU Level of Service						E		
Analysis Period (min)			15										
c Critical Lane Group													

HCM 2010 Signalized Intersection Summary
 4: Park Center Dr & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗	↖ ↗				↖ ↗		↖ ↗
Traffic Volume (veh/h)	131	548	0	5	308	86	0	0	0	72	0	87
Future Volume (veh/h)	131	548	0	5	308	86	0	0	0	72	0	87
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	139	583	0	6	342	96				112	0	136
Adj No. of Lanes	2	2	0	1	2	1				1	0	1
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90				0.64	0.64	0.64
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	267	1308	0	18	977	350				279	0	194
Arrive On Green	0.12	0.40	0.00	0.01	0.28	0.28				0.20	0.00	0.20
Sat Flow, veh/h	2167	3399	0	1810	3471	1245				1403	0	973
Grp Volume(v), veh/h	139	583	0	6	342	96				112	0	136
Grp Sat Flow(s),veh/h/ln	1083	1656	0	1810	1736	1245				1403	0	973
Q Serve(g_s), s	2.2	4.8	0.0	0.1	2.9	2.2				2.6	0.0	4.8
Cycle Q Clear(g_c), s	2.2	4.8	0.0	0.1	2.9	2.2				2.6	0.0	4.8
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	267	1308	0	18	977	350				279	0	194
V/C Ratio(X)	0.52	0.45	0.00	0.34	0.35	0.27				0.40	0.00	0.70
Avail Cap(c_a), veh/h	847	3866	0	463	3584	1285				2175	0	1508
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	8.2	0.0	18.2	10.6	10.4				12.9	0.0	13.8
Incr Delay (d2), s/veh	1.6	0.5	0.0	11.1	0.5	0.9				0.9	0.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.3	0.0	0.1	1.4	1.8				1.1	0.0	2.8
LnGrp Delay(d),s/veh	16.8	8.7	0.0	29.3	11.1	11.3				13.9	0.0	18.4
LnGrp LOS	B	A		C	B	B				B		B
Approach Vol, veh/h		722			444						248	
Approach Delay, s/veh		10.3			11.4						16.4	
Approach LOS		B			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	4.9	20.4		11.9	9.1	16.1						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	43.3	43.3		57.5	14.5	38.3						
Max Q Clear Time (g_c+I), s	6.8	6.8		6.8	4.2	4.9						
Green Ext Time (p_c), s	0.0	7.9		0.8	0.3	5.0						
Intersection Summary												
HCM 2010 Ctrl Delay				11.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 5: Baldwin Rd & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	534	59	12	333	64	40	26	21	135	63	103
Future Volume (veh/h)	104	534	59	12	333	64	40	26	21	135	63	103
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1850	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	114	587	65	13	374	72	51	33	27	169	79	129
Adj No. of Lanes	1	2	0	1	1	1	2	1	0	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.78	0.78	0.78	0.80	0.80	0.80
Percent Heavy Veh, %	1	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	165	1138	126	33	520	460	210	145	119	218	403	343
Arrive On Green	0.09	0.36	0.36	0.02	0.28	0.28	0.06	0.15	0.15	0.12	0.21	0.21
Sat Flow, veh/h	1792	3185	352	1660	1827	1615	3510	968	792	1792	1900	1615
Grp Volume(v), veh/h	114	323	329	13	374	72	51	0	60	169	79	129
Grp Sat Flow(s),veh/h/ln	1792	1758	1779	1660	1827	1615	1755	0	1760	1792	1900	1615
Q Serve(g_s), s	3.3	7.6	7.7	0.4	9.7	1.8	0.7	0.0	1.6	4.8	1.8	3.6
Cycle Q Clear(g_c), s	3.3	7.6	7.7	0.4	9.7	1.8	0.7	0.0	1.6	4.8	1.8	3.6
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	165	628	636	33	520	460	210	0	265	218	403	343
V/C Ratio(X)	0.69	0.51	0.52	0.40	0.72	0.16	0.24	0.00	0.23	0.77	0.20	0.38
Avail Cap(c_a), veh/h	272	856	867	189	821	726	433	0	901	775	1560	1326
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	13.3	13.4	25.5	17.0	14.1	23.7	0.0	19.7	22.5	17.1	17.8
Incr Delay (d2), s/veh	1.9	1.4	1.4	15.8	4.0	0.3	0.2	0.0	0.4	2.2	0.2	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	1.7	3.9	4.0	0.3	5.5	0.8	0.4	0.0	0.8	2.5	1.0	1.7
LnGrp Delay(d),s/veh	25.1	14.7	14.7	41.3	20.9	14.5	23.9	0.0	20.1	24.7	17.3	18.5
LnGrp LOS	C	B	B	D	C	B	C		C	C	B	B
Approach Vol, veh/h		766			459			111			377	
Approach Delay, s/veh		16.3			20.5			21.9			21.0	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	24.4	7.4	15.8	9.1	20.5	10.6	12.5				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	25.7	* 6.5	43.3	* 8	23.7	* 23	27.0				
Max Q Clear Time (g_c+1), s	12.4	9.7	2.7	5.6	5.3	11.7	6.8	3.6				
Green Ext Time (p_c), s	0.0	5.9	0.0	0.8	0.0	3.3	0.2	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				18.8								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

Existing Plus Approved (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	542	33	57	468	62	18	56	39	52	38	48
Future Volume (veh/h)	86	542	33	57	468	62	18	56	39	52	38	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	571	35	59	488	65	22	70	49	66	48	61
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.80	0.80	0.80	0.79	0.79	0.79
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	170	1007	62	129	864	115	303	161	113	297	119	151
Arrive On Green	0.09	0.30	0.30	0.07	0.28	0.28	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1810	3356	205	1810	3114	413	1299	1030	721	1290	759	964
Grp Volume(v), veh/h	91	298	308	59	274	279	22	0	119	66	0	109
Grp Sat Flow(s),veh/h/ln	1810	1755	1806	1810	1754	1773	1299	0	1752	1290	0	1723
Q Serve(g_s), s	2.0	5.9	5.9	1.3	5.5	5.6	0.6	0.0	2.5	2.0	0.0	2.4
Cycle Q Clear(g_c), s	2.0	5.9	5.9	1.3	5.5	5.6	3.0	0.0	2.5	4.6	0.0	2.4
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	170	527	542	129	487	492	303	0	274	297	0	269
V/C Ratio(X)	0.53	0.57	0.57	0.46	0.56	0.57	0.07	0.00	0.43	0.22	0.00	0.41
Avail Cap(c_a), veh/h	285	952	980	267	935	945	792	0	933	782	0	918
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	12.2	12.2	18.4	12.8	12.8	17.0	0.0	15.8	17.8	0.0	15.7
Incr Delay (d2), s/veh	2.6	1.4	1.3	2.5	1.5	1.5	0.1	0.0	1.1	0.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.0	3.1	0.7	2.9	2.9	0.2	0.0	1.3	0.7	0.0	1.2
LnGrp Delay(d),s/veh	20.4	13.5	13.5	20.9	14.2	14.3	17.1	0.0	16.9	18.2	0.0	16.7
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		697			612			141			175	
Approach Delay, s/veh		14.4			14.9			16.9			17.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	18.9		13.0	10.4	18.0		13.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.4	22.4		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1), s	7.9	7.9		6.6	4.0	7.6		5.0				
Green Ext Time (p_c), s	0.0	4.1		0.7	0.0	3.8		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			15.1									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 7: Ward Ave & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	156	414	54	232	367	114	62	230	177	107	258	40
Future Volume (veh/h)	156	414	54	232	367	114	62	230	177	107	258	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		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	1863	1841	1900	1881	1857	1900	1845	1881	1863	1881	1900	1900
Adj Flow Rate, veh/h	161	427	56	252	399	124	75	277	213	123	297	46
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.83	0.83	0.83	0.87	0.87	0.87
Percent Heavy Veh, %	2	3	3	1	3	3	3	1	2	1	0	0
Cap, veh/h	202	677	88	308	691	212	326	631	530	311	637	529
Arrive On Green	0.11	0.22	0.22	0.17	0.26	0.26	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1774	3105	405	1792	2648	813	1018	1881	1582	911	1900	1578
Grp Volume(v), veh/h	161	239	244	252	264	259	75	277	213	123	297	46
Grp Sat Flow(s),veh/h/ln	1774	1748	1761	1792	1765	1696	1018	1881	1582	911	1900	1578
Q Serve(g_s), s	5.8	8.1	8.2	8.9	8.5	8.7	4.1	7.5	6.8	8.0	8.1	1.3
Cycle Q Clear(g_c), s	5.8	8.1	8.2	8.9	8.5	8.7	12.2	7.5	6.8	15.5	8.1	1.3
Prop In Lane	1.00		0.23	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	381	384	308	461	443	326	631	530	311	637	529
V/C Ratio(X)	0.80	0.63	0.63	0.82	0.57	0.58	0.23	0.44	0.40	0.40	0.47	0.09
Avail Cap(c_a), veh/h	271	560	564	601	862	828	512	976	821	478	986	818
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	28.3	23.2	23.3	26.1	21.0	21.1	22.0	17.0	16.7	23.0	17.2	14.9
Incr Delay (d2), s/veh	11.4	3.6	3.7	5.3	2.4	2.6	0.8	1.0	1.1	1.7	1.1	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	8.5	4.3	4.4	4.9	4.4	4.4	1.2	4.0	3.1	2.1	4.4	0.6
LnGrp Delay(d),s/veh	39.7	26.8	26.9	31.4	23.4	23.7	22.7	18.0	17.8	24.8	18.3	15.1
LnGrp LOS	D	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		644			775			565			466	
Approach Delay, s/veh		30.1			26.1			18.6			19.7	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.3	20.3		28.0	14.5	23.1		28.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	22.0	21.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+10), s	10.2	10.2		17.5	7.8	10.7		14.2				
Green Ext Time (p_c), s	0.5	3.3		4.2	0.1	5.4		5.1				
Intersection Summary												
HCM 2010 Ctrl Delay				24.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

Existing Plus Approved (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	319	72	25	386	16	35	34	5	5	93	233
Future Volume (veh/h)	178	319	72	25	386	16	35	34	5	5	93	233
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	185	332	75	28	434	18	47	46	7	6	106	265
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.89	0.89	0.89	0.74	0.74	0.74	0.88	0.88	0.88
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	477	1364	304	579	891	786	277	241	30	86	145	350
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	953	2797	624	993	1827	1612	528	816	101	8	492	1184
Grp Volume(v), veh/h	185	203	204	28	434	18	100	0	0	377	0	0
Grp Sat Flow(s),veh/h/ln	953	1721	1700	993	1827	1612	1445	0	0	1685	0	0
Q Serve(g_s), s	7.1	3.0	3.1	0.7	7.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.1	3.0	3.1	3.8	7.0	0.3	1.7	0.0	0.0	8.9	0.0	0.0
Prop In Lane	1.00		0.37	1.00		1.00	0.47		0.07	0.02		0.70
Lane Grp Cap(c), veh/h	477	839	829	579	891	786	548	0	0	581	0	0
V/C Ratio(X)	0.39	0.24	0.25	0.05	0.49	0.02	0.18	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	698	1239	1224	810	1315	1160	888	0	0	1006	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.3	6.5	6.5	7.6	7.5	5.8	11.5	0.0	0.0	14.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.3	0.3	0.1	0.9	0.0	0.2	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.5	1.5	0.2	3.7	0.1	0.9	0.0	0.0	4.3	0.0	0.0
LnGrp Delay(d),s/veh	13.4	6.8	6.9	7.7	8.4	5.8	11.6	0.0	0.0	15.2	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		592			480			100			377	
Approach Delay, s/veh		8.9			8.3			11.6			15.2	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.9		17.8		25.9		17.8				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		31.5		24.0		31.5		24.0				
Max Q Clear Time (g_c+1), s		16.1		3.7		9.0		10.9				
Green Ext Time (p_c), s		5.3		0.5		5.4		2.1				
Intersection Summary												
HCM 2010 Ctrl Delay				10.4								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis
 9: SR-33 & Sperry Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	72	84	14	50	6	127	307	55	34	428	314
Future Volume (vph)	105	72	84	14	50	6	127	307	55	34	428	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	1662		1805	1835		1703	1792		1556	1810	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1703	1662		1805	1835		1703	1792		1556	1810	1553
Peak-hour factor, PHF	0.86	0.86	0.86	0.80	0.80	0.80	0.98	0.98	0.98	0.88	0.88	0.88
Adj. Flow (vph)	122	84	98	18	62	8	130	313	56	39	486	357
RTOR Reduction (vph)	0	64	0	0	7	0	0	7	0	0	0	219
Lane Group Flow (vph)	122	118	0	18	64	0	130	362	0	39	486	138
Heavy Vehicles (%)	6%	4%	6%	0%	2%	0%	6%	3%	7%	16%	5%	4%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	10.3	10.3		4.6	4.6		7.1	31.6		1.8	26.3	26.3
Effective Green, g (s)	10.3	10.3		4.6	4.6		7.1	31.6		1.8	26.3	26.3
Actuated g/C Ratio	0.15	0.15		0.07	0.07		0.10	0.47		0.03	0.39	0.39
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	258	252		122	124		178	835		41	702	602
v/s Ratio Prot	c0.07	0.07		0.01	c0.04		c0.08	0.20		0.03	c0.27	
v/s Ratio Perm												0.09
v/c Ratio	0.47	0.47		0.15	0.52		0.73	0.43		0.95	0.69	0.23
Uniform Delay, d1	26.3	26.3		29.8	30.5		29.4	12.1		33.0	17.4	13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	1.4		0.6	3.6		14.3	1.6		121.0	5.5	0.9
Delay (s)	27.6	27.6		30.3	34.2		43.7	13.8		153.9	22.9	14.8
Level of Service	C	C		C	C		D	B		F	C	B
Approach Delay (s)		27.6			33.4			21.5			25.4	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			25.1				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			67.8				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			54.5%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	30	219	143	304	341	49	49	332	109	111	567	25
Future Volume (veh/h)	30	219	143	304	341	49	49	332	109	111	567	25
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1545	1545	1545	1570	1570	1900
Adj Flow Rate, veh/h	35	258	168	380	426	61	53	361	118	121	616	27
Adj No. of Lanes	1	1	0	2	1	0	1	1	1	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.80	0.80	0.80	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	23	23	23	21	21	21
Cap, veh/h	73	284	185	471	586	84	246	395	516	146	875	38
Arrive On Green	0.04	0.27	0.27	0.14	0.37	0.37	0.05	0.26	0.26	0.10	0.30	0.30
Sat Flow, veh/h	1774	1055	687	3442	1594	228	1471	1545	1313	1495	2912	128
Grp Volume(v), veh/h	35	0	426	380	0	487	53	361	118	121	315	328
Grp Sat Flow(s),veh/h/ln	1774	0	1742	1721	0	1822	1471	1545	1313	1495	1492	1548
Q Serve(g_s), s	1.5	0.0	18.0	8.2	0.0	17.6	2.0	17.3	1.1	6.0	14.3	14.3
Cycle Q Clear(g_c), s	1.5	0.0	18.0	8.2	0.0	17.6	2.0	17.3	1.1	6.0	14.3	14.3
Prop In Lane	1.00		0.39	1.00		0.13	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	73	0	469	471	0	670	246	395	516	146	448	465
V/C Ratio(X)	0.48	0.00	0.91	0.81	0.00	0.73	0.22	0.91	0.23	0.83	0.70	0.70
Avail Cap(c_a), veh/h	140	0	551	1311	0	1132	284	499	604	177	541	561
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	35.7	0.0	26.9	31.9	0.0	20.8	19.7	27.5	5.3	33.7	23.6	23.6
Incr Delay (d2), s/veh	1.8	0.0	15.9	1.3	0.0	0.6	0.2	16.6	0.1	19.9	2.2	2.1
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	0.8	0.0	10.7	3.9	0.0	8.9	0.8	9.1	0.9	3.3	6.1	6.4
LnGrp Delay(d),s/veh	37.5	0.0	42.8	33.1	0.0	21.3	19.9	44.1	5.4	53.7	25.8	25.8
LnGrp LOS	D		D	C		C	B	D	A	D	C	C
Approach Vol, veh/h		461			867			532			764	
Approach Delay, s/veh		42.4			26.5			33.1			30.2	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.6	24.7	11.4	24.4	7.1	33.2	8.0	27.8				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 24	9.0	24.6	6.0	* 47	6.0	27.6				
Max Q Clear Time (g_c+I1), s	11.0	20.0	8.0	19.3	3.5	19.6	4.0	16.3				
Green Ext Time (p_c), s	0.3	0.5	0.0	0.2	0.0	1.1	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				31.7								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	263	9	201	319	69	20	198	265	323	652	8
Future Volume (veh/h)	20	263	9	201	319	69	20	198	265	323	652	8
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.97	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1868	1900	1810	1900	1900	1900	1845	1845	1881	1811	1900
Adj Flow Rate, veh/h	22	292	10	221	351	76	22	218	291	419	847	10
Adj No. of Lanes	1	1	0	1	1	1	1	1	1	2	1	0
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.77	0.77	0.77
Percent Heavy Veh, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	234	361	12	319	561	465	129	788	666	1040	872	10
Arrive On Green	0.02	0.20	0.20	0.12	0.30	0.30	0.02	0.43	0.43	0.08	0.49	0.49
Sat Flow, veh/h	1723	1795	61	1723	1900	1573	1810	1845	1559	3476	1785	21
Grp Volume(v), veh/h	22	0	302	221	351	76	22	218	291	419	0	857
Grp Sat Flow(s),veh/h/ln	1723	0	1856	1723	1900	1573	1810	1845	1559	1738	0	1806
Q Serve(g_s), s	1.0	0.0	15.9	10.0	16.4	3.7	0.7	7.9	13.5	6.6	0.0	47.4
Cycle Q Clear(g_c), s	1.0	0.0	15.9	10.0	16.4	3.7	0.7	7.9	13.5	6.6	0.0	47.4
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	234	0	373	319	561	465	129	788	666	1040	0	883
V/C Ratio(X)	0.09	0.00	0.81	0.69	0.63	0.16	0.17	0.28	0.44	0.40	0.00	0.97
Avail Cap(c_a), veh/h	289	0	518	433	774	641	229	1101	930	1051	0	1093
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	39.1	27.8	31.2	26.8	24.2	19.1	20.7	13.5	0.0	25.5
Incr Delay (d2), s/veh	0.1	0.0	4.5	1.2	0.4	0.1	0.2	0.1	0.2	0.1	0.0	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	0.5	0.0	8.6	4.8	8.6	1.6	0.4	4.0	5.8	3.2	0.0	27.9
LnGrp Delay(d),s/veh	31.6	0.0	43.6	29.0	31.7	26.8	24.4	19.1	20.8	13.6	0.0	43.1
LnGrp LOS	C		D	C	C	C	C	B	C	B		D
Approach Vol, veh/h		324			648			531			1276	
Approach Delay, s/veh		42.8			30.2			20.3			33.4	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	34.9	12.6	48.7	16.0	25.2	6.3	55.0				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.6	41.8	8.9	61.2	18.8	28.6	8.0	62.1				
Max Q Clear Time (g_c+1), s	13.0	18.4	8.6	15.5	12.0	17.9	2.7	49.4				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.1	0.0	0.3	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			31.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (veh/h)	38	127	127	11	47	54	47	216	5	88	625	23
Future Volume (veh/h)	38	127	127	11	47	54	47	216	5	88	625	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1545	1545	1900	1570	1570	1900
Adj Flow Rate, veh/h	46	155	155	13	57	66	51	235	5	97	687	25
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	23	23	23	21	21	21
Cap, veh/h	94	194	176	75	199	203	67	702	15	119	753	27
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.05	0.47	0.47	0.08	0.50	0.50
Sat Flow, veh/h	141	801	726	70	820	839	1471	1507	32	1495	1506	55
Grp Volume(v), veh/h	356	0	0	136	0	0	51	0	240	97	0	712
Grp Sat Flow(s),veh/h/ln	1668	0	0	1729	0	0	1471	0	1539	1495	0	1561
Q Serve(g_s), s	8.4	0.0	0.0	0.0	0.0	0.0	2.3	0.0	6.7	4.3	0.0	28.5
Cycle Q Clear(g_c), s	13.9	0.0	0.0	4.4	0.0	0.0	2.3	0.0	6.7	4.3	0.0	28.5
Prop In Lane	0.13		0.44	0.10		0.49	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	464	0	0	477	0	0	67	0	717	119	0	780
V/C Ratio(X)	0.77	0.00	0.00	0.28	0.00	0.00	0.76	0.00	0.33	0.82	0.00	0.91
Avail Cap(c_a), veh/h	511	0	0	524	0	0	126	0	805	258	0	952
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	21.1	0.0	0.0	32.0	0.0	11.5	30.7	0.0	15.6
Incr Delay (d2), s/veh	6.3	0.0	0.0	0.3	0.0	0.0	16.1	0.0	0.3	12.7	0.0	11.3
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	7.2	0.0	0.0	2.1	0.0	0.0	1.2	0.0	2.9	2.2	0.0	14.5
LnGrp Delay(d),s/veh	30.9	0.0	0.0	21.5	0.0	0.0	48.2	0.0	11.7	43.4	0.0	26.9
LnGrp LOS	C			C			D		B	D		C
Approach Vol, veh/h		356			136			291			809	
Approach Delay, s/veh		30.9			21.5			18.1			28.9	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	37.4		21.0	7.1	39.7		21.0				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	1.7	35.5		18.4	5.8	41.4		18.4				
Max Q Clear Time (g_c+1), s	1.3	8.7		15.9	4.3	30.5		6.4				
Green Ext Time (p_c), s	0.1	1.3		0.6	0.0	3.4		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				26.8								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	396	387	42	37	1	149	10	190	0	3	1
Future Volume (veh/h)	8	396	387	42	37	1	149	10	190	0	3	1
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		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	950	1827	1759	1900	1658	1900	1845	1762	1900	1900	950	1900
Adj Flow Rate, veh/h	12	582	569	84	74	2	403	27	514	0	6	2
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.68	0.68	0.68	0.50	0.50	0.50	0.37	0.37	0.37	0.50	0.50	0.50
Percent Heavy Veh, %	100	4	8	0	15	15	3	100	100	100	100	100
Cap, veh/h	13	728	1032	108	712	19	1013	22	426	0	8	3
Arrive On Green	0.01	0.40	0.40	0.06	0.44	0.44	0.30	0.30	0.30	0.00	0.01	0.01
Sat Flow, veh/h	905	1827	1475	1810	1606	43	3408	75	1434	0	682	227
Grp Volume(v), veh/h	12	582	569	84	0	76	403	0	541	0	0	8
Grp Sat Flow(s),veh/h/ln	905	1827	1475	1810	0	1649	1704	0	1509	0	0	910
Q Serve(g_s), s	1.0	21.8	14.8	3.5	0.0	2.1	7.3	0.0	23.0	0.0	0.0	0.7
Cycle Q Clear(g_c), s	1.0	21.8	14.8	3.5	0.0	2.1	7.3	0.0	23.0	0.0	0.0	0.7
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.95	0.00		0.25
Lane Grp Cap(c), veh/h	13	728	1032	108	0	731	1013	0	448	0	0	11
V/C Ratio(X)	0.90	0.80	0.55	0.78	0.00	0.10	0.40	0.00	1.21	0.00	0.00	0.72
Avail Cap(c_a), veh/h	64	1121	1349	129	0	1012	1013	0	448	0	0	71
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	20.6	5.8	35.9	0.0	12.6	21.7	0.0	27.2	0.0	0.0	38.1
Incr Delay (d2), s/veh	89.3	2.4	0.5	21.6	0.0	0.1	0.3	0.0	112.4	0.0	0.0	60.2
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	0.6	11.3	12.0	2.4	0.0	1.0	3.4	0.0	23.5	0.0	0.0	0.4
LnGrp Delay(d),s/veh	127.4	22.9	6.3	57.5	0.0	12.6	21.9	0.0	139.6	0.0	0.0	98.3
LnGrp LOS	F	C	A	E		B	C		F			F
Approach Vol, veh/h		1163			160			944			8	
Approach Delay, s/veh		15.9			36.2			89.4			98.3	
Approach LOS		B			D			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.5	9.1	35.3		5.4	5.6	38.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		23.0	5.5	47.5		6.0	5.5	47.5				
Max Q Clear Time (g_c+1), s		25.0	5.5	23.8		2.7	3.0	4.1				
Green Ext Time (p_c), s		0.0	0.0	7.1		0.0	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			48.1									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	496	226	29	131	153	249	393	33	291	621	0
Future Volume (veh/h)	0	496	226	29	131	153	249	393	33	291	621	0
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	1863	1484	1900	1827	1900	1557	1496	1827	1681	1900
Adj Flow Rate, veh/h	0	1984	904	42	190	222	290	457	38	404	862	0
Adj No. of Lanes	1	2	1	1	1	1	2	2	1	2	2	0
Peak Hour Factor	0.25	0.25	0.25	0.69	0.69	0.69	0.86	0.86	0.86	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	28	0	4	0	22	27	4	13	13
Cap, veh/h	65	1865	835	65	1001	1029	285	625	269	457	848	0
Arrive On Green	0.00	0.53	0.53	0.53	0.53	0.53	0.08	0.21	0.21	0.14	0.27	0.00
Sat Flow, veh/h	970	3539	1583	71	1900	1553	3510	2959	1272	3375	3279	0
Grp Volume(v), veh/h	0	1984	904	42	190	222	290	457	38	404	862	0
Grp Sat Flow(s),veh/h/ln	970	1770	1583	71	1900	1553	1755	1480	1272	1688	1597	0
Q Serve(g_s), s	0.0	58.4	58.4	0.0	5.8	6.2	9.0	16.0	2.7	13.0	29.4	0.0
Cycle Q Clear(g_c), s	0.0	58.4	58.4	58.4	5.8	6.2	9.0	16.0	2.7	13.0	29.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	65	1865	835	65	1001	1029	285	625	269	457	848	0
V/C Ratio(X)	0.00	1.06	1.08	0.65	0.19	0.22	1.02	0.73	0.14	0.88	1.02	0.00
Avail Cap(c_a), veh/h	65	1865	835	65	1001	1029	285	625	269	457	848	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	26.2	26.2	55.4	13.8	7.4	50.9	40.8	35.5	47.0	40.7	0.0
Incr Delay (d2), s/veh	0.0	40.1	56.2	20.0	0.1	0.1	57.7	4.4	0.2	18.2	35.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	38.6	38.4	1.6	3.1	2.7	6.6	6.9	1.0	7.2	17.0	0.0
LnGrp Delay(d),s/veh	0.0	66.3	82.4	75.4	13.9	7.5	108.7	45.1	35.8	65.3	75.9	0.0
LnGrp LOS		F	F	E	B	A	F	D	D	E	F	
Approach Vol, veh/h		2888			454			785			1266	
Approach Delay, s/veh		71.3			16.4			68.2			72.5	
Approach LOS		E			B			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	28.5		63.3	13.0	34.5		63.3				
Change Period (Y+Rc), s	4.0	5.1		* 4.9	4.0	* 5.1		4.9				
Max Green Setting (Gmax), s	15.0	22.9		* 58	9.0	* 29		58.1				
Max Q Clear Time (g_c+1/3), s	15.0	18.0		60.4	11.0	31.4		60.4				
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				66.5								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	177	344	0	250	0	0	1	498	390	0	224	0
Future Volume (veh/h)	177	344	0	250	0	0	1	498	390	0	224	0
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	1863	1759	1759	1759	1610	1610	1610	1638	1638	1900
Adj Flow Rate, veh/h	708	1376	0	291	0	0	1	692	542	0	311	0
Adj No. of Lanes	1	2	1	2	1	1	1	2	1	1	2	0
Peak Hour Factor	0.25	0.25	0.25	0.86	0.86	0.86	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	8	8	8	18	18	18	16	16	16
Cap, veh/h	754	1519	680	376	211	102	2	840	534	2	670	0
Arrive On Green	0.42	0.43	0.00	0.12	0.00	0.00	0.00	0.27	0.27	0.00	0.22	0.00
Sat Flow, veh/h	1774	3539	1583	3250	1759	1495	1533	3059	1369	1560	3194	0
Grp Volume(v), veh/h	708	1376	0	291	0	0	1	692	542	0	311	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1625	1759	1495	1533	1530	1369	1560	1556	0
Q Serve(g_s), s	29.6	28.2	0.0	6.7	0.0	4.0	0.1	16.4	21.3	0.0	6.8	0.0
Cycle Q Clear(g_c), s	29.6	28.2	0.0	6.7	0.0	4.0	0.1	16.4	21.3	0.0	6.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	754	1519	680	376	211	102	2	840	534	2	670	0
V/C Ratio(X)	0.94	0.91	0.00	0.77	0.00	0.00	0.47	0.82	1.01	0.00	0.46	0.00
Avail Cap(c_a), veh/h	846	1574	704	469	211	102	99	840	534	111	834	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	21.3	20.7	0.0	33.3	0.0	0.0	38.7	26.4	23.6	0.0	26.5	0.0
Incr Delay (d2), s/veh	16.9	7.7	0.0	6.2	0.0	0.0	112.8	6.7	42.6	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	15.2	0.0	3.4	0.0	0.0	0.1	7.7	17.6	0.0	2.9	0.0
LnGrp Delay(d),s/veh	38.3	28.4	0.0	39.5	0.0	0.0	151.5	33.1	66.3	0.0	27.0	0.0
LnGrp LOS	D	C		D			F	C	F		C	
Approach Vol, veh/h		2084			291			1235			311	
Approach Delay, s/veh		31.8			39.5			47.7			27.0	
Approach LOS		C			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	26.3	13.5	37.8	4.6	21.7	37.5	13.8				
Change Period (Y+Rc), s	4.0	* 5	4.5	4.5	4.5	5.0	4.5	4.5				
Max Green Setting (Gmax), s	5.5	* 21	11.2	34.5	5.0	20.8	37.0	8.7				
Max Q Clear Time (g_c+1), s	10.0	23.3	8.7	30.2	2.1	8.8	31.6	0.0				
Green Ext Time (p_c), s	0.0	0.0	0.2	3.1	0.0	1.4	1.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			37.0									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 16: Baldwin Rd & Zacharias Rd

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	822	8	17	257	1	5	165	14	2	150	0
Future Volume (veh/h)	0	822	8	17	257	1	5	165	14	2	150	0
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	1863	1759	1759	1759	1743	1743	1900	1667	1667	1900
Adj Flow Rate, veh/h	0	1142	11	20	299	1	6	206	18	2	163	0
Adj No. of Lanes	1	2	1	2	2	1	1	1	0	1	1	0
Peak Hour Factor	0.72	0.72	0.72	0.86	0.86	0.86	0.80	0.80	0.80	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	8	8	8	9	9	9	14	14	14
Cap, veh/h	689	1375	615	394	405	181	13	256	22	4	262	0
Arrive On Green	0.00	0.39	0.39	0.12	0.12	0.12	0.01	0.16	0.16	0.00	0.16	0.00
Sat Flow, veh/h	1774	3539	1583	3250	3343	1495	1660	1581	138	1587	1667	0
Grp Volume(v), veh/h	0	1142	11	20	299	1	6	0	224	2	163	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1625	1671	1495	1660	0	1719	1587	1667	0
Q Serve(g_s), s	0.0	19.2	0.3	0.4	5.7	0.0	0.2	0.0	8.3	0.1	6.0	0.0
Cycle Q Clear(g_c), s	0.0	19.2	0.3	0.4	5.7	0.0	0.2	0.0	8.3	0.1	6.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	689	1375	615	394	405	181	13	0	279	4	262	0
V/C Ratio(X)	0.00	0.83	0.02	0.05	0.74	0.01	0.46	0.00	0.80	0.46	0.62	0.00
Avail Cap(c_a), veh/h	787	1571	703	455	467	209	139	0	384	133	372	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	18.2	12.4	25.6	27.9	25.4	32.5	0.0	26.6	32.8	25.9	0.0
Incr Delay (d2), s/veh	0.0	3.5	0.0	0.1	5.2	0.0	22.9	0.0	8.4	61.5	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.0	0.1	0.2	2.9	0.0	0.2	0.0	4.6	0.1	2.9	0.0
LnGrp Delay(d),s/veh	0.0	21.7	12.4	25.6	33.1	25.4	55.4	0.0	34.9	94.3	28.3	0.0
LnGrp LOS		C	B	C	C	C	E		C	F	C	
Approach Vol, veh/h		1153			320			230			165	
Approach Delay, s/veh		21.6			32.6			35.5			29.1	
Approach LOS		C			C			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	4.2	16.5		31.4	4.5	16.1		13.8				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	14.7		29.2	5.5	14.7		9.2				
Max Q Clear Time (g_c+I), s	10.3	10.3		21.2	2.2	8.0		7.7				
Green Ext Time (p_c), s	0.0	0.4		4.4	0.0	0.4		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				25.8								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	39	806	45	576	936	12		
Future Volume (veh/h)	39	806	45	576	936	12		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1881	1712	1667	1900		
Adj Flow Rate, veh/h	55	1135	59	758	996	13		
Adj No. of Lanes	1	2	1	2	2	0		
Peak Hour Factor	0.71	0.71	0.76	0.76	0.94	0.94		
Percent Heavy Veh, %	2	2	1	11	14	14		
Cap, veh/h	805	1264	77	1403	1116	15		
Arrive On Green	0.45	0.45	0.04	0.43	0.35	0.35		
Sat Flow, veh/h	1774	2787	1792	3338	3284	42		
Grp Volume(v), veh/h	55	1135	59	758	493	516		
Grp Sat Flow(s),veh/h/ln	1774	1393	1792	1626	1583	1659		
Q Serve(g_s), s	1.8	37.9	3.3	17.4	29.7	29.7		
Cycle Q Clear(g_c), s	1.8	37.9	3.3	17.4	29.7	29.7		
Prop In Lane	1.00	1.00	1.00			0.03		
Lane Grp Cap(c), veh/h	805	1264	77	1403	552	578		
V/C Ratio(X)	0.07	0.90	0.76	0.54	0.89	0.89		
Avail Cap(c_a), veh/h	1306	2051	373	2071	616	645		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.5	25.4	47.7	21.3	31.1	31.1		
Incr Delay (d2), s/veh	0.0	3.5	14.4	0.3	14.3	13.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	25.1	1.9	7.9	15.1	15.7		
LnGrp Delay(d),s/veh	15.6	28.9	62.1	21.6	45.4	44.9		
LnGrp LOS	B	C	E	C	D	D		
Approach Vol, veh/h	1190			817	1009			
Approach Delay, s/veh	28.3			24.5	45.1			
Approach LOS	C			C	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		49.3		51.5	8.3	41.0		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		64.2		74.2	21.0	39.2		
Max Q Clear Time (g_c+I1), s		19.4		39.9	5.3	31.7		
Green Ext Time (p_c), s		5.5		5.9	0.1	3.5		
Intersection Summary								
HCM 2010 Ctrl Delay			32.9					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
18: SR-33 & Ward Ave

Existing Plus Approved (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	255	14	5	260	999	353		
Future Volume (veh/h)	255	14	5	260	999	353		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1743	1545	1545	1570	1570		
Adj Flow Rate, veh/h	359	20	6	310	1052	372		
Adj No. of Lanes	1	1	1	1	2	1		
Peak Hour Factor	0.71	0.71	0.84	0.84	0.95	0.95		
Percent Heavy Veh, %	9	9	23	23	21	21		
Cap, veh/h	423	378	12	824	1335	597		
Arrive On Green	0.25	0.25	0.01	0.53	0.45	0.45		
Sat Flow, veh/h	1660	1482	1471	1545	3062	1335		
Grp Volume(v), veh/h	359	20	6	310	1052	372		
Grp Sat Flow(s),veh/h/ln	1660	1482	1471	1545	1492	1335		
Q Serve(g_s), s	10.6	0.5	0.2	6.0	15.5	11.0		
Cycle Q Clear(g_c), s	10.6	0.5	0.2	6.0	15.5	11.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	423	378	12	824	1335	597		
V/C Ratio(X)	0.85	0.05	0.51	0.38	0.79	0.62		
Avail Cap(c_a), veh/h	577	515	143	1087	1577	705		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	18.2	14.5	25.4	7.0	12.1	10.9		
Incr Delay (d2), s/veh	8.6	0.1	30.4	0.3	2.3	1.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.8	0.5	0.2	2.6	6.7	4.2		
LnGrp Delay(d),s/veh	26.8	14.5	55.8	7.3	14.5	12.2		
LnGrp LOS	C	B	E	A	B	B		
Approach Vol, veh/h	379			316	1424			
Approach Delay, s/veh	26.2			8.2	13.9			
Approach LOS	C			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		33.2		18.2	4.4	28.8		
Change Period (Y+Rc), s		5.8		5.1	4.0	5.8		
Max Green Setting (Gmax), s		36.2		17.9	5.0	27.2		
Max Q Clear Time (g_c+I1), s		8.0		12.6	2.2	17.5		
Green Ext Time (p_c), s		1.7		0.6	0.0	5.6		
Intersection Summary								
HCM 2010 Ctrl Delay			15.2					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	Y		↑↑		Y	↑↑		
Traffic Volume (veh/h)	81	54	482	34	140	1639		
Future Volume (veh/h)	81	54	482	34	140	1639		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1900	1712	1900	1667	1667		
Adj Flow Rate, veh/h	114	76	626	44	146	1707		
Adj No. of Lanes	0	0	2	0	1	2		
Peak Hour Factor	0.71	0.71	0.77	0.77	0.96	0.96		
Percent Heavy Veh, %	0	0	11	11	14	14		
Cap, veh/h	137	92	1404	99	183	2037		
Arrive On Green	0.15	0.15	0.46	0.46	0.12	0.64		
Sat Flow, veh/h	946	631	3169	216	1587	3250		
Grp Volume(v), veh/h	191	0	330	340	146	1707		
Grp Sat Flow(s),veh/h/ln	1585	0	1626	1674	1587	1583		
Q Serve(g_s), s	6.4	0.0	7.6	7.6	4.9	22.9		
Cycle Q Clear(g_c), s	6.4	0.0	7.6	7.6	4.9	22.9		
Prop In Lane	0.60	0.40		0.13	1.00			
Lane Grp Cap(c), veh/h	230	0	740	762	183	2037		
V/C Ratio(X)	0.83	0.00	0.45	0.45	0.80	0.84		
Avail Cap(c_a), veh/h	231	0	740	762	376	2331		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.8	0.0	10.2	10.2	23.7	7.6		
Incr Delay (d2), s/veh	21.7	0.0	0.4	0.4	7.8	2.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.2	0.0	3.5	3.6	2.5	10.4		
LnGrp Delay(d),s/veh	44.5	0.0	10.6	10.6	31.4	10.1		
LnGrp LOS	D		B	B	C	B		
Approach Vol, veh/h	191		670			1853		
Approach Delay, s/veh	44.5		10.6			11.8		
Approach LOS	D		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	30.3	30.8				41.1		13.8
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	13.0	23.4				40.4		8.0
Max Q Clear Time (g_c+1), s	10.9	9.6				24.9		8.4
Green Ext Time (p_c), s	0.2	3.2				10.4		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			13.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
20: SR-33 & Baldwin Rd

Existing Plus Approved (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	133	12	0	339	958	108		
Future Volume (veh/h)	133	12	0	339	958	108		
Number	5	12	3	8	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1743	1881	1712	1667	1900		
Adj Flow Rate, veh/h	148	13	0	446	1089	123		
Adj No. of Lanes	1	1	1	1	2	0		
Peak Hour Factor	0.90	0.90	0.76	0.76	0.88	0.88		
Percent Heavy Veh, %	9	9	1	11	14	14		
Cap, veh/h	286	255	5	893	1497	169		
Arrive On Green	0.17	0.17	0.00	0.52	0.52	0.52		
Sat Flow, veh/h	1660	1482	1792	1712	2953	324		
Grp Volume(v), veh/h	148	13	0	446	600	612		
Grp Sat Flow(s),veh/h/ln	1660	1482	1792	1712	1583	1610		
Q Serve(g_s), s	3.1	0.3	0.0	6.4	11.1	11.1		
Cycle Q Clear(g_c), s	3.1	0.3	0.0	6.4	11.1	11.1		
Prop In Lane	1.00	1.00	1.00			0.20		
Lane Grp Cap(c), veh/h	286	255	5	893	826	840		
V/C Ratio(X)	0.52	0.05	0.00	0.50	0.73	0.73		
Avail Cap(c_a), veh/h	469	418	260	1702	1178	1197		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.3	13.1	0.0	5.9	7.0	7.0		
Incr Delay (d2), s/veh	1.4	0.1	0.0	0.4	1.3	1.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.5	0.1	0.0	3.1	5.0	5.1		
LnGrp Delay(d),s/veh	15.7	13.2	0.0	6.3	8.3	8.3		
LnGrp LOS	B	B		A	A	A		
Approach Vol, veh/h	161			446	1212			
Approach Delay, s/veh	15.5			6.3	8.3			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		12.3	0.0	25.6				25.6
Change Period (Y+Rc), s		5.8	4.0	5.8				5.8
Max Green Setting (Gmax), s		10.7	5.5	28.2				37.7
Max Q Clear Time (g_c+I1), s		5.1	0.0	13.1				8.4
Green Ext Time (p_c), s		0.2	0.0	6.7				2.6
Intersection Summary								
HCM 2010 Ctrl Delay			8.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
21: Rogers Rd & SR-33

Existing Plus Approved (Mitigated)
Timing Plan: PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↵	↑	↵			
Traffic Volume (veh/h)	1077	109	5	284	297	25		
Future Volume (veh/h)	1077	109	5	284	297	25		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1712	1900	1667	1667	1610	1900		
Adj Flow Rate, veh/h	1210	122	6	346	371	31		
Adj No. of Lanes	2	0	1	1	0	0		
Peak Hour Factor	0.89	0.89	0.82	0.82	0.80	0.80		
Percent Heavy Veh, %	11	11	14	14	0	0		
Cap, veh/h	1439	145	12	909	412	34		
Arrive On Green	0.48	0.48	0.01	0.55	0.29	0.29		
Sat Flow, veh/h	3070	300	1587	1667	1399	117		
Grp Volume(v), veh/h	658	674	6	346	403	0		
Grp Sat Flow(s),veh/h/ln	1626	1659	1587	1667	1520	0		
Q Serve(g_s), s	25.5	25.7	0.3	8.6	18.4	0.0		
Cycle Q Clear(g_c), s	25.5	25.7	0.3	8.6	18.4	0.0		
Prop In Lane		0.18	1.00		0.92	0.08		
Lane Grp Cap(c), veh/h	784	800	12	909	448	0		
V/C Ratio(X)	0.84	0.84	0.48	0.38	0.90	0.00		
Avail Cap(c_a), veh/h	902	920	110	1132	612	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	16.3	16.4	35.8	9.5	24.5	0.0		
Incr Delay (d2), s/veh	6.4	6.4	26.1	0.3	13.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	12.7	13.0	0.2	4.0	9.3	0.0		
LnGrp Delay(d),s/veh	22.7	22.8	61.9	9.7	37.5	0.0		
LnGrp LOS	C	C	E	A	D			
Approach Vol, veh/h	1332			352	403			
Approach Delay, s/veh	22.7			10.6	37.5			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		27.2	4.6	40.7				45.3
Change Period (Y+Rc), s		5.8	4.0	5.8				5.8
Max Green Setting (Gmax), s		29.2	5.0	40.2				49.2
Max Q Clear Time (g_c+1), s		20.4	2.3	27.7				10.6
Green Ext Time (p_c), s		0.9	0.0	7.2				2.3
Intersection Summary								
HCM 2010 Ctrl Delay			23.5					
HCM 2010 LOS			C					

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	44	6	0	19	2	3	48	5	10	77	4
Future Vol, veh/h	7	44	6	0	19	2	3	48	5	10	77	4
Peak Hour Factor	0.75	0.75	0.75	0.54	0.54	0.54	0.50	0.50	0.50	0.79	0.79	0.79
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	9	59	8	0	35	4	6	96	10	13	97	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.9	8	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	12%	0%	11%
Vol Thru, %	86%	77%	90%	85%
Vol Right, %	9%	11%	10%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	57	21	91
LT Vol	3	7	0	10
Through Vol	48	44	19	77
RT Vol	5	6	2	4
Lane Flow Rate	112	76	39	115
Geometry Grp	1	1	1	1
Degree of Util (X)	0.133	0.096	0.05	0.138
Departure Headway (Hd)	4.286	4.551	4.593	4.32
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	839	790	782	833
Service Time	2.298	2.565	2.608	2.332
HCM Lane V/C Ratio	0.133	0.096	0.05	0.138
HCM Control Delay	8	8	7.9	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.2	0.5

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	40	2	4	1	9	19	9	3	51	1
Future Vol, veh/h	3	3	40	2	4	1	9	19	9	3	51	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	58	58	58	91	91	91	72	72	72
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	4	4	60	3	7	2	10	21	10	4	71	1






















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	131	131	72	158	126	26	72	0	0	31	0	0
Stage 1	80	80	-	46	46	-	-	-	-	-	-	-
Stage 2	51	51	-	112	80	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	828	749	974	792	752	1030	1528	-	-	1582	-	-
Stage 1	914	817	-	950	843	-	-	-	-	-	-	-
Stage 2	947	841	-	876	815	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	815	742	974	734	744	1030	1528	-	-	1582	-	-
Mov Cap-2 Maneuver	815	742	-	734	744	-	-	-	-	-	-	-
Stage 1	908	815	-	943	837	-	-	-	-	-	-	-
Stage 2	931	835	-	815	813	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	9.7	1.8	0.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	943	772	1582	-	-
HCM Lane V/C Ratio	0.006	-	-	0.073	0.016	0.003	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	384	7	42	636	51	5	26	50	184	89	41
Future Volume (veh/h)	7	384	7	42	636	51	5	26	50	184	89	41
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	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	8	422	8	46	699	56	6	33	64	207	100	46
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.78	0.78	0.78	0.89	0.89	0.89
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	17	737	14	70	772	62	133	42	82	258	176	81
Arrive On Green	0.01	0.44	0.44	0.04	0.48	0.48	0.07	0.07	0.07	0.15	0.15	0.15
Sat Flow, veh/h	1616	1659	31	1691	1623	130	1774	568	1101	1774	1209	556
Grp Volume(v), veh/h	8	0	430	46	0	755	6	0	97	207	0	146
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1668	1774	0	1765
Q Serve(g_s), s	0.4	0.0	13.8	2.0	0.0	28.9	0.2	0.0	4.2	8.2	0.0	5.6
Cycle Q Clear(g_c), s	0.4	0.0	13.8	2.0	0.0	28.9	0.2	0.0	4.2	8.2	0.0	5.6
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.32
Lane Grp Cap(c), veh/h	17	0	751	70	0	834	133	0	125	258	0	257
V/C Ratio(X)	0.48	0.00	0.57	0.65	0.00	0.91	0.05	0.00	0.78	0.80	0.00	0.57
Avail Cap(c_a), veh/h	111	0	933	162	0	1015	200	0	188	321	0	320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	0.0	15.1	34.4	0.0	17.6	31.3	0.0	33.1	30.1	0.0	29.0
Incr Delay (d2), s/veh	20.2	0.0	0.7	9.8	0.0	10.0	0.1	0.0	11.0	11.0	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	6.6	1.1	0.0	16.2	0.1	0.0	2.3	4.8	0.0	2.9
LnGrp Delay(d),s/veh	56.0	0.0	15.8	44.3	0.0	27.7	31.4	0.0	44.1	41.1	0.0	31.0
LnGrp LOS	E		B	D		C	C		D	D		C
Approach Vol, veh/h		438			801			103			353	
Approach Delay, s/veh		16.5			28.6			43.3			36.9	
Approach LOS		B			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.3	7.0	38.2		16.4	4.7	40.5				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		8.2	7.0	40.2		13.2	5.0	42.2				
Max Q Clear Time (g_c+I1), s		6.2	4.0	15.8		10.2	2.4	30.9				
Green Ext Time (p_c), s		0.1	0.0	2.4		0.4	0.0	3.7				
Intersection Summary												
HCM 2010 Ctrl Delay			28.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

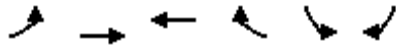
Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	594	9	53	852	55	9	12	20	157	42	20
Future Volume (veh/h)	5	594	9	53	852	55	9	12	20	157	42	20
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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	660	10	55	878	57	11	15	25	171	46	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.97	0.97	0.97	0.79	0.79	0.79	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	13	914	14	79	969	63	100	123	155	284	54	25
Arrive On Green	0.01	0.55	0.55	0.05	0.59	0.59	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1616	1667	25	1691	1650	107	208	673	847	1070	294	138
Grp Volume(v), veh/h	6	0	670	55	0	935	51	0	0	239	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1728	0	0	1503	0	0
Q Serve(g_s), s	0.3	0.0	20.8	2.3	0.0	33.0	0.0	0.0	0.0	9.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	20.8	2.3	0.0	33.0	1.8	0.0	0.0	10.8	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	13	0	928	79	0	1032	378	0	0	363	0	0
V/C Ratio(X)	0.47	0.00	0.72	0.69	0.00	0.91	0.13	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	115	0	1231	144	0	1303	378	0	0	384	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.8	0.0	11.9	33.0	0.0	12.8	24.2	0.0	0.0	27.7	0.0	0.0
Incr Delay (d2), s/veh	24.8	0.0	1.4	10.4	0.0	7.9	0.2	0.0	0.0	3.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	9.9	1.3	0.0	18.1	0.9	0.0	0.0	4.9	0.0	0.0
LnGrp Delay(d),s/veh	59.6	0.0	13.3	43.4	0.0	20.7	24.4	0.0	0.0	31.5	0.0	0.0
LnGrp LOS	E		B	D		C	C			C		
Approach Vol, veh/h		676			990			51			239	
Approach Delay, s/veh		13.7			22.0			24.4			31.5	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.7	7.3	44.4		18.7	4.6	47.1				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		7.5	6.0	51.2		13.9	5.0	52.2				
Max Q Clear Time (g_c+1), s		3.8	4.3	22.8		12.8	2.3	35.0				
Green Ext Time (p_c), s		0.0	0.0	4.5		0.1	0.0	6.3				
Intersection Summary												
HCM 2010 Ctrl Delay			20.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 26: Las Palmas Ave/W Main Ave & Jennings Rd

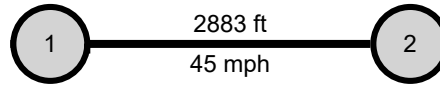
Existing Plus Approved (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	224	794	527	0	6	490		
Future Volume (veh/h)	224	794	527	0	6	490		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1712	1712	1810	1900	1863	1863		
Adj Flow Rate, veh/h	252	892	643	0	7	563		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.89	0.89	0.82	0.82	0.87	0.87		
Percent Heavy Veh, %	11	11	5	5	2	2		
Cap, veh/h	295	1080	691	0	306	560		
Arrive On Green	0.18	0.63	0.38	0.00	0.17	0.17		
Sat Flow, veh/h	1630	1712	1810	0	1774	1583		
Grp Volume(v), veh/h	252	892	643	0	7	563		
Grp Sat Flow(s),veh/h/ln	1630	1712	1810	0	1774	1583		
Q Serve(g_s), s	8.8	23.7	20.1	0.0	0.2	10.2		
Cycle Q Clear(g_c), s	8.8	23.7	20.1	0.0	0.2	10.2		
Prop In Lane	1.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	295	1080	691	0	306	560		
V/C Ratio(X)	0.85	0.83	0.93	0.00	0.02	1.01		
Avail Cap(c_a), veh/h	304	1107	711	0	306	560		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	23.4	8.4	17.5	0.0	20.3	19.1		
Incr Delay (d2), s/veh	20.1	5.2	18.5	0.0	0.0	39.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.6	12.5	13.6	0.0	0.1	21.2		
LnGrp Delay(d),s/veh	43.5	13.6	36.0	0.0	20.3	58.5		
LnGrp LOS	D	B	D		C	F		
Approach Vol, veh/h		1144	643		570			
Approach Delay, s/veh		20.2	36.0		58.0			
Approach LOS		C	D		E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				43.0		16.0	14.7	28.4
Change Period (Y+Rc), s				5.8		5.8	4.0	5.8
Max Green Setting (Gmax), s				38.2		10.2	11.0	23.2
Max Q Clear Time (g_c+I1), s				25.7		12.2	10.8	22.1
Green Ext Time (p_c), s				4.9		0.0	0.0	0.5
Intersection Summary								
HCM 2010 Ctrl Delay			33.6					
HCM 2010 LOS			C					

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	145
Intersections	Sperry Rd/Rogers Rd		Sperry Rd/Park Center Dr		Analysis Period	1> 7:00
Project Description	Existing Plus Approved Projects					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2883	2883	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	48.46			45.11		
1	Running Speed, mph	40.57			43.58		
1	Through Delay, s/veh	11.17			52.58		
1	Travel Time, s	59.62			97.68		
1	Travel Speed, mph	32.97			20.12		
1	Stop Rate, stops/veh	0.48			0.90		
1	Spatial Stop Rate, stops/mi	0.88			1.66		
1	Through vol/cap Ratio	0.80			0.82		
1	Percent of Base FFS	72.84			43.19		
1	Level of Service	B			D		
1	Auto Traveler Perception Score	2.27			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	3.92	D
1	Bicycle Segment LOS Score / LOS	4.87	E	4.90	E
1	Transit Segment LOS Score / LOS	6.88	F	6.53	F

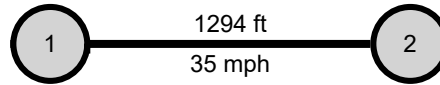
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		59.62		97.68	
Facility Travel Speed, mph		32.97		20.12	
Facility Base Free Flow Speed, mph		45.26		46.59	
Facility Percent of Base FFS		72.84		43.19	
Facility Level of Service		B		D	
Facility Auto Traveler Perception Score		2.27		2.39	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			3.92	D
Bicycle Facility LOS Score / LOS	4.87	E	4.90	E
Transit Facility LOS Score / LOS	6.88	F	6.53	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	53	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1294	1294	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	38.00			38.11		
1	Running Time, s	26.04			25.83		
1	Running Speed, mph	33.88			34.16		
1	Through Delay, s/veh	0.47			22.10		
1	Travel Time, s	26.51			47.92		
1	Travel Speed, mph	33.28			18.41		
1	Stop Rate, stops/veh	0.02			0.75		
1	Spatial Stop Rate, stops/mi	0.09			3.08		
1	Through vol/cap Ratio	0.17			0.60		
1	Percent of Base FFS	87.59			48.30		
1	Level of Service	A			D		
1	Auto Traveler Perception Score	2.15			2.63		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.40	C	3.36	C
1	Bicycle Segment LOS Score / LOS	3.77	D	6.87	F
1	Transit Segment LOS Score / LOS	4.40	E	4.33	E

Facility Output Data

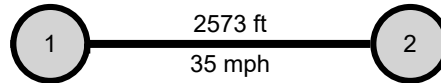
		Northbound		Southbound	
Facility Travel Time, s		26.51		47.92	
Facility Travel Speed, mph		33.28		18.41	
Facility Base Free Flow Speed, mph		38.00		38.11	
Facility Percent of Base FFS		87.59		48.30	
Facility Level of Service		A		D	
Facility Auto Traveler Perception Score		2.15		2.63	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.40	C	3.36	C
Bicycle Facility LOS Score / LOS	3.77	D	6.87	F
Transit Facility LOS Score / LOS	4.40	E	4.33	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2573	2573	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	40.75			40.62		
1	Running Time, s	44.68			46.17		
1	Running Speed, mph	39.26			38.00		
1	Through Delay, s/veh	0.17			0.66		
1	Travel Time, s	44.85			46.83		
1	Travel Speed, mph	39.12			37.46		
1	Stop Rate, stops/veh	0.01			0.01		
1	Spatial Stop Rate, stops/mi	0.02			0.03		
1	Through vol/cap Ratio	0.05			0.34		
1	Percent of Base FFS	95.99			92.23		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.14			2.14		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.19	C	3.56	D
1	Transit Segment LOS Score / LOS	4.35	E	4.58	E

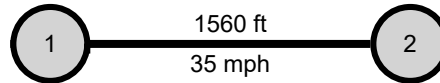
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	44.85	46.83	
Facility Travel Speed, mph	39.12	37.46			
Facility Base Free Flow Speed, mph	40.75	40.62			
Facility Percent of Base FFS	95.99	92.23			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.14	2.14			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.19	C	3.56 D
Transit Facility LOS Score / LOS	4.35	E	4.58 E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward Ave	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	27.96			27.82		
1	Running Speed, mph	38.04			38.24		
1	Through Delay, s/veh	1.29			1.18		
1	Travel Time, s	29.25			29.00		
1	Travel Speed, mph	36.36			36.67		
1	Stop Rate, stops/veh	0.42			0.42		
1	Spatial Stop Rate, stops/mi	1.43			1.41		
1	Through vol/cap Ratio	0.18			0.06		
1	Percent of Base FFS	87.03			87.78		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.58			2.57		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.67	E	4.37	E
1	Transit Segment LOS Score / LOS	6.59	F	6.49	F

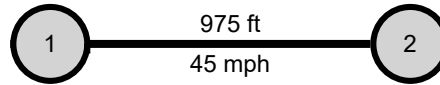
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	29.25	29.00	
Facility Travel Speed, mph	36.36	36.67			
Facility Base Free Flow Speed, mph	41.78	41.78			
Facility Percent of Base FFS	87.03	87.78			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.58	2.57			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.67	E	4.37
Transit Facility LOS Score / LOS	6.59	F	6.49

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_A		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	18.75			18.19		
1	Running Speed, mph	35.46			36.54		
1	Through Delay, s/veh	1.57			0.84		
1	Travel Time, s	20.32			19.03		
1	Travel Speed, mph	32.72			34.94		
1	Stop Rate, stops/veh	0.27			0.27		
1	Spatial Stop Rate, stops/mi	1.48			1.47		
1	Through vol/cap Ratio	0.78			0.33		
1	Percent of Base FFS	71.34			76.17		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.58			2.58		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.71	D	3.52	D
1	Transit Segment LOS Score / LOS	6.82	F	6.66	F

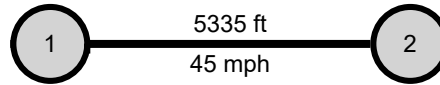
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		20.32		19.03	
Facility Travel Speed, mph		32.72		34.94	
Facility Base Free Flow Speed, mph		45.87		45.87	
Facility Percent of Base FFS		71.34		76.17	
Facility Level of Service		B		B	
Facility Auto Traveler Perception Score		2.58		2.58	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.71	D	3.52	D	
Transit Facility LOS Score / LOS	6.82	F	6.66	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave_AM.xus		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5335	5335	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.17			45.17		
1	Running Time, s	84.24			84.41		
1	Running Speed, mph	43.18			43.09		
1	Through Delay, s/veh	8.95			27.74		
1	Travel Time, s	93.19			112.15		
1	Travel Speed, mph	39.04			32.43		
1	Stop Rate, stops/veh	0.43			0.75		
1	Spatial Stop Rate, stops/mi	0.43			0.74		
1	Through vol/cap Ratio	0.73			0.95		
1	Percent of Base FFS	86.42			71.80		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.20			2.25		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.96	D	4.33	E
1	Transit Segment LOS Score / LOS	6.71	F	6.72	F

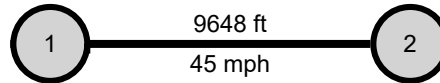
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	93.19		112.15
Facility Travel Speed, mph	39.04		32.43		
Facility Base Free Flow Speed, mph	45.17		45.17		
Facility Percent of Base FFS	86.42		71.80		
Facility Level of Service	A		B		
Facility Auto Traveler Perception Score	2.20		2.25		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.96	D	4.33	E
Transit Facility LOS Score / LOS	6.71	F	6.72	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9648	9648	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.02			46.02		
1	Running Time, s	150.27			149.03		
1	Running Speed, mph	43.78			44.14		
1	Through Delay, s/veh	5.97			15.91		
1	Travel Time, s	156.24			164.95		
1	Travel Speed, mph	42.10			39.88		
1	Stop Rate, stops/veh	0.41			0.51		
1	Spatial Stop Rate, stops/mi	0.22			0.28		
1	Through vol/cap Ratio	0.59			0.87		
1	Percent of Base FFS	91.50			86.66		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.17			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.95	D	4.05	D
1	Transit Segment LOS Score / LOS	6.76	F	6.73	F

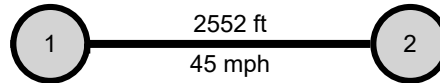
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		156.24		164.95	
Facility Travel Speed, mph		42.10		39.88	
Facility Base Free Flow Speed, mph		46.02		46.02	
Facility Percent of Base FFS		91.50		86.66	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.17		2.39	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.95	D	4.05	D	
Transit Facility LOS Score / LOS	6.76	F	6.73	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_AM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2552	2552	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.90			43.55		
1	Running Time, s	40.51			42.37		
1	Running Speed, mph	42.95			41.07		
1	Through Delay, s/veh	10.08			39.27		
1	Travel Time, s	50.59			81.64		
1	Travel Speed, mph	34.40			21.31		
1	Stop Rate, stops/veh	0.38			0.76		
1	Spatial Stop Rate, stops/mi	0.80			1.58		
1	Through vol/cap Ratio	0.44			0.69		
1	Percent of Base FFS	74.94			48.94		
1	Level of Service	B			D		
1	Auto Traveler Perception Score	2.47			2.60		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.14	D	4.72	E
1	Transit Segment LOS Score / LOS	6.64	F	0.45	A

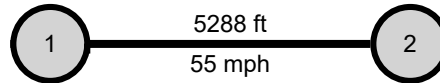
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	50.59	81.64	
Facility Travel Speed, mph	34.40	21.31			
Facility Base Free Flow Speed, mph	45.90	43.55			
Facility Percent of Base FFS	74.94	48.94			
Facility Level of Service	B	D			
Facility Auto Traveler Perception Score	2.47	2.60			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.14	D	4.72	E
Transit Facility LOS Score / LOS	6.64	F	0.45	A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5288	5288	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.04			45.34		
1	Running Time, s	73.03			80.37		
1	Running Speed, mph	49.37			44.86		
1	Through Delay, s/veh	8.48			0.00		
1	Travel Time, s	81.51			80.37		
1	Travel Speed, mph	44.23			44.86		
1	Stop Rate, stops/veh	0.51			0.00		
1	Spatial Stop Rate, stops/mi	0.51			0.00		
1	Through vol/cap Ratio	0.08			0.00		
1	Percent of Base FFS	88.40			98.95		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.72	E	5.79	F
1	Transit Segment LOS Score / LOS	6.53	F	0.24	A

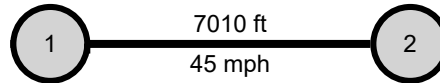
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	81.51	80.37	
Facility Travel Speed, mph	44.23	44.86			
Facility Base Free Flow Speed, mph	50.04	45.34			
Facility Percent of Base FFS	88.40	98.95			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.43	2.34			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.72	E	5.79
Transit Facility LOS Score / LOS	6.53	F	0.24

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	AM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Existing + Approved Project Conditions				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	105.11			104.27		
1	Running Speed, mph	45.47			45.84		
1	Through Delay, s/veh	0.00			16.32		
1	Travel Time, s	105.11			120.59		
1	Travel Speed, mph	45.47			39.64		
1	Stop Rate, stops/veh	0.00			0.78		
1	Spatial Stop Rate, stops/mi	0.00			0.58		
1	Through vol/cap Ratio	0.00			0.22		
1	Percent of Base FFS	98.64			85.98		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.44		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.81	D	4.46	E
1	Transit Segment LOS Score / LOS	6.66	F	6.52	F

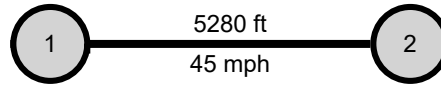
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	105.11	120.59	
Facility Travel Speed, mph	45.47	39.64			
Facility Base Free Flow Speed, mph	46.10	46.10			
Facility Percent of Base FFS	98.64	85.98			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.34	2.44			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.81	D	4.46
Transit Facility LOS Score / LOS	6.66	F	6.52

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			7.66	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	78.68			81.43		
1	Running Speed, mph	45.76			44.21		
1	Through Delay, s/veh	6.21			19.85		
1	Travel Time, s	84.89			101.28		
1	Travel Speed, mph	42.41			35.54		
1	Stop Rate, stops/veh	0.47			0.65		
1	Spatial Stop Rate, stops/mi	0.47			0.65		
1	Through vol/cap Ratio	0.10			0.97		
1	Percent of Base FFS	91.64			76.81		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.42			2.45		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.34	C	3.90	D
1	Transit Segment LOS Score / LOS	6.52	F	6.82	F

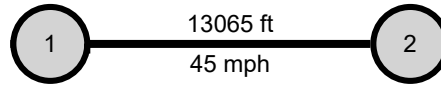
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		84.89		101.28	
Facility Travel Speed, mph		42.41		35.54	
Facility Base Free Flow Speed, mph		46.28		46.28	
Facility Percent of Base FFS		91.64		76.81	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.42		2.45	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.34	C	3.90	D	
Transit Facility LOS Score / LOS	6.52	F	6.82	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR		Analysis Year	2019	System Cycle Length, s	120
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.21			46.21		
1	Running Time, s	193.59			198.23		
1	Running Speed, mph	46.01			44.94		
1	Through Delay, s/veh	13.84			15.04		
1	Travel Time, s	207.44			213.27		
1	Travel Speed, mph	42.94			41.77		
1	Stop Rate, stops/veh	0.48			0.63		
1	Spatial Stop Rate, stops/mi	0.19			0.25		
1	Through vol/cap Ratio	0.12			0.75		
1	Percent of Base FFS	92.93			90.39		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.37			2.38		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.54	E	4.77	E
1	Transit Segment LOS Score / LOS	6.54	F	6.78	F

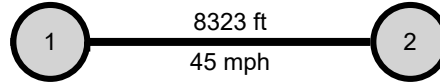
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		207.44		213.27	
Facility Travel Speed, mph		42.94		41.77	
Facility Base Free Flow Speed, mph		46.21		46.21	
Facility Percent of Base FFS		92.93		90.39	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.37		2.38	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.54	E	4.77	E	
Transit Facility LOS Score / LOS	6.54	F	6.78	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	124.17			124.59		
1	Running Speed, mph	45.70			45.55		
1	Through Delay, s/veh	16.34			13.54		
1	Travel Time, s	140.51			138.13		
1	Travel Speed, mph	40.39			41.08		
1	Stop Rate, stops/veh	0.53			0.62		
1	Spatial Stop Rate, stops/mi	0.33			0.39		
1	Through vol/cap Ratio	0.51			0.62		
1	Percent of Base FFS	86.76			88.25		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.40			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.22	D	4.21	D
1	Transit Segment LOS Score / LOS	6.63	F	6.63	F

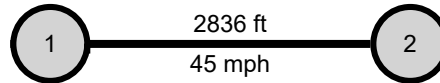
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	140.51	138.13	
Facility Travel Speed, mph	40.39	41.08			
Facility Base Free Flow Speed, mph	46.55	46.55			
Facility Percent of Base FFS	86.76	88.25			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.40	2.41			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.22	D	4.21 D
Transit Facility LOS Score / LOS	6.63	F	6.63 F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1> 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	2836	2836	40	38	1972	1972	50	6	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.24			46.59		
1	Running Time, s	49.33			43.97		
1	Running Speed, mph	39.20			43.98		
1	Through Delay, s/veh	23.16			38.02		
1	Travel Time, s	72.50			81.99		
1	Travel Speed, mph	26.67			23.59		
1	Stop Rate, stops/veh	0.55			0.67		
1	Spatial Stop Rate, stops/mi	1.03			1.25		
1	Through vol/cap Ratio	0.99			0.39		
1	Percent of Base FFS	58.96			50.62		
1	Level of Service	C			C		
1	Auto Traveler Perception Score	2.29			2.33		

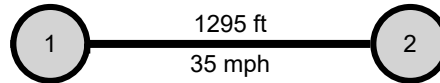
Multimodal Results (Segment)					
1	Pedestrian Segment LOS Score / LOS		F	3.76	D
1	Bicycle Segment LOS Score / LOS	4.95	E	4.74	E
1	Transit Segment LOS Score / LOS	6.98	F	6.46	F

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		72.50		81.99	
Facility Travel Speed, mph		26.67		23.59	
Facility Base Free Flow Speed, mph		45.24		46.59	
Facility Percent of Base FFS		58.96		50.62	
Facility Level of Service		C		C	
Facility Auto Traveler Perception Score		2.29		2.33	

Multimodal Results (Facility)					
Pedestrian Facility LOS Score / LOS				3.76	D
Bicycle Facility LOS Score / LOS	4.95		E	4.74	E
Transit Facility LOS Score / LOS	6.98		F	6.46	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		25.91			26.03	
1	Running Speed, mph		34.07			33.91	
1	Through Delay, s/veh		0.23			28.61	
1	Travel Time, s		26.14			54.64	
1	Travel Speed, mph		33.78			16.16	
1	Stop Rate, stops/veh		0.01			0.85	
1	Spatial Stop Rate, stops/mi		0.04			3.45	
1	Through vol/cap Ratio		0.11			0.72	
1	Percent of Base FFS		88.88			42.39	
1	Level of Service		A			D	
1	Auto Traveler Perception Score		2.15			2.69	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.31	C	3.47	C
1	Bicycle Segment LOS Score / LOS	3.73	D	6.91	F
1	Transit Segment LOS Score / LOS	4.36	E	4.37	E

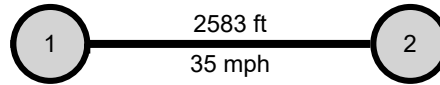
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		26.14		54.64	
Facility Travel Speed, mph		33.78		16.16	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		88.88		42.39	
Facility Level of Service		A		D	
Facility Auto Traveler Perception Score		2.15		2.69	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.31	C	3.47	C
Bicycle Facility LOS Score / LOS	3.73	D	6.91	F
Transit Facility LOS Score / LOS	4.36	E	4.37	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2583	2583	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	40.76			40.62		
1	Running Time, s	45.88			45.92		
1	Running Speed, mph	38.39			38.35		
1	Through Delay, s/veh	0.56			0.49		
1	Travel Time, s	46.44			46.41		
1	Travel Speed, mph	37.93			37.95		
1	Stop Rate, stops/veh	0.01			0.01		
1	Spatial Stop Rate, stops/mi	0.02			0.02		
1	Through vol/cap Ratio	0.29			0.26		
1	Percent of Base FFS	93.06			93.41		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.14			2.14		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.78	D	3.53	D
1	Transit Segment LOS Score / LOS	4.58	E	4.53	E

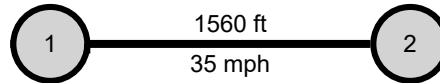
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		46.44		46.41	
Facility Travel Speed, mph		37.93		37.95	
Facility Base Free Flow Speed, mph		40.76		40.62	
Facility Percent of Base FFS		93.06		93.41	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.14		2.14	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.78	D	3.53	D	
Transit Facility LOS Score / LOS	4.58	E	4.53	E	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward Ave	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	27.75			28.14		
1	Running Speed, mph	38.33			37.80		
1	Through Delay, s/veh	1.14			1.42		
1	Travel Time, s	28.89			29.56		
1	Travel Speed, mph	36.82			35.98		
1	Stop Rate, stops/veh	0.41			0.42		
1	Spatial Stop Rate, stops/mi	1.39			1.43		
1	Through vol/cap Ratio	0.00			0.30		
1	Percent of Base FFS	88.13			86.12		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.57			2.58		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.16	D	4.69	E
1	Transit Segment LOS Score / LOS	6.45	F	6.66	F

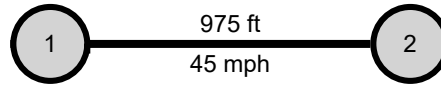
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	28.89	29.56	
Facility Travel Speed, mph	36.82	35.98			
Facility Base Free Flow Speed, mph	41.78	41.78			
Facility Percent of Base FFS	88.13	86.12			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.57	2.58			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.16	D	4.69	E
Transit Facility LOS Score / LOS	6.45	F	6.66	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_P	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	18.36			18.78		
1	Running Speed, mph	36.20			35.40		
1	Through Delay, s/veh	0.96			1.52		
1	Travel Time, s	19.33			20.30		
1	Travel Speed, mph	34.40			32.75		
1	Stop Rate, stops/veh	0.26			0.26		
1	Spatial Stop Rate, stops/mi	1.40			1.40		
1	Through vol/cap Ratio	0.48			0.78		
1	Percent of Base FFS	74.99			71.40		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.57			2.57		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.58	D	3.72	D
1	Transit Segment LOS Score / LOS	6.71	F	6.83	F

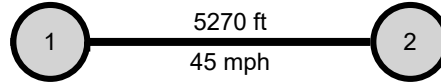
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		19.33		20.30	
Facility Travel Speed, mph		34.40		32.75	
Facility Base Free Flow Speed, mph		45.87		45.87	
Facility Percent of Base FFS		74.99		71.40	
Facility Level of Service		B		B	
Facility Auto Traveler Perception Score		2.57		2.57	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.58	D	3.72	D	
Transit Facility LOS Score / LOS	6.71	F	6.83	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave, Sycamore &		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	83.04			84.45		
1	Running Speed, mph	43.27			42.55		
1	Through Delay, s/veh	13.66			24.48		
1	Travel Time, s	96.70			108.93		
1	Travel Speed, mph	37.16			32.99		
1	Stop Rate, stops/veh	0.65			0.71		
1	Spatial Stop Rate, stops/mi	0.65			0.71		
1	Through vol/cap Ratio	0.69			0.98		
1	Percent of Base FFS	82.30			73.06		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.24			2.25		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.94	D	4.35	E
1	Transit Segment LOS Score / LOS	6.70	F	6.78	F

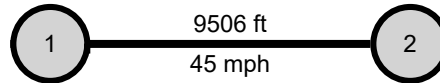
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	96.70		108.93
Facility Travel Speed, mph	37.16		32.99		
Facility Base Free Flow Speed, mph	45.15		45.15		
Facility Percent of Base FFS	82.30		73.06		
Facility Level of Service	B		B		
Facility Auto Traveler Perception Score	2.24		2.25		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.94	D	4.35	E
Transit Facility LOS Score / LOS	6.70	F	6.78	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	147.07			148.98		
1	Running Speed, mph	44.07			43.51		
1	Through Delay, s/veh	10.95			22.60		
1	Travel Time, s	158.02			171.58		
1	Travel Speed, mph	41.02			37.78		
1	Stop Rate, stops/veh	0.40			0.65		
1	Spatial Stop Rate, stops/mi	0.22			0.36		
1	Through vol/cap Ratio	0.57			0.96		
1	Percent of Base FFS	89.16			82.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.40		

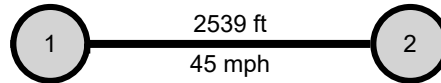
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	3.97	D	D
1	Transit Segment LOS Score / LOS	6.73	F	F

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		158.02		171.58	
Facility Travel Speed, mph		41.02		37.78	
Facility Base Free Flow Speed, mph		46.00		46.01	
Facility Percent of Base FFS		89.16		82.11	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.17		2.40	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.97	D	4.08	D
Transit Facility LOS Score / LOS	6.73	F	6.80	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_PM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0	

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	40.31			43.31		
1	Running Speed, mph	42.95			39.97		
1	Through Delay, s/veh	11.03			47.71		
1	Travel Time, s	51.34			91.02		
1	Travel Speed, mph	33.72			19.02		
1	Stop Rate, stops/veh	0.37			0.74		
1	Spatial Stop Rate, stops/mi	0.77			1.55		
1	Through vol/cap Ratio	0.54			0.89		
1	Percent of Base FFS	73.47			43.68		
1	Level of Service	B			D		
1	Auto Traveler Perception Score	2.47			2.60		

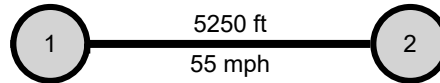
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	4.09	D	E
1	Transit Segment LOS Score / LOS	6.63	F	A

Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		51.34		91.02	
Facility Travel Speed, mph		33.72		19.02	
Facility Base Free Flow Speed, mph		45.89		43.54	
Facility Percent of Base FFS		73.47		43.68	
Facility Level of Service		B		D	
Facility Auto Traveler Perception Score		2.47		2.60	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.09	D	4.79	E
Transit Facility LOS Score / LOS	6.63	F	0.65	A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	72.71			79.62		
1	Running Speed, mph	49.23			44.96		
1	Through Delay, s/veh	8.80			0.00		
1	Travel Time, s	81.51			79.62		
1	Travel Speed, mph	43.91			44.96		
1	Stop Rate, stops/veh	0.53			0.00		
1	Spatial Stop Rate, stops/mi	0.53			0.00		
1	Through vol/cap Ratio	0.15			0.00		
1	Percent of Base FFS	87.78			99.19		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.87	E	5.59	F
1	Transit Segment LOS Score / LOS	6.58	F	0.19	A

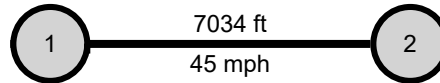
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		81.51		79.62	
Facility Travel Speed, mph		43.91		44.96	
Facility Base Free Flow Speed, mph		50.03		45.33	
Facility Percent of Base FFS		87.78		99.19	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.43		2.34	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.87	E	5.59	F	
Transit Facility LOS Score / LOS	6.58	F	0.19	A	

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	PM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Existing + Approved Project Conditions				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7034	7034	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	105.12			104.59		
1	Running Speed, mph	45.62			45.85		
1	Through Delay, s/veh	0.00			18.57		
1	Travel Time, s	105.12			123.16		
1	Travel Speed, mph	45.62			38.94		
1	Stop Rate, stops/veh	0.00			0.77		
1	Spatial Stop Rate, stops/mi	0.00			0.58		
1	Through vol/cap Ratio	0.00			0.22		
1	Percent of Base FFS	98.96			84.47		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.34			2.44		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.78	D	4.45	E
1	Transit Segment LOS Score / LOS	6.64	F	6.51	F

Facility Output Data

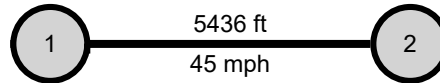
Facility Output Data	Northbound		Southbound	
Facility Travel Time, s	105.12		123.16	
Facility Travel Speed, mph	45.62		38.94	
Facility Base Free Flow Speed, mph	46.10		46.10	
Facility Percent of Base FFS	98.96		84.47	
Facility Level of Service	A		B	
Facility Auto Traveler Perception Score	2.34		2.44	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.78	D	4.45	E
Transit Facility LOS Score / LOS	6.64	F	6.51	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5436	5436	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.29			46.29		
1	Running Time, s	82.71			81.69		
1	Running Speed, mph	44.81			45.37		
1	Through Delay, s/veh	10.09			21.67		
1	Travel Time, s	92.80			103.36		
1	Travel Speed, mph	39.94			35.86		
1	Stop Rate, stops/veh	0.60			0.41		
1	Spatial Stop Rate, stops/mi	0.59			0.40		
1	Through vol/cap Ratio	0.80			0.44		
1	Percent of Base FFS	86.28			77.46		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.44			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.87	D	3.63	D
1	Transit Segment LOS Score / LOS	6.75	F	6.67	F

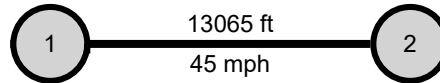
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		92.80		103.36	
Facility Travel Speed, mph		39.94		35.86	
Facility Base Free Flow Speed, mph		46.29		46.29	
Facility Percent of Base FFS		86.28		77.46	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.44		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.87	D	3.63	D	
Transit Facility LOS Score / LOS	6.75	F	6.67	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.21			46.21		
1	Running Time, s	197.90			198.58		
1	Running Speed, mph	45.01			44.86		
1	Through Delay, s/veh	20.02			198.74		
1	Travel Time, s	217.92			397.32		
1	Travel Speed, mph	40.88			22.42		
1	Stop Rate, stops/veh	0.74			1.18		
1	Spatial Stop Rate, stops/mi	0.30			0.48		
1	Through vol/cap Ratio	0.74			0.90		
1	Percent of Base FFS	88.46			48.52		
1	Level of Service	A			D		
1	Auto Traveler Perception Score	2.39			2.42		

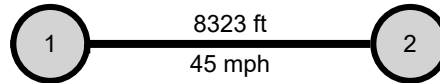
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	5.05	F	E
1	Transit Segment LOS Score / LOS	6.77	F	F

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		217.92		397.32	
Facility Travel Speed, mph		40.88		22.42	
Facility Base Free Flow Speed, mph		46.21		46.21	
Facility Percent of Base FFS		88.46		48.52	
Facility Level of Service		A		D	
Facility Auto Traveler Perception Score		2.39		2.42	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	5.05	F	4.59	E
Transit Facility LOS Score / LOS	6.77	F	6.79	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	124.72			125.69		
1	Running Speed, mph	45.50			45.15		
1	Through Delay, s/veh	17.75			16.00		
1	Travel Time, s	142.47			141.69		
1	Travel Speed, mph	39.83			40.05		
1	Stop Rate, stops/veh	0.70			0.62		
1	Spatial Stop Rate, stops/mi	0.45			0.39		
1	Through vol/cap Ratio	0.68			0.86		
1	Percent of Base FFS	85.57			86.04		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.41			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.24	D	4.30	E
1	Transit Segment LOS Score / LOS	6.65	F	6.69	F

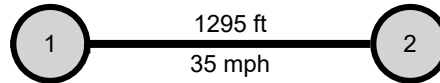
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		142.47		141.69	
Facility Travel Speed, mph		39.83		40.05	
Facility Base Free Flow Speed, mph		46.55		46.55	
Facility Percent of Base FFS		85.57		86.04	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.41		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.24	D	4.30	E	
Transit Facility LOS Score / LOS	6.65	F	6.69	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Existing + Approved Project Conditions (Mitigated)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		25.88			26.43	
1	Running Speed, mph		34.12			33.40	
1	Through Delay, s/veh		0.21			35.90	
1	Travel Time, s		26.09			62.33	
1	Travel Speed, mph		33.85			14.17	
1	Stop Rate, stops/veh		0.01			0.89	
1	Spatial Stop Rate, stops/mi		0.03			3.64	
1	Through vol/cap Ratio		0.10			0.86	
1	Percent of Base FFS		89.07			37.17	
1	Level of Service		A			E	
1	Auto Traveler Perception Score		2.15			2.72	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.29	C	3.67	D
1	Bicycle Segment LOS Score / LOS	3.72	D	6.90	F
1	Transit Segment LOS Score / LOS	4.35	E	4.46	E

Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		26.09		62.33	
Facility Travel Speed, mph		33.85		14.17	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		89.07		37.17	
Facility Level of Service		A		E	
Facility Auto Traveler Perception Score		2.15		2.72	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.29	C	3.67	D
Bicycle Facility LOS Score / LOS	3.72	D	6.90	F
Transit Facility LOS Score / LOS	4.35	E	4.46	E

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: EPAP
Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	4069	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1082	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	2294	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2294	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	53.7	mi/h
Number of lanes, N	2	
Density, D	42.7	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: EPAP
Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	3564	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	948	v
Trucks and buses	22	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, fp	1.00	
Flow rate, vp	2104	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2104	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	55.4	mi/h
Number of lanes, N	2	
Density, D	38.0	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: EPAP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	4053	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1078	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2382	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2382	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	51.3	mi/h
Number of lanes, N	2	
Density, D	46.4	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: EPAP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	3412	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	907	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2005	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2005	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	59.8	mi/h
Number of lanes, N	2	
Density, D	33.5	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: EPAP
Description: Patterson NW Annex Segment Analysis

-----Flow Inputs and Adjustments-----

Volume, V	3770	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1003	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, fp	1.00	
Flow rate, vp	2176	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2176	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	56.5	mi/h
Number of lanes, N	2	
Density, D	38.5	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: EPAP
Description: Patterson NW Annex Segment Analysis

-----Flow Inputs and Adjustments-----

Volume, V	4061	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1080	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	2290	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	55.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	55.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2290	pc/h/ln
Free-flow speed, FFS	55.0	mi/h
Average passenger-car speed, S	49.1	mi/h
Number of lanes, N	2	
Density, D	46.7	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: EPAP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	2963	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	788	v
Trucks and buses	16	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.926	
Driver population factor, fp	1.00	
Flow rate, vp	1702	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	58.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	58.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	1702	pc/h/ln
Free-flow speed, FFS	58.0	mi/h
Average passenger-car speed, S	59.8	mi/h
Number of lanes, N	2	
Density, D	28.5	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
 Agency or Company:
 Date Performed: 8/23/2019
 Analysis Time Period: PM Peak Hour
 Freeway/Direction: I-5 Southbound
 From/To: Between Sperry Ave and Fink Rd
 Jurisdiction: City of Patterson
 Analysis Year: EPAP
 Description: Patterson NW Annex

----- Flow Inputs and Adjustments -----

Volume, V	3337	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	888	v
Trucks and buses	19	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.913	
Driver population factor, fp	1.00	
Flow rate, vp	1944	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	1944	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	57.9	mi/h
Number of lanes, N	2	
Density, D	33.6	pc/mi/ln
Level of service, LOS	D	

TRAFFIC IMPACT STUDY FOR PROPOSED ZACHARIAS AND BALDWIN MASTER PLAN IN PATTERSON,
CALIFORNIA

Appendix D Intersection Analysis: Existing plus approved projects plus proposed project Conditions LOS Calculation Sheets
February 7, 2020

Appendix D **INTERSECTION ANALYSIS: EXISTING PLUS APPROVED
PROJECTS PLUS PROPOSED PROJECT CONDITIONS LOS
CALCULATION SHEETS**

Intersection												
Int Delay, s/veh	1685											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	750	11	145	65	0	0	0	0	646	4	63
Future Vol, veh/h	0	750	11	145	65	0	0	0	0	646	4	63
Conflicting Peds, #/hr	0	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	76	76	76	25	25	25	88	88	88
Heavy Vehicles, %	0	1	50	22	17	0	0	0	0	23	25	17
Mvmt Flow	0	1103	16	191	86	0	0	0	0	734	5	72

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	1119	0	0		1579	1587	86
Stage 1	-	-	-	-	-	-		468	468	-
Stage 2	-	-	-	-	-	-		1111	1119	-
Critical Hdwy	-	-	-	4.32	-	-		6.63	6.75	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-		5.63	5.75	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.63	5.75	-
Follow-up Hdwy	-	-	-	2.398	-	-		3.707	4.225	3.453
Pot Cap-1 Maneuver	0	-	-	556	-	0		~ 107	96	933
Stage 1	0	-	-	-	-	0		~ 589	524	-
Stage 2	0	-	-	-	-	0		~ 287	256	-
Platoon blocked, %		-	-	-	-	-				
Mov Cap-1 Maneuver	-	-	-	556	-	-		~ 68	0	933
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 68	0	-
Stage 1	-	-	-	-	-	-		~ 589	0	-
Stage 2	-	-	-	-	-	-		~ 183	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	10.2	\$ 4583.6
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	556	-	74
HCM Lane V/C Ratio	-	-	0.343	-	10.949
HCM Control Delay (s)	-	-	14.8	\$ 4583.6	
HCM Lane LOS	-	-	B	A	F
HCM 95th %tile Q(veh)	-	-	1.5	-	95.2

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	590.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	255	1141	0	0	189	833	21	10	787	0	0	0
Future Vol, veh/h	255	1141	0	0	189	833	21	10	787	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	90	90	90	82	82	82	25	25	25
Heavy Vehicles, %	0	16	0	0	22	10	0	0	16	0	0	0
Mvmt Flow	304	1358	0	0	210	926	26	12	960	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	1136	0	0
Stage 1	-	-	1966
Stage 2	-	-	673
Critical Hdwy	4.1	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	622	0	26
Stage 1	-	0	121
Stage 2	-	0	511
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	622	-	0
Mov Cap-2 Maneuver	-	-	0
Stage 1	-	-	0
Stage 2	-	-	511

Approach	EB	WB	NB
HCM Control Delay, s	3	0	\$ 2242
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	170	622	-	-	-
HCM Lane V/C Ratio	5.868	0.488	-	-	-
HCM Control Delay (s)	\$ 2242	16.2	0	-	-
HCM Lane LOS	F	C	A	-	-
HCM 95th %tile Q(veh)	106.9	2.7	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis

3: Sperry Ave & Rogers Rd

Existing Plus Approved Plus Project
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	546	1168	214	76	546	164	188	3	60	231	0	288
Future Volume (vph)	546	1168	214	76	546	164	188	3	60	231	0	288
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	2959	1583	1770	1652	1547	1770	1863	1583		1736	2632
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1656	2959	1583	1770	1652	1547	1770	1863	1583		1736	2632
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.92	0.80
Adj. Flow (vph)	628	1343	233	83	593	178	204	3	65	289	0	360
RTOR Reduction (vph)	0	0	89	0	0	97	0	0	56	0	0	120
Lane Group Flow (vph)	628	1343	144	83	593	81	204	3	9	0	289	240
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	9%	22%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	38.5	75.6	75.6	7.9	43.0	43.0	19.9	19.9	19.9		18.0	56.5
Effective Green, g (s)	38.5	75.6	75.6	7.9	43.0	43.0	19.9	19.9	19.9		18.0	56.5
Actuated g/C Ratio	0.27	0.53	0.53	0.06	0.30	0.30	0.14	0.14	0.14		0.13	0.40
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	446	1565	837	97	497	465	246	259	220		218	1040
v/s Ratio Prot	c0.38	0.45		0.05	c0.36		c0.12	0.00			c0.17	0.06
v/s Ratio Perm			0.09			0.05			0.01			0.03
v/c Ratio	1.41	0.86	0.17	0.86	1.19	0.17	0.83	0.01	0.04		1.33	0.23
Uniform Delay, d1	52.2	29.0	17.4	66.9	50.0	36.8	59.8	53.0	53.2		62.5	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	196.6	5.4	0.2	48.1	105.4	0.2	20.1	0.0	0.1		174.7	0.1
Delay (s)	248.8	34.4	17.6	115.0	155.3	37.0	79.9	53.0	53.3		237.2	28.9
Level of Service	F	C	B	F	F	D	E	D	D		F	C
Approach Delay (s)		93.7			126.7			73.3			121.6	
Approach LOS		F			F			E			F	
Intersection Summary												
HCM 2000 Control Delay			104.0									F
HCM 2000 Volume to Capacity ratio			1.22									
Actuated Cycle Length (s)			142.9						23.5			
Intersection Capacity Utilization			94.3%									F
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↘		↖↗	↖↗	↖				↖		↖
Traffic Volume (veh/h)	132	323	0	1	553	22	0	0	0	14	0	76
Future Volume (veh/h)	132	323	0	1	553	22	0	0	0	14	0	76
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	150	367	0	1	700	28				16	0	84
Adj No. of Lanes	2	1	0	2	2	1				1	0	1
Peak Hour Factor	0.88	0.88	0.88	0.79	0.79	0.79				0.90	0.90	0.90
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	247	938	0	8	1478	530				179	0	124
Arrive On Green	0.11	0.54	0.00	0.00	0.43	0.43				0.13	0.00	0.13
Sat Flow, veh/h	2167	1743	0	3510	3471	1245				1403	0	973
Grp Volume(v), veh/h	150	367	0	1	700	28				16	0	84
Grp Sat Flow(s),veh/h/ln1083	1743	0	1755	1736	1245					1403	0	973
Q Serve(g_s), s	2.9	5.4	0.0	0.0	6.4	0.6				0.4	0.0	3.6
Cycle Q Clear(g_c), s	2.9	5.4	0.0	0.0	6.4	0.6				0.4	0.0	3.6
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	247	938	0	8	1478	530				179	0	124
V/C Ratio(X)	0.61	0.39	0.00	0.13	0.47	0.05				0.09	0.00	0.68
Avail Cap(c_a), veh/h	1518	1970	0	2459	3922	1407				1046	0	726
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	18.7	6.0	0.0	22.0	9.1	7.5				17.0	0.0	18.4
Incr Delay (d2), s/veh	2.4	0.6	0.0	6.9	0.5	0.1				0.2	0.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln1.0	2.7	0.0	0.0	3.1	0.6					0.2	0.0	2.1
LnGrp Delay(d),s/veh	21.0	6.5	0.0	29.0	9.6	7.6				17.2	0.0	24.6
LnGrp LOS	C	A		C	A	A				B		C
Approach Vol, veh/h		517			729						100	
Approach Delay, s/veh		10.8			9.6						23.5	
Approach LOS		B			A						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	4.6	29.5		10.2	9.6	24.5						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	31.0	50.0		33.0	31.0	50.0						
Max Q Clear Time (g_c+I), s	12.0	7.4		5.6	4.9	8.4						
Green Ext Time (p_c), s	0.0	4.6		0.3	0.5	10.4						
Intersection Summary												
HCM 2010 Ctrl Delay				11.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	63	297	33	12	393	104	274	403	91	193	140	333
Future Volume (veh/h)	63	297	33	12	393	104	274	403	91	193	140	333
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1834	1900	1900	1792	1863	1900	1810	1900	1827	1874	1900
Adj Flow Rate, veh/h	73	345	38	16	510	135	347	510	115	247	179	427
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.86	0.86	0.86	0.77	0.77	0.77	0.79	0.79	0.79	0.78	0.78	0.78
Percent Heavy Veh, %	6	4	4	0	6	2	0	5	5	4	0	0
Cap, veh/h	154	579	64	38	594	525	326	531	120	310	139	332
Arrive On Green	0.05	0.36	0.36	0.02	0.33	0.33	0.18	0.37	0.37	0.09	0.28	0.28
Sat Flow, veh/h	3312	1620	178	1810	1792	1583	1810	1430	322	3375	492	1174
Grp Volume(v), veh/h	73	0	383	16	510	135	347	0	625	247	0	606
Grp Sat Flow(s),veh/h/ln	1656	0	1798	1810	1792	1583	1810	0	1753	1688	0	1666
Q Serve(g_s), s	2.5	0.0	20.3	1.0	31.0	7.3	21.0	0.0	40.6	8.4	0.0	33.0
Cycle Q Clear(g_c), s	2.5	0.0	20.3	1.0	31.0	7.3	21.0	0.0	40.6	8.4	0.0	33.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.18	1.00		0.70
Lane Grp Cap(c), veh/h	154	0	642	38	594	525	326	0	651	310	0	472
V/C Ratio(X)	0.47	0.00	0.60	0.42	0.86	0.26	1.06	0.00	0.96	0.80	0.00	1.28
Avail Cap(c_a), veh/h	739	0	740	326	738	652	326	0	651	608	0	472
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.2	0.0	30.6	56.4	36.4	28.5	47.8	0.0	35.8	51.9	0.0	41.8
Incr Delay (d2), s/veh	0.8	0.0	2.0	15.4	10.5	0.5	67.9	0.0	25.6	1.8	0.0	143.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	10.5	0.7	17.0	3.3	16.6	0.0	24.2	4.0	0.0	33.9
LnGrp Delay(d),s/veh	55.0	0.0	32.6	71.8	46.9	29.0	115.7	0.0	61.4	53.7	0.0	185.2
LnGrp LOS	E		C	E	D	C	F		E	D		F
Approach Vol, veh/h		456			661			972			853	
Approach Delay, s/veh		36.2			43.9			80.8			147.1	
Approach LOS		D			D			F			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	6.6	47.1	25.2	37.6	9.6	44.1	14.9	47.9				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	48.0	* 21	33.0	* 26	48.0	* 21	33.0					
Max Q Clear Time (g_c+1), s	22.3	23.0	35.0	4.5	33.0	10.4	42.6					
Green Ext Time (p_c), s	0.0	4.3	0.0	0.0	0.1	5.6	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			84.8									
HCM 2010 LOS			F									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	68	575	27	41	547	57	58	134	81	129	130	169
Future Volume (veh/h)	68	575	27	41	547	57	58	134	81	129	130	169
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	83	701	33	53	701	73	102	235	142	219	220	286
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.82	0.82	0.82	0.78	0.78	0.78	0.57	0.57	0.57	0.59	0.59	0.59
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	121	1106	52	95	985	102	175	387	234	278	266	345
Arrive On Green	0.07	0.33	0.33	0.05	0.31	0.31	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1810	3400	160	1757	3148	328	889	1093	660	1009	749	974
Grp Volume(v), veh/h	83	361	373	53	383	391	102	0	377	219	0	506
Grp Sat Flow(s),veh/h/ln	1810	1750	1809	1757	1722	1754	889	0	1753	1009	0	1722
Q Serve(g_s), s	3.3	12.8	12.9	2.2	14.4	14.4	6.3	0.0	13.0	13.0	0.0	19.7
Cycle Q Clear(g_c), s	3.3	12.8	12.9	2.2	14.4	14.4	26.0	0.0	13.0	26.0	0.0	19.7
Prop In Lane	1.00		0.09	1.00		0.19	1.00		0.38	1.00		0.57
Lane Grp Cap(c), veh/h	121	570	589	95	539	548	175	0	622	278	0	611
V/C Ratio(X)	0.69	0.63	0.63	0.56	0.71	0.71	0.58	0.00	0.61	0.79	0.00	0.83
Avail Cap(c_a), veh/h	790	859	888	767	846	861	175	0	622	278	0	611
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	21.0	21.0	33.8	22.3	22.3	34.3	0.0	19.5	31.3	0.0	21.6
Incr Delay (d2), s/veh	6.8	1.7	1.6	5.1	2.5	2.5	4.9	0.0	1.7	14.1	0.0	9.3
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	1.9	6.5	6.7	1.2	7.2	7.3	2.3	0.0	6.6	5.5	0.0	10.9
LnGrp Delay(d),s/veh	40.2	22.7	22.6	38.9	24.8	24.7	39.2	0.0	21.2	45.4	0.0	30.9
LnGrp LOS	D	C	C	D	C	C	D		C	D		C
Approach Vol, veh/h		817			827			479			725	
Approach Delay, s/veh		24.4			25.7			25.0			35.3	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.5	30.4		32.5	11.4	29.4		32.5				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	32.0	36.0		26.0	32.0	36.0		26.0				
Max Q Clear Time (g_c+I), s	14.2	14.9		28.0	5.3	16.4		28.0				
Green Ext Time (p_c), s	0.1	6.1		0.0	0.2	6.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	27.7											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	119	530	18	142	528	133	32	158	164	153	126	41
Future Volume (veh/h)	119	530	18	142	528	133	32	158	164	153	126	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1814	1900	1792	1827	1845	1900	1827	1900	1900	1863	1776
Adj Flow Rate, veh/h	155	688	23	163	607	153	56	277	288	232	191	62
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.77	0.77	0.77	0.87	0.87	0.87	0.57	0.57	0.57	0.66	0.66	0.66
Percent Heavy Veh, %	0	4	4	6	4	3	0	4	4	0	2	7
Cap, veh/h	186	815	27	192	835	372	80	248	257	264	751	599
Arrive On Green	0.10	0.24	0.24	0.11	0.24	0.24	0.04	0.30	0.30	0.15	0.40	0.40
Sat Flow, veh/h	1810	3401	114	1707	3471	1546	1810	821	854	1810	1863	1485
Grp Volume(v), veh/h	155	348	363	163	607	153	56	0	565	232	191	62
Grp Sat Flow(s),veh/h/ln	1810	1723	1791	1707	1736	1546	1810	0	1675	1810	1863	1485
Q Serve(g_s), s	9.5	21.7	21.8	10.6	18.2	9.4	3.4	0.0	34.0	14.2	7.7	2.9
Cycle Q Clear(g_c), s	9.5	21.7	21.8	10.6	18.2	9.4	3.4	0.0	34.0	14.2	7.7	2.9
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	186	413	429	192	835	372	80	0	505	264	751	599
V/C Ratio(X)	0.83	0.84	0.84	0.85	0.73	0.41	0.70	0.00	1.12	0.88	0.25	0.10
Avail Cap(c_a), veh/h	321	458	477	303	985	439	337	0	505	337	751	599
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	40.9	40.9	49.1	39.4	36.1	53.2	0.0	39.4	47.2	22.4	21.0
Incr Delay (d2), s/veh	9.2	14.5	14.1	12.2	3.3	1.6	10.7	0.0	76.7	18.9	0.4	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	5.2	12.0	12.5	5.6	9.1	4.2	2.0	0.0	26.3	8.5	4.0	1.2
LnGrp Delay(d),s/veh	58.8	55.4	55.0	61.2	42.7	37.7	63.9	0.0	116.1	66.1	22.7	21.1
LnGrp LOS	E	E	D	E	D	D	E		F	E	C	C
Approach Vol, veh/h		866			923			621			485	
Approach Delay, s/veh		55.8			45.1			111.4			43.3	
Approach LOS		E			D			F			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	18.7	33.0	9.6	51.5	18.6	33.1	21.0	40.0				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	20.0	30.0	21.0	26.0	20.0	32.0	21.0	34.0				
Max Q Clear Time (g_c+1/2), s	12.6	23.8	5.4	9.7	11.5	20.2	16.2	36.0				
Green Ext Time (p_c), s	0.2	3.3	0.1	2.0	0.2	5.6	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			62.2									
HCM 2010 LOS			E									

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave



















Existing Plus Approved Plus Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	324	34	12	381	28	56	84	16	6	71	207
Future Volume (veh/h)	238	324	34	12	381	28	56	84	16	6	71	207
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	283	386	40	14	443	33	76	114	22	9	106	309
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.74	0.74	0.74	0.67	0.67	0.67
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	459	1685	174	572	938	859	187	256	42	63	136	376
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.53	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	914	3160	326	975	1759	1610	345	817	135	12	434	1198
Grp Volume(v), veh/h	283	210	216	14	443	33	212	0	0	424	0	0
Grp Sat Flow(s),veh/h/ln	914	1727	1759	975	1759	1610	1296	0	0	1643	0	0
Q Serve(g_s), s	17.4	4.0	4.1	0.5	9.8	0.6	0.0	0.0	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	27.1	4.0	4.1	4.5	9.8	0.6	7.3	0.0	0.0	14.8	0.0	0.0
Prop In Lane	1.00		0.19	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	459	921	938	572	938	859	486	0	0	575	0	0
V/C Ratio(X)	0.62	0.23	0.23	0.02	0.47	0.04	0.44	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	517	1029	1048	633	1048	960	788	0	0	930	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.5	7.7	7.7	8.9	9.0	6.9	16.7	0.0	0.0	19.7	0.0	0.0
Incr Delay (d2), s/veh	3.2	0.3	0.3	0.0	0.8	0.0	0.6	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	1.9	2.0	0.1	4.9	0.3	3.0	0.0	0.0	7.0	0.0	0.0
LnGrp Delay(d),s/veh	20.7	8.0	8.0	9.0	9.8	6.9	17.3	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	C	A	A	A	A	A	B			C		
Approach Vol, veh/h		709			490			212			424	
Approach Delay, s/veh		13.0			9.6			17.3			21.5	
Approach LOS		B			A			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		37.7		24.4		37.7		24.4				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		37.0		33.0		37.0		33.0				
Max Q Clear Time (g_c+I1), s		29.1		9.3		11.8		16.8				
Green Ext Time (p_c), s		4.0		1.5		5.8		2.7				
Intersection Summary												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								






















HCM Unsignalized Intersection Capacity Analysis
9: SR-33 & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	164	62	9	32	12	185	576	76	32	296	266
Future Volume (Veh/h)	140	164	62	9	32	12	185	576	76	32	296	266
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.67	0.67	0.67	0.76	0.76	0.76	0.81	0.81	0.81
Hourly flow rate (vph)	161	189	71	13	48	18	243	758	100	40	365	328
Pedestrians												1
Lane Width (ft)												12.0
Walking Speed (ft/s)												3.5
Percent Blockage												0
Right turn flare (veh)						1						
Median type								None				None
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1764	1789	365	1904	1739	809	365			858		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1764	1789	365	1904	1739	809	365			858		
tC, single (s)	7.2	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	0	0	90	0	24	95	79			95		
cM capacity (veh/h)	19	60	685	0	63	371	1183			791		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total	421	79	1101	405	328							
Volume Left	161	13	243	40	0							
Volume Right	71	18	100	0	328							
cSH	36	9	1183	791	1700							
Volume to Capacity	11.79	8.59	0.21	0.05	0.19							
Queue Length 95th (ft)	Err	Err	19	4	0							
Control Delay (s)	Err	Err	4.8	1.5	0.0							
Lane LOS	F	F	A	A								
Approach Delay (s)	Err	Err	4.8	0.8								
Approach LOS	F	F										
Intersection Summary												
Average Delay			2144.6									
Intersection Capacity Utilization			99.3%		ICU Level of Service					F		
Analysis Period (min)			15									

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

Existing Plus Approved Plus Project
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	204	81	462	411	62	197	497	359	72	552	94
Future Volume (veh/h)	35	204	81	462	411	62	197	497	359	72	552	94
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	42	243	96	600	534	81	246	621	449	100	767	131
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.77	0.77	0.77	0.80	0.80	0.80	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	344	247	97	357	318	48	231	361	261	118	442	76
Arrive On Green	0.19	0.19	0.19	0.20	0.20	0.20	0.15	0.40	0.40	0.08	0.33	0.33
Sat Flow, veh/h	1774	1272	502	1774	1581	240	1587	901	651	1521	1329	227
Grp Volume(v), veh/h	42	0	339	600	0	615	246	0	1070	100	0	898
Grp Sat Flow(s),veh/h/ln	1774	0	1774	1774	0	1820	1587	0	1552	1521	0	1557
Q Serve(g_s), s	2.8	0.0	27.5	29.0	0.0	29.0	21.0	0.0	57.8	9.4	0.0	48.0
Cycle Q Clear(g_c), s	2.8	0.0	27.5	29.0	0.0	29.0	21.0	0.0	57.8	9.4	0.0	48.0
Prop In Lane	1.00		0.28	1.00		0.13	1.00		0.42	1.00		0.15
Lane Grp Cap(c), veh/h	344	0	344	357	0	366	231	0	622	118	0	518
V/C Ratio(X)	0.12	0.00	0.98	1.68	0.00	1.68	1.06	0.00	1.72	0.85	0.00	1.73
Avail Cap(c_a), veh/h	344	0	344	357	0	366	231	0	622	221	0	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	57.9	57.7	0.0	57.7	61.7	0.0	43.2	65.7	0.0	48.2
Incr Delay (d2), s/veh	0.1	0.0	44.2	319.3	0.0	318.1	77.4	0.0	331.3	6.3	0.0	338.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	17.7	45.8	0.0	46.9	14.1	0.0	81.9	4.1	0.0	69.2
LnGrp Delay(d),s/veh	48.1	0.0	102.1	376.9	0.0	375.8	139.1	0.0	374.5	72.0	0.0	386.6
LnGrp LOS	D		F	F		F	F		F	E		F
Approach Vol, veh/h		381			1215			1316			998	
Approach Delay, s/veh		96.1			376.4			330.5			355.1	
Approach LOS		F			F			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.2	15.2	62.7		34.2	25.0	52.9				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 28	21.0	48.0		29.0	21.0	48.0				
Max Q Clear Time (g_c+I1), s		29.5	11.4	59.8		31.0	23.0	50.0				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			328.2									
HCM 2010 LOS			F									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Plus Approved Plus Project
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	302	33	171	416	61	89	832	75	300	560	127
Future Volume (veh/h)	136	302	33	171	416	61	89	832	75	300	560	127
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		1.00	1.00		0.98
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	1782	1900	1845	1743	1900	1827	1833	1900	1743	1871	1900
Adj Flow Rate, veh/h	181	403	44	225	547	80	105	979	88	390	727	165
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.85	0.85	0.85	0.77	0.77	0.77
Percent Heavy Veh, %	0	7	7	3	9	0	4	1	1	9	1	1
Cap, veh/h	177	449	49	265	560	505	295	950	85	379	1254	285
Arrive On Green	0.07	0.28	0.28	0.10	0.32	0.32	0.05	0.29	0.29	0.20	0.44	0.44
Sat Flow, veh/h	1810	1577	172	1757	1743	1572	1740	3233	291	1660	2866	650
Grp Volume(v), veh/h	181	0	447	225	547	80	105	527	540	390	451	441
Grp Sat Flow(s),veh/h/ln	1810	0	1749	1757	1743	1572	1740	1742	1781	1660	1777	1739
Q Serve(g_s), s	9.5	0.0	35.6	12.8	45.0	5.3	6.1	42.6	42.6	28.8	27.7	27.7
Cycle Q Clear(g_c), s	9.5	0.0	35.6	12.8	45.0	5.3	6.1	42.6	42.6	28.8	27.7	27.7
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.16	1.00		0.37
Lane Grp Cap(c), veh/h	177	0	498	265	560	505	295	512	523	379	778	761
V/C Ratio(X)	1.02	0.00	0.90	0.85	0.98	0.16	0.36	1.03	1.03	1.03	0.58	0.58
Avail Cap(c_a), veh/h	177	0	498	310	560	505	308	512	523	379	778	761
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	0.0	49.8	35.9	48.7	35.2	32.9	51.2	51.2	46.8	30.7	30.7
Incr Delay (d2), s/veh	73.4	0.0	18.3	15.2	31.8	0.1	0.3	47.9	47.5	53.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	19.7	7.2	26.5	2.3	2.9	27.3	27.8	20.8	13.7	13.5
LnGrp Delay(d),s/veh	115.2	0.0	68.1	51.1	80.5	35.2	33.2	99.1	98.7	100.4	31.4	31.5
LnGrp LOS	F		E	D	F	D	C	F	F	F	C	C
Approach Vol, veh/h		628			852			1172			1282	
Approach Delay, s/veh		81.7			68.5			93.0			52.4	
Approach LOS		F			E			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	51.2	32.8	47.5	18.8	45.9	12.0	68.3				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	9.5	46.6	28.8	42.6	18.5	37.6	9.0	62.4				
Max Q Clear Time (g_c+I1), s	9.5	47.0	30.8	44.6	14.8	37.6	8.1	29.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			72.7									
HCM 2010 LOS			E									

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕			↕			↖	↗
Traffic Vol, veh/h	0	526	256	11	100	148	113	793	0	285	552	0
Future Vol, veh/h	0	526	256	11	100	148	113	793	0	285	552	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	71	71	71	77	77	77	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	14	14	14	19	19	19
Mvmt Flow	0	822	400	15	141	208	147	1030	0	407	789	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	3102	2927	789	3538	2927	1030	789	0	0	1030	0	0
Stage 1	1603	1603	-	1324	1324	-	-	-	-	-	-	-
Stage 2	1499	1324	-	2214	1603	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.24	-	-	4.29	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.326	-	-	2.371	-	-
Pot Cap-1 Maneuver	7	~ 15	~ 391	~ 3	~ 15	283	780	-	-	613	-	-
Stage 1	133	~ 165	-	192	225	-	-	-	-	-	-	-
Stage 2	152	~ 225	-	58	165	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	0	~ 391	-	0	283	780	-	-	613	-	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-
Stage 1	74	0	-	108	~ 126	-	-	-	-	-	-	-
Stage 2	-	~ 126	-	-	0	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					1.3		7.4	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	780	-	-	-	391	-	613	-	-
HCM Lane V/C Ratio	0.188	-	-	-	1.023	-	0.664	-	-
HCM Control Delay (s)	10.7	0	-	-	84.7	-	21.7	0	-
HCM Lane LOS	B	A	-	-	F	-	C	A	-
HCM 95th %tile Q(veh)	0.7	-	-	-	12.8	-	5	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	812.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	14	159	83	52	272	32	579	39	193	2	1	0
Future Vol, veh/h	14	159	83	52	272	32	579	39	193	2	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	69	69	69	58	58	58	75	75	75
Heavy Vehicles, %	0	0	42	25	10	0	53	0	40	0	100	0
Mvmt Flow	20	224	117	75	394	46	998	67	333	3	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	440	0	0	341	0	0	891	913	284	1091	948	417
Stage 1	-	-	-	-	-	-	323	323	-	567	567	-
Stage 2	-	-	-	-	-	-	568	590	-	524	381	-
Critical Hdwy	4.1	-	-	4.35	-	-	7.63	6.5	6.6	7.1	7.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.63	5.5	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.63	5.5	-	6.1	6.5	-
Follow-up Hdwy	2.2	-	-	2.425	-	-	3.977	4	3.66	3.5	4.9	3.3
Pot Cap-1 Maneuver	1131	-	-	1100	-	-	~215	276	673	194	181	640
Stage 1	-	-	-	-	-	-	~594	654	-	512	379	-
Stage 2	-	-	-	-	-	-	~428	498	-	540	473	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1131	-	-	1100	-	-	~200	253	672	73	166	640
Mov Cap-2 Maneuver	-	-	-	-	-	-	~200	253	-	73	166	-
Stage 1	-	-	-	-	-	-	~583	642	-	503	353	-
Stage 2	-	-	-	-	-	-	~397	464	-	240	464	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.2	\$ 1323.3	46.9
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	200	526	1131	-	-	1100	-	-	90
HCM Lane V/C Ratio	4.991	0.76	0.017	-	-	0.069	-	-	0.044
HCM Control Delay (s)	\$ 1841.4	30.4	8.2	-	-	8.5	-	-	46.9
HCM Lane LOS	F	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	103.4	6.7	0.1	-	-	0.2	-	-	0.1

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕		↕		↕	↕	↕	↕	
Traffic Vol, veh/h	97	52	0	50	627	27	0	1024	7	104	481	0
Future Vol, veh/h	97	52	0	50	627	27	0	1024	7	104	481	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	63	63	63	82	82	82	53	53	53
Heavy Vehicles, %	2	2	2	44	0	14	0	2	25	9	7	0
Mvmt Flow	388	208	0	79	995	43	0	1249	9	196	908	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	3073	2558	908	2653	2549	1249	908	0	0	1258	0	0
Stage 1	1300	1300	-	1249	1249	-	-	-	-	-	-	-
Stage 2	1773	1258	-	1404	1300	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.54	6.5	6.34	4.1	-	-	4.19	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.54	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.54	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.896	4	3.426	2.2	-	-	2.281	-	-
Pot Cap-1 Maneuver	~ 7	~ 26	334	~ 11	~ 27	199	758	-	-	530	-	-
Stage 1	~ 198	231	-	174	~ 247	-	-	-	-	-	-	-
Stage 2	~ 106	242	-	140	~ 233	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 16	334	-	~ 17	199	758	-	-	530	-	-
Mov Cap-2 Maneuver	-	~ 16	-	-	~ 17	-	-	-	-	-	-	-
Stage 1	~ 198	~ 146	-	174	~ 247	-	-	-	-	-	-	-
Stage 2	-	242	-	-	~ 147	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					0		2.8	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	758	-	-	-	-	-	199	530	-
HCM Lane V/C Ratio	-	-	-	-	-	-	0.215	0.37	-
HCM Control Delay (s)	0	-	-	-	-	-	28	15.7	-
HCM Lane LOS	A	-	-	-	-	-	D	C	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	0.8	1.7	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	37403.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	24	39	251	337	178	0	306	63	0	729	49
Future Vol, veh/h	0	24	39	251	337	178	0	306	63	0	729	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	61	61	61	83	83	83	63	63	63
Heavy Vehicles, %	5	5	5	2	2	2	19	19	19	16	16	16
Mvmt Flow	0	96	156	411	552	292	0	369	76	0	1157	78

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2025	1641	1196	1729	1642	407	1235	0	0	445	0	0
Stage 1	1196	1196	-	407	407	-	-	-	-	-	-	-
Stage 2	829	445	-	1322	1235	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.12	6.52	6.22	4.29	-	-	4.26	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.518	4.018	3.318	2.371	-	-	2.344	-	-
Pot Cap-1 Maneuver	42	98	224	~ 69	~ 100	644	509	-	-	1045	-	-
Stage 1	224	256	-	621	597	-	-	-	-	-	-	-
Stage 2	361	570	-	~ 193	~ 249	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	98	224	~ 2	~ 100	644	509	-	-	1045	-	-
Mov Cap-2 Maneuver	-	98	-	~ 2	~ 100	-	-	-	-	-	-	-
Stage 1	224	256	-	621	597	-	-	-	-	-	-	-
Stage 2	15	570	-	~ 37	~ 249	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 94934.4	0	0
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	509	-	-	-	6	1045	-	-
HCM Lane V/C Ratio	-	-	-	-	209.29	-	-	-
HCM Control Delay (s)	0	-	-	\$ 94934.4	0	-	-	-
HCM Lane LOS	A	-	-	-	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	159.2	0	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	1058.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	79	54	624	370	69	7	566	234	29	623	0
Future Vol, veh/h	0	79	54	624	370	69	7	566	234	29	623	0
Peak Hour Factor	0.55	0.55	0.55	0.58	0.58	0.58	0.78	0.78	0.78	0.75	0.75	0.75
Heavy Vehicles, %	5	5	5	2	2	2	5	5	5	18	18	18
Mvmt Flow	0	144	98	1076	638	119	9	726	300	39	831	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	104.7	1592.4	722.9	598.5
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	0%	59%	4%
Vol Thru, %	70%	59%	35%	96%
Vol Right, %	29%	41%	6%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	807	133	1063	652
LT Vol	7	0	624	29
Through Vol	566	79	370	623
RT Vol	234	54	69	0
Lane Flow Rate	1035	242	1833	869
Geometry Grp	1	1	1	1
Degree of Util (X)	2.46	0.634	4.459	2.164
Departure Headway (Hd)	24.292	44.488	14.44	26.451
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	166	85	275	148
Service Time	22.292	42.488	12.44	24.451
HCM Lane V/C Ratio	6.235	2.847	6.665	5.872
HCM Control Delay	722.9	104.7	1592.4	598.5
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	31.4	2.9	111.5	24.3

Intersection						
Int Delay, s/veh	168.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	222	339	1336	291	327	52
Future Vol, veh/h	222	339	1336	291	327	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	87	87	77	77
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	308	471	1536	334	425	68

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3865	459	493	0	-	0
Stage 1	459	-	-	-	-	-
Stage 2	3406	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	~ 4	596 ~ 1002	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	~ 20	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	596 ~ 1002	-	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	~ 20	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	171.5	212	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 1002	-	596	-	-
HCM Lane V/C Ratio	1.533	-	1.307	-	-
HCM Control Delay (s)	258.2	0	171.5	-	-
HCM Lane LOS	F	A	F	-	-
HCM 95th %tile Q(veh)	74.4	-	32	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1017.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	276	313	975	48	23	685
Future Vol, veh/h	276	313	975	48	23	685
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	83	83	79	79
Heavy Vehicles, %	29	29	16	16	17	17
Mvmt Flow	329	373	1175	58	29	867

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2129	1204	0	0	1233
Stage 1	1204	-	-	-	-
Stage 2	925	-	-	-	-
Critical Hdwy	6.69	6.49	-	-	4.27
Critical Hdwy Stg 1	5.69	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-
Follow-up Hdwy	3.761	3.561	-	-	2.353
Pot Cap-1 Maneuver	~ 46	~ 197	-	-	516
Stage 1	~ 251	-	-	-	-
Stage 2	346	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 41	~ 197	-	-	516
Mov Cap-2 Maneuver	~ 41	-	-	-	-
Stage 1	~ 251	-	-	-	-
Stage 2	~ 309	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, \$	4105.5	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	71	516
HCM Lane V/C Ratio	-	-	9.876	0.056
HCM Control Delay (s)	-	\$	4105.5	12.4
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	82	0.2

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 1174.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	636	15	3	787	515	93
Future Vol, veh/h	636	15	3	787	515	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	86	86	77	77
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	883	21	3	915	669	121

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1651	730	790	0	-	0
Stage 1	730	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	~ 107	417	771	-	-	-
Stage 1	~ 472	-	-	-	-	-
Stage 2	~ 383	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 106	417	771	-	-	-
Mov Cap-2 Maneuver	~ 106	-	-	-	-	-
Stage 1	~ 468	-	-	-	-	-
Stage 2	~ 383	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	3393.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	771	-	108	-	-
HCM Lane V/C Ratio	0.005	-	8.372	-	-
HCM Control Delay (s)	9.7	\$	3393.1	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0	-	102.8	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	449.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	657	167	6	395	454	64
Future Vol, veh/h	657	167	6	395	454	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	79	95	95	84	84
Heavy Vehicles, %	17	17	16	16	19	19
Mvmt Flow	900	211	6	416	540	76

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1111	0	1434 1006
Stage 1	-	-	-	-	1006 -
Stage 2	-	-	-	-	428 -
Critical Hdwy	-	-	4.26	-	6.59 6.39
Critical Hdwy Stg 1	-	-	-	-	5.59 -
Critical Hdwy Stg 2	-	-	-	-	5.59 -
Follow-up Hdwy	-	-	2.344	-	3.671 3.471
Pot Cap-1 Maneuver	-	-	579	-	~ 135 272
Stage 1	-	-	-	-	~ 329 -
Stage 2	-	-	-	-	623 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	579	-	~ 133 272
Mov Cap-2 Maneuver	-	-	-	-	~ 133 -
Stage 1	-	-	-	-	~ 329 -
Stage 2	-	-	-	-	615 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 1566.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	142	-	-	579	-
HCM Lane V/C Ratio	4.343	-	-	0.011	-
HCM Control Delay (s)	\$ 1566.8	-	-	11.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	63	-	-	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	33.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	62	43	0	416	21	7	27	0	0	131	11
Future Vol, veh/h	25	62	43	0	416	21	7	27	0	0	131	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	77	77	77	75	75	75
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	33	83	57	0	555	28	9	35	0	0	175	15

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	528	236	183	306	243	35	190	0	0	35	0	0
Stage 1	183	183	-	53	53	-	-	-	-	-	-	-
Stage 2	345	53	-	253	190	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.39	6.79	6.49	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.761	4.261	3.561	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	434	635	815	597	615	966	1384	-	-	1576	-	-
Stage 1	779	716	-	896	800	-	-	-	-	-	-	-
Stage 2	635	817	-	695	695	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	89	631	815	497	611	966	1384	-	-	1576	-	-
Mov Cap-2 Maneuver	89	631	-	497	611	-	-	-	-	-	-	-
Stage 1	774	716	-	890	794	-	-	-	-	-	-	-
Stage 2	185	811	-	572	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32	48	1.6	0
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1384	-	-	301	622	1576	-	-
HCM Lane V/C Ratio	0.007	-	-	0.576	0.937	-	-	-
HCM Control Delay (s)	7.6	0	-	32	48	0	-	-
HCM Lane LOS	A	A	-	D	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.4	12.5	0	-	-

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	10	87	1	4	0	149	299	11	1	20	1
Future Vol, veh/h	10	10	87	1	4	0	149	299	11	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	39	39	39	42	42	42	72	72	72	69	69	69
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	26	26	223	2	10	0	207	415	15	1	29	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	874	876	30	993	869	423	30	0	0	430	0	0
Stage 1	32	32	-	837	837	-	-	-	-	-	-	-
Stage 2	842	844	-	156	32	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.39	6.79	6.49	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.761	4.261	3.561	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	251	269	995	200	263	577	1583	-	-	1129	-	-
Stage 1	940	834	-	325	346	-	-	-	-	-	-	-
Stage 2	334	355	-	786	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	211	222	995	123	218	577	1583	-	-	1129	-	-
Mov Cap-2 Maneuver	211	222	-	123	218	-	-	-	-	-	-	-
Stage 1	778	833	-	269	286	-	-	-	-	-	-	-
Stage 2	267	294	-	590	817	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	25.3	2.5	0.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1583	-	-	595	189	1129	-	-
HCM Lane V/C Ratio	0.131	-	-	0.461	0.063	0.001	-	-
HCM Control Delay (s)	7.6	0	-	16.1	25.3	8.2	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	2.4	0.2	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

Existing Plus Approved Plus Project
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	600	9	16	601	66	3	31	56	145	95	39
Future Volume (veh/h)	16	600	9	16	601	66	3	31	56	145	95	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	19	706	11	19	699	77	3	34	62	191	125	51
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.86	0.86	0.86	0.90	0.90	0.90	0.76	0.76	0.76
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	38	795	12	35	668	74	7	59	108	150	228	93
Arrive On Green	0.02	0.46	0.46	0.02	0.46	0.46	0.00	0.10	0.10	0.08	0.18	0.18
Sat Flow, veh/h	1675	1728	27	1560	1450	160	1774	592	1080	1774	1259	514
Grp Volume(v), veh/h	19	0	717	19	0	776	3	0	96	191	0	176
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1610	1774	0	1672	1774	0	1772
Q Serve(g_s), s	0.7	0.0	22.0	0.7	0.0	27.2	0.1	0.0	3.2	5.0	0.0	5.3
Cycle Q Clear(g_c), s	0.7	0.0	22.0	0.7	0.0	27.2	0.1	0.0	3.2	5.0	0.0	5.3
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.65	1.00		0.29
Lane Grp Cap(c), veh/h	38	0	808	35	0	741	7	0	168	150	0	321
V/C Ratio(X)	0.50	0.00	0.89	0.54	0.00	1.05	0.42	0.00	0.57	1.27	0.00	0.55
Avail Cap(c_a), veh/h	142	0	808	132	0	741	150	0	657	150	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	14.5	28.6	0.0	15.9	29.3	0.0	25.4	27.0	0.0	22.0
Incr Delay (d2), s/veh	9.8	0.0	11.8	12.1	0.0	46.0	34.0	0.0	3.0	164.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	13.2	0.4	0.0	21.4	0.1	0.0	1.6	9.3	0.0	2.7
LnGrp Delay(d),s/veh	38.4	0.0	26.3	40.6	0.0	61.9	63.3	0.0	28.4	191.2	0.0	23.5
LnGrp LOS	D		C	D		F	E		C	F		C
Approach Vol, veh/h		736			795			99			367	
Approach Delay, s/veh		26.6			61.4			29.5			110.8	
Approach LOS		C			E			C			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	9.0	11.7	5.3	33.0	4.2	16.5	5.3	33.0				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.2	5.0	27.2	5.0	23.2	5.0	27.2				
Max Q Clear Time (g_c+I1), s	7.0	5.2	2.7	24.0	2.1	7.3	2.7	29.2				
Green Ext Time (p_c), s	0.0	0.4	0.0	1.4	0.0	0.7	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			56.1									
HCM 2010 LOS			E									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

Existing Plus Approved Plus Project
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	868	8	23	759	79	10	10	26	156	16	19
Future Volume (veh/h)	4	868	8	23	759	79	10	10	26	156	16	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1033	10	27	883	92	12	12	32	177	18	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.82	0.82	0.82	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	11	809	8	49	715	74	120	105	184	356	26	28
Arrive On Green	0.01	0.47	0.47	0.03	0.49	0.49	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1675	1739	17	1560	1459	152	172	553	966	1180	137	148
Grp Volume(v), veh/h	5	0	1043	27	0	975	56	0	0	217	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1756	1560	0	1611	1691	0	0	1465	0	0
Q Serve(g_s), s	0.1	0.0	23.2	0.9	0.0	24.4	0.0	0.0	0.0	5.5	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	23.2	0.9	0.0	24.4	1.4	0.0	0.0	6.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.21		0.57	0.82		0.10
Lane Grp Cap(c), veh/h	11	0	817	49	0	789	410	0	0	410	0	0
V/C Ratio(X)	0.44	0.00	1.28	0.55	0.00	1.24	0.14	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	168	0	817	156	0	789	780	0	0	741	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.7	0.0	13.3	23.8	0.0	12.7	16.9	0.0	0.0	19.0	0.0	0.0
Incr Delay (d2), s/veh	25.2	0.0	133.9	9.4	0.0	116.8	0.1	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	41.3	0.5	0.0	36.1	0.7	0.0	0.0	3.0	0.0	0.0
LnGrp Delay(d),s/veh	49.8	0.0	147.2	33.2	0.0	129.5	17.0	0.0	0.0	20.1	0.0	0.0
LnGrp LOS	D		F	C		F	B			C		
Approach Vol, veh/h		1048			1002			56			217	
Approach Delay, s/veh		146.7			127.0			17.0			20.1	
Approach LOS		F			F			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.3	5.6	29.0		15.3	4.3	30.2				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	23.2		21.2	5.0	23.2				
Max Q Clear Time (g_c+1), s		3.4	2.9	25.2		8.9	2.1	26.4				
Green Ext Time (p_c), s		0.2	0.0	0.0		0.8	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			123.2									
HCM 2010 LOS			F									

Intersection

Int Delay, s/veh 154.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	↗
Traffic Vol, veh/h	487	846	532	3	14	626
Future Vol, veh/h	487	846	532	3	14	626
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	78	78	69	69
Heavy Vehicles, %	11	11	14	14	2	2
Mvmt Flow	553	961	682	4	20	907

Major/Minor

	Major1	Major2	Minor2
Conflicting Flow All	686	0	0
Stage 1	-	-	684
Stage 2	-	-	2067
Critical Hdwy	4.21	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.299	-	3.518
Pot Cap-1 Maneuver	867	-	22 ~ 449
Stage 1	-	-	501
Stage 2	-	-	106
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	867	-	~ 8 ~ 449
Mov Cap-2 Maneuver	-	-	~ 8
Stage 1	-	-	181
Stage 2	-	-	106

Approach

	EB	WB	SB
HCM Control Delay, s	5.9	0	\$ 511.9
HCM LOS			F

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	867	-	-	-	8	449
HCM Lane V/C Ratio	0.638	-	-	-	2.536	2.021
HCM Control Delay (s)	16.2	-	-	-	\$ 1596.3	\$ 487.6
HCM Lane LOS	C	-	-	-	F	F
HCM 95th %tile Q(veh)	4.7	-	-	-	3.6	62.7

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	256.4
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	75	636	394	518	209	150
Future Vol, veh/h	75	636	394	518	209	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	691	428	563	227	163
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	176.3	406.9	32.6
HCM LOS	F	F	D

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	43%	11%	0%
Vol Thru, %	57%	0%	58%
Vol Right, %	0%	89%	42%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	912	711	359
LT Vol	394	75	0
Through Vol	518	0	209
RT Vol	0	636	150
Lane Flow Rate	991	773	390
Geometry Grp	1	1	1
Degree of Util (X)	1.845	1.309	0.735
Departure Headway (Hd)	7.629	7.511	8.821
Convergence, Y/N	Yes	Yes	Yes
Cap	486	495	414
Service Time	5.629	5.511	6.821
HCM Lane V/C Ratio	2.039	1.562	0.942
HCM Control Delay	406.9	176.3	32.6
HCM Lane LOS	F	F	D
HCM 95th-tile Q	55.7	27.2	5.8

Intersection												
Intersection Delay, s/veh 33.4												
Intersection LOS F												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	431	120	200	244	100	566	0	280	0	0	0
Future Vol, veh/h	0	431	120	200	244	100	566	0	280	0	0	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	468	130	217	265	109	615	0	304	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	121.8	122.6	377.3	0
HCM LOS	F	F	F	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	67%	0%	37%	0%
Vol Thru, %	0%	78%	45%	100%
Vol Right, %	33%	22%	18%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	846	551	544	0
LT Vol	566	0	200	0
Through Vol	0	431	244	0
RT Vol	280	120	100	0
Lane Flow Rate	920	599	591	0
Geometry Grp	1	1	1	1
Degree of Util (X)	1.779	1.148	1.149	0
Departure Headway (Hd)	7.452	9.136	9.234	13.035
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	497	401	396	0
Service Time	5.452	7.136	7.234	11.035
HCM Lane V/C Ratio	1.851	1.494	1.492	0
HCM Control Delay	377.3	121.8	122.6	16
HCM Lane LOS	F	F	F	N
HCM 95th-tile Q	53.1	17.2	17.1	0

Intersection

Int Delay, s/veh 15223.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	302	26	499	462	0	0	0	0	1207	2	60
Future Vol, veh/h	0	302	26	499	462	0	0	0	0	1207	2	60
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	92	92	92	25	25	25	95	95	95
Heavy Vehicles, %	0	4	0	14	0	0	0	0	0	39	4	2
Mvmt Flow	0	360	31	542	502	0	0	0	0	1271	2	63

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	391	0	0		1962	1977	502
Stage 1	-	-	-	-	-	-		1586	1586	-
Stage 2	-	-	-	-	-	-		376	391	-
Critical Hdwy	-	-	-	4.24	-	-		6.79	6.54	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.79	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.79	5.54	-
Follow-up Hdwy	-	-	-	2.326	-	-		3.851	4.036	3.318
Pot Cap-1 Maneuver	0	-	-	1105	-	0		~ 55	61	569
Stage 1	0	-	-	-	-	0		~ 152	166	-
Stage 2	0	-	-	-	-	0		~ 620	604	-
Platoon blocked, %		-	-	-	-	-				
Mov Cap-1 Maneuver	-	-	-	1105	-	-		~ 18	0	569
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 18	0	-
Stage 1	-	-	-	-	-	-		~ 152	0	-
Stage 2	-	-	-	-	-	-		~ 198	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	5.9	\$ 31572.6
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1105	-	19
HCM Lane V/C Ratio	-	-	0.491	-	70.305
HCM Control Delay (s)	-	-	11.4	\$ 1572.6	
HCM Lane LOS	-	-	B	A	F
HCM 95th %tile Q(veh)	-	-	2.8	-	167.6

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	177.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	39	1470	0	0	957	938	4	7	449	0	0	0
Future Vol, veh/h	39	1470	0	0	957	938	4	7	449	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	94	94	94	90	90	90	25	25	25
Heavy Vehicles, %	10	8	0	0	10	21	0	50	20	0	0	0
Mvmt Flow	41	1547	0	0	1018	998	4	8	499	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	2016	0	- - - 0 3146 3645 1547
Stage 1	-	-	- - - 1629 1629 -
Stage 2	-	-	- - - 1517 2016 -
Critical Hdwy	4.2	-	- - - 6.4 7 6.4
Critical Hdwy Stg 1	-	-	- - - 5.4 6 -
Critical Hdwy Stg 2	-	-	- - - 5.4 6 -
Follow-up Hdwy	2.29	-	- - - 3.5 4.45 3.48
Pot Cap-1 Maneuver	266	- 0 0	- - - 12 ~3 ~127
Stage 1	-	- 0 0	- - - 178 124 -
Stage 2	-	- 0 0	- - - 202 76 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	266	- - -	- 0 0 ~127
Mov Cap-2 Maneuver	-	- - -	- 0 0 -
Stage 1	-	- - -	- 0 0 -
Stage 2	-	- - -	- 202 0 -

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0	\$ 1431.1
HCM LOS			F


























Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	127	266	-	-	-
HCM Lane V/C Ratio	4.024	0.154	-	-	-
HCM Control Delay (s)	\$ 1431.1	21	0	-	-
HCM Lane LOS	F	C	A	-	-
HCM 95th %tile Q(veh)	51.7	0.5	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis

3: Sperry Ave & Rogers Rd

Existing Plus Approved Plus Project
Timing Plan: PM Peak

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		 										 		
Traffic Volume (vph)	250	1402	267	113	697	207	278	8	117	457	0	920		
Future Volume (vph)	250	1402	267	113	697	207	278	8	117	457	0	920		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		
Satd. Flow (prot)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		
Satd. Flow (perm)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493		
Peak-hour factor, PHF	0.93	0.93	0.92	0.92	0.88	0.88	0.92	0.92	0.92	0.91	0.92	0.91		
Adj. Flow (vph)	269	1508	290	123	792	235	302	9	127	502	0	1011		
RTOR Reduction (vph)	0	0	100	0	0	86	0	0	107	0	0	90		
Lane Group Flow (vph)	269	1508	190	123	792	149	302	9	20	0	502	921		
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov		
Protected Phases	5	2		1	6		8	8		7	7	5		
Permitted Phases			2			6			8			7		
Actuated Green, G (s)	17.5	64.9	64.9	10.1	55.5	55.5	22.5	22.5	22.5		26.0	43.5		
Effective Green, g (s)	17.5	64.9	64.9	10.1	55.5	55.5	22.5	22.5	22.5		26.0	43.5		
Actuated g/C Ratio	0.12	0.45	0.45	0.07	0.38	0.38	0.16	0.16	0.16		0.18	0.30		
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5		
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	199	1468	708	123	616	605	274	289	245		320	747		
v/s Ratio Prot	c0.16	0.46		0.07	c0.49		c0.17	0.00			c0.28	0.15		
v/s Ratio Perm			0.12			0.09			0.01			0.22		
v/c Ratio	1.35	1.03	0.27	1.00	1.29	0.25	1.10	0.03	0.08		1.57	1.23		
Uniform Delay, d1	63.8	40.0	25.1	67.5	44.8	30.5	61.2	52.0	52.4		59.5	50.8		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2	187.6	30.7	0.4	81.2	140.6	0.2	84.5	0.0	0.1		270.6	116.5		
Delay (s)	251.4	70.8	25.6	148.6	185.3	30.7	145.8	52.0	52.5		330.1	167.3		
Level of Service	F	E	C	F	F	C	F	D	D		F	F		
Approach Delay (s)		87.9			149.8			116.8			221.3			
Approach LOS		F			F			F			F			
Intersection Summary														
HCM 2000 Control Delay			143.2									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.32											
Actuated Cycle Length (s)			145.0								23.5			
Intersection Capacity Utilization			98.9%										ICU Level of Service	F
Analysis Period (min)			15											
c Critical Lane Group														

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↘		↖↗	↕↕	↖				↖		↖
Traffic Volume (veh/h)	142	596	0	6	405	114	0	0	0	160	0	194
Future Volume (veh/h)	142	596	0	6	405	114	0	0	0	160	0	194
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	151	634	0	7	450	127				250	0	303
Adj No. of Lanes	2	1	0	2	2	1				1	0	1
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90				0.64	0.64	0.64
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	209	782	0	38	1259	461				481	0	334
Arrive On Green	0.10	0.45	0.00	0.01	0.36	0.36				0.34	0.00	0.34
Sat Flow, veh/h	2167	1743	0	3510	3471	1272				1403	0	973
Grp Volume(v), veh/h	151	634	0	7	450	127				250	0	303
Grp Sat Flow(s),veh/h/ln	1083	1743	0	1755	1736	1272				1403	0	973
Q Serve(g_s), s	5.0	23.4	0.0	0.1	7.1	5.3				10.6	0.0	22.1
Cycle Q Clear(g_c), s	5.0	23.4	0.0	0.1	7.1	5.3				10.6	0.0	22.1
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	209	782	0	38	1259	461				481	0	334
V/C Ratio(X)	0.72	0.81	0.00	0.18	0.36	0.28				0.52	0.00	0.91
Avail Cap(c_a), veh/h	904	1172	0	1464	2335	855				623	0	432
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	32.6	17.8	0.0	36.4	17.3	16.8				19.5	0.0	23.3
Incr Delay (d2), s/veh	4.6	4.7	0.0	2.3	0.4	0.7				0.9	0.0	19.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.1	0.0	0.1	3.4	4.4				4.2	0.0	12.1
LnGrp Delay(d),s/veh	37.2	22.5	0.0	38.7	17.7	17.5				20.4	0.0	42.7
LnGrp LOS	D	C		D	B	B				C		D
Approach Vol, veh/h		785			584						553	
Approach Delay, s/veh		25.3			17.9						32.6	
Approach LOS		C			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	5.3	39.0		30.0	11.7	32.7						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	31.0	50.0		33.0	31.0	50.0						
Max Q Clear Time (g_c+I), s	12.1	25.4		24.1	7.0	9.1						
Green Ext Time (p_c), s	0.0	7.9		1.4	0.5	7.1						
Intersection Summary												
HCM 2010 Ctrl Delay			25.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	104	531	58	18	494	95	181	118	95	438	204	336
Future Volume (veh/h)	104	531	58	18	494	95	181	118	95	438	204	336
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		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	1850	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	114	584	64	20	555	107	232	151	122	548	255	420
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.78	0.78	0.78	0.80	0.80	0.80
Percent Heavy Veh, %	1	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	175	633	69	41	659	582	261	248	200	603	184	303
Arrive On Green	0.05	0.39	0.39	0.02	0.36	0.36	0.14	0.26	0.26	0.17	0.28	0.28
Sat Flow, veh/h	3476	1639	180	1660	1827	1615	1810	968	782	3476	647	1065
Grp Volume(v), veh/h	114	0	648	20	555	107	232	0	273	548	0	675
Grp Sat Flow(s),veh/h/ln	1738	0	1818	1660	1827	1615	1810	0	1750	1738	0	1712
Q Serve(g_s), s	3.7	0.0	39.3	1.4	32.3	5.3	14.6	0.0	15.9	17.9	0.0	33.0
Cycle Q Clear(g_c), s	3.7	0.0	39.3	1.4	32.3	5.3	14.6	0.0	15.9	17.9	0.0	33.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.45	1.00		0.62
Lane Grp Cap(c), veh/h	175	0	703	41	659	582	261	0	447	603	0	488
V/C Ratio(X)	0.65	0.00	0.92	0.49	0.84	0.18	0.89	0.00	0.61	0.91	0.00	1.38
Avail Cap(c_a), veh/h	780	0	753	301	757	669	328	0	499	630	0	488
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.0	0.0	33.9	55.8	34.0	25.4	48.6	0.0	38.0	47.0	0.0	41.4
Incr Delay (d2), s/veh	1.5	0.0	17.2	18.2	9.2	0.3	18.5	0.0	1.8	16.2	0.0	185.2
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	1.8	0.0	23.0	0.8	17.9	2.4	8.6	0.0	8.0	10.0	0.0	40.5
LnGrp Delay(d),s/veh	55.5	0.0	51.1	73.9	43.2	25.7	67.2	0.0	39.8	63.2	0.0	226.6
LnGrp LOS	E		D	E	D	C	E		D	E		F
Approach Vol, veh/h		762			682			505			1223	
Approach Delay, s/veh		51.8			41.4			52.4			153.4	
Approach LOS		D			D			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	7.0	50.3	20.9	37.6	10.0	47.3	24.3	34.2				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	48.0	* 21	33.0	* 26	48.0	* 21	33.0					
Max Q Clear Time (g_c+1), s	41.3	16.6	35.0	5.7	34.3	19.9	17.9					
Green Ext Time (p_c), s	0.0	3.4	0.1	0.0	0.2	5.6	0.2	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			88.8									
HCM 2010 LOS			F									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	99	627	38	71	574	76	28	91	62	65	48	60
Future Volume (veh/h)	99	627	38	71	574	76	28	91	62	65	48	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	104	660	40	74	598	79	35	114	78	82	61	76
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.80	0.80	0.80	0.79	0.79	0.79
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	163	1126	68	138	1000	132	321	222	152	279	162	202
Arrive On Green	0.09	0.33	0.33	0.08	0.32	0.32	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1810	3363	204	1810	3117	411	1269	1051	719	1208	769	958
Grp Volume(v), veh/h	104	344	356	74	336	341	35	0	192	82	0	137
Grp Sat Flow(s),veh/h/ln	1810	1755	1812	1810	1754	1773	1269	0	1771	1208	0	1728
Q Serve(g_s), s	2.9	8.4	8.4	2.0	8.3	8.3	1.3	0.0	4.9	3.3	0.0	3.5
Cycle Q Clear(g_c), s	2.9	8.4	8.4	2.0	8.3	8.3	4.8	0.0	4.9	8.3	0.0	3.5
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.55
Lane Grp Cap(c), veh/h	163	588	607	138	563	569	321	0	374	279	0	365
V/C Ratio(X)	0.64	0.59	0.59	0.54	0.60	0.60	0.11	0.00	0.51	0.29	0.00	0.38
Avail Cap(c_a), veh/h	1123	1225	1265	1123	1225	1238	693	0	893	633	0	871
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.7	14.2	14.2	23.0	14.7	14.7	19.5	0.0	18.0	21.7	0.0	17.4
Incr Delay (d2), s/veh	4.1	1.3	1.3	3.2	1.4	1.4	0.1	0.0	1.1	0.6	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	1.6	4.2	4.4	1.1	4.2	4.3	0.5	0.0	2.5	1.1	0.0	1.7
LnGrp Delay(d),s/veh	26.7	15.5	15.5	26.2	16.2	16.2	19.6	0.0	19.1	22.2	0.0	18.1
LnGrp LOS	C	B	B	C	B	B	B		B	C		B
Approach Vol, veh/h		804			751			227			219	
Approach Delay, s/veh		17.0			17.2			19.2			19.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	23.8		17.4	11.1	23.0		17.4				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	32.0	36.0		26.0	32.0	36.0		26.0				
Max Q Clear Time (g_c+I), s	11.0	10.4		10.3	4.9	10.3		6.9				
Green Ext Time (p_c), s	0.2	6.1		0.9	0.2	6.2		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			17.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	442	57	291	459	143	68	250	191	125	300	47
Future Volume (veh/h)	166	442	57	291	459	143	68	250	191	125	300	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1841	1900	1881	1845	1900	1845	1873	1900	1881	1900	1900
Adj Flow Rate, veh/h	171	456	59	316	499	155	82	301	230	144	345	54
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.83	0.83	0.83	0.87	0.87	0.87
Percent Heavy Veh, %	2	3	3	1	3	0	3	1	1	1	0	0
Cap, veh/h	203	606	78	331	896	410	106	308	235	176	669	554
Arrive On Green	0.11	0.19	0.19	0.18	0.26	0.26	0.06	0.31	0.31	0.10	0.35	0.35
Sat Flow, veh/h	1774	3110	400	1792	3505	1606	1757	980	749	1792	1900	1574
Grp Volume(v), veh/h	171	255	260	316	499	155	82	0	531	144	345	54
Grp Sat Flow(s),veh/h/ln	1774	1749	1762	1792	1752	1606	1757	0	1729	1792	1900	1574
Q Serve(g_s), s	10.2	14.9	15.1	18.9	13.4	8.6	5.0	0.0	33.0	8.5	15.6	2.5
Cycle Q Clear(g_c), s	10.2	14.9	15.1	18.9	13.4	8.6	5.0	0.0	33.0	8.5	15.6	2.5
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	203	341	343	331	896	410	106	0	542	176	669	554
V/C Ratio(X)	0.84	0.75	0.76	0.96	0.56	0.38	0.78	0.00	0.98	0.82	0.52	0.10
Avail Cap(c_a), veh/h	327	484	488	331	1035	474	340	0	542	347	669	554
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	41.1	41.2	43.7	35.0	33.2	50.2	0.0	36.8	47.9	27.8	23.6
Incr Delay (d2), s/veh	10.3	7.3	7.6	37.7	1.2	1.2	11.5	0.0	33.3	9.0	1.4	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	5.6	7.9	8.1	12.9	6.6	4.0	2.8	0.0	20.7	4.7	8.4	1.1
LnGrp Delay(d),s/veh	57.3	48.4	48.8	81.5	36.2	34.4	61.7	0.0	70.1	56.9	29.2	23.7
LnGrp LOS	E	D	D	F	D	C	E		E	E	C	C
Approach Vol, veh/h		686			970			613			543	
Approach Delay, s/veh		50.8			50.6			69.0			36.0	
Approach LOS		D			D			E			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	26.0	27.1	11.1	44.1	19.4	33.7	15.2	40.0				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	20.0	30.0	21.0	26.0	20.0	32.0	21.0	34.0				
Max Q Clear Time (g_c+20), s	20.0	17.1	7.0	17.6	12.2	15.4	10.5	35.0				
Green Ext Time (p_c), s	0.0	4.0	0.1	2.4	0.2	5.8	0.2	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				51.8								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave



















Existing Plus Approved Plus Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	377	85	31	487	20	35	34	5	4	75	188
Future Volume (veh/h)	211	377	85	31	487	20	35	34	5	4	75	188
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	220	393	89	35	547	22	47	46	7	5	85	214
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.89	0.89	0.89	0.74	0.74	0.74	0.88	0.88	0.88
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	469	1580	354	601	1033	912	240	208	26	75	120	290
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	855	2794	627	927	1827	1612	548	850	105	9	490	1185
Grp Volume(v), veh/h	220	241	241	35	547	22	100	0	0	304	0	0
Grp Sat Flow(s),veh/h/ln	855	1721	1700	927	1827	1612	1502	0	0	1684	0	0
Q Serve(g_s), s	10.8	3.5	3.6	1.0	9.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.1	3.5	3.6	4.6	9.3	0.3	2.1	0.0	0.0	8.3	0.0	0.0
Prop In Lane	1.00		0.37	1.00		1.00	0.47		0.07	0.02		0.70
Lane Grp Cap(c), veh/h	469	973	961	601	1033	912	474	0	0	485	0	0
V/C Ratio(X)	0.47	0.25	0.25	0.06	0.53	0.02	0.21	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	616	1269	1253	760	1347	1189	1051	0	0	1178	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.0	5.5	5.5	6.7	6.8	4.8	15.1	0.0	0.0	17.4	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.3	0.3	0.1	0.9	0.0	0.2	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	1.7	1.8	0.3	4.8	0.1	1.1	0.0	0.0	4.1	0.0	0.0
LnGrp Delay(d),s/veh	14.5	5.8	5.8	6.8	7.7	4.8	15.3	0.0	0.0	18.8	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		702			604			100			304	
Approach Delay, s/veh		8.5			7.5			15.3			18.8	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.0		17.2		33.0		17.2				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		37.0		33.0		37.0		33.0				
Max Q Clear Time (g_c+1), s		22.1		4.1		11.3		10.3				
Green Ext Time (p_c), s		6.3		0.6		7.6		2.0				
Intersection Summary												
HCM 2010 Ctrl Delay				10.4								
HCM 2010 LOS				B								






















HCM Unsignalized Intersection Capacity Analysis
9: SR-33 & Sperry Ave

Existing Plus Approved Plus Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	103	121	14	51	6	240	580	104	36	455	335
Future Volume (Veh/h)	151	103	121	14	51	6	240	580	104	36	455	335
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.80	0.80	0.80	0.98	0.98	0.98	0.88	0.88	0.88
Hourly flow rate (vph)	176	120	141	18	64	8	245	592	106	41	517	381
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1766	1787	517	1935	1734	645	517			698		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1766	1787	517	1935	1734	645	517			698		
tC, single (s)	7.2	6.5	6.3	7.1	6.5	6.2	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	0	0	74	0	0	98	76			95		
cM capacity (veh/h)	0	58	550	0	64	476	1029			837		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total	437	90	943	558	381							
Volume Left	176	18	245	41	0							
Volume Right	141	8	106	0	381							
cSH	0	5	1029	837	1700							
Volume to Capacity	Err	19.85	0.24	0.05	0.22							
Queue Length 95th (ft)	Err	Err	23	4	0							
Control Delay (s)	Err	Err	5.4	1.3	0.0							
Lane LOS	F	F	A	A								
Approach Delay (s)	Err	Err	5.4	0.8								
Approach LOS	F	F										
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			113.9%		ICU Level of Service					H		
Analysis Period (min)			15									

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

Existing Plus Approved Plus Project
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	153	100	291	327	47	108	727	238	174	890	40
Future Volume (veh/h)	21	153	100	291	327	47	108	727	238	174	890	40
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1545	1545	1900	1570	1570	1900
Adj Flow Rate, veh/h	25	180	118	364	409	59	117	790	259	189	967	43
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.80	0.80	0.80	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	23	23	23	21	21	21
Cap, veh/h	327	194	127	366	328	47	135	380	125	208	579	26
Arrive On Green	0.18	0.18	0.18	0.21	0.21	0.21	0.09	0.34	0.34	0.14	0.39	0.39
Sat Flow, veh/h	1774	1052	689	1774	1592	230	1471	1115	365	1495	1492	66
Grp Volume(v), veh/h	25	0	298	364	0	468	117	0	1049	189	0	1010
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1774	0	1822	1471	0	1480	1495	0	1559
Q Serve(g_s), s	1.6	0.0	23.7	28.8	0.0	29.0	11.0	0.0	48.0	17.5	0.0	54.6
Cycle Q Clear(g_c), s	1.6	0.0	23.7	28.8	0.0	29.0	11.0	0.0	48.0	17.5	0.0	54.6
Prop In Lane	1.00		0.40	1.00		0.13	1.00		0.25	1.00		0.04
Lane Grp Cap(c), veh/h	327	0	321	366	0	375	135	0	505	208	0	605
V/C Ratio(X)	0.08	0.00	0.93	1.00	0.00	1.25	0.87	0.00	2.08	0.91	0.00	1.67
Avail Cap(c_a), veh/h	353	0	346	366	0	375	219	0	505	223	0	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.5	0.0	56.5	55.8	0.0	55.9	63.0	0.0	46.4	59.7	0.0	43.1
Incr Delay (d2), s/veh	0.0	0.0	28.9	45.9	0.0	131.4	10.3	0.0	491.9	34.2	0.0	309.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	14.0	18.7	0.0	28.2	4.9	0.0	88.5	9.2	0.0	75.2
LnGrp Delay(d),s/veh	47.6	0.0	85.4	101.7	0.0	187.3	73.3	0.0	538.3	94.0	0.0	352.0
LnGrp LOS	D		F	F		F	E		F	F		F
Approach Vol, veh/h		323			832			1166			1199	
Approach Delay, s/veh		82.5			149.8			491.6			311.4	
Approach LOS		F			F			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.1	23.5	52.9		34.2	16.9	59.5				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 28	21.0	48.0		29.0	21.0	48.0				
Max Q Clear Time (g_c+I1), s		25.7	19.5	50.0		31.0	13.0	56.6				
Green Ext Time (p_c), s		0.2	0.0	0.0		0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			311.9									
HCM 2010 LOS			F									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Plus Approved Plus Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	205	41	127	328	186	105	760	26	29	919	266
Future Volume (veh/h)	46	205	41	127	328	186	105	760	26	29	919	266
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.97	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1818	1900	1810	1900	1900	1900	1845	1900	1881	1829	1900
Adj Flow Rate, veh/h	51	228	46	140	360	204	115	835	29	38	1194	345
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.77	0.77	0.77
Percent Heavy Veh, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	229	310	63	306	479	396	198	1538	53	329	1122	318
Arrive On Green	0.04	0.21	0.21	0.08	0.25	0.25	0.06	0.45	0.45	0.04	0.42	0.42
Sat Flow, veh/h	1723	1461	295	1723	1900	1571	1810	3455	120	1792	2657	753
Grp Volume(v), veh/h	51	0	274	140	360	204	115	423	441	38	773	766
Grp Sat Flow(s),veh/h/ln	1723	0	1755	1723	1900	1571	1810	1752	1823	1792	1738	1672
Q Serve(g_s), s	1.8	0.0	11.4	4.8	13.7	8.7	2.8	13.8	13.8	0.9	33.0	33.0
Cycle Q Clear(g_c), s	1.8	0.0	11.4	4.8	13.7	8.7	2.8	13.8	13.8	0.9	33.0	33.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.07	1.00		0.45
Lane Grp Cap(c), veh/h	229	0	373	306	479	396	198	780	811	329	734	706
V/C Ratio(X)	0.22	0.00	0.74	0.46	0.75	0.51	0.58	0.54	0.54	0.12	1.05	1.09
Avail Cap(c_a), veh/h	707	0	898	846	1216	1005	671	780	811	838	734	706
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	28.7	21.4	27.0	25.1	18.2	15.9	15.9	12.7	22.6	22.6
Incr Delay (d2), s/veh	0.2	0.0	1.1	0.4	0.9	0.4	1.0	0.4	0.4	0.1	48.2	59.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	5.6	2.3	7.2	3.8	1.4	6.7	6.9	0.4	25.5	26.7
LnGrp Delay(d),s/veh	23.3	0.0	29.8	21.8	27.9	25.5	19.2	16.3	16.3	12.8	70.8	81.9
LnGrp LOS	C		C	C	C	C	B	B	B	B	F	F
Approach Vol, veh/h		325			704			979			1577	
Approach Delay, s/veh		28.8			26.0			16.6			74.8	
Approach LOS		C			C			B			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	7.3	24.3	6.8	39.7	10.5	21.2	8.6	37.9				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	25.0	50.0	25.0	33.0	31.0	40.0	25.0	33.0				
Max Q Clear Time (g_c+I), s	13.8	15.7	2.9	15.8	6.8	13.4	4.8	35.0				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.7	0.0	0.3	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			45.1									
HCM 2010 LOS			D									

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↔			↖	↗
Traffic Vol, veh/h	0	188	280	16	239	73	119	651	0	240	1014	48
Future Vol, veh/h	0	188	280	16	239	73	119	651	0	240	1014	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	92	92	92	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	23	23	23	21	21	21
Mvmt Flow	0	229	341	20	291	89	129	708	0	264	1114	53

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2798	2608	1114	2920	2661	708	1167	0	0	708	0	0
Stage 1	1642	1642	-	966	966	-	-	-	-	-	-	-
Stage 2	1156	966	-	1954	1695	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.33	-	-	4.31	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.407	-	-	2.389	-	-
Pot Cap-1 Maneuver	12	~ 25	~ 253	~ 10	~ 23	435	529	-	-	809	-	-
Stage 1	126	~ 158	-	306	333	-	-	-	-	-	-	-
Stage 2	239	333	-	83	~ 148	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 1	~ 253	-	~ 1	435	529	-	-	809	-	-
Mov Cap-2 Maneuver	-	~ 1	-	-	~ 1	-	-	-	-	-	-	-
Stage 1	75	~ 9	-	183	~ 199	-	-	-	-	-	-	-
Stage 2	-	~ 199	-	40	~ 8	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					2.2		2.1	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	529	-	-	-	253	-	809	-	-
HCM Lane V/C Ratio	0.245	-	-	-	1.35	-	0.326	-	-
HCM Control Delay (s)	14	0	-	-	219.7	-	11.6	0	-
HCM Lane LOS	B	A	-	-	F	-	B	A	-
HCM 95th %tile Q(veh)	1	-	-	-	18.1	-	1.4	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	15.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	9	686	445	234	209	8	269	19	343	0	3	1
Future Vol, veh/h	9	686	445	234	209	8	269	19	343	0	3	1
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	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	50	50	50	37	37	37	50	50	50
Heavy Vehicles, %	100	4	8	0	15	0	3	100	3	0	100	100
Mvmt Flow	13	1009	654	468	418	16	727	51	927	0	6	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	434	0	0	1663	0	0	2728	2732	1336	3213	3051	426
Stage 1	-	-	-	-	-	-	1362	1362	-	1362	1362	-
Stage 2	-	-	-	-	-	-	1366	1370	-	1851	1689	-
Critical Hdwy	5.1	-	-	4.1	-	-	7.13	7.5	6.23	7.1	7.5	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	6.5	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	6.5	-	6.1	6.5	-
Follow-up Hdwy	3.1	-	-	2.2	-	-	3.527	4.9	3.327	3.5	4.9	4.2
Pot Cap-1 Maneuver	753	-	-	~ 392	-	-	~ 13	~ 9	~ 187	6	~ 5	464
Stage 1	-	-	-	-	-	-	~ 182	138	-	185	138	-
Stage 2	-	-	-	-	-	-	~ 181	137	-	96	89	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	753	-	-	~ 392	-	-	-	0	~ 187	-	0	464
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 179	136	-	182	0	-
Stage 2	-	-	-	-	-	-	-	0	-	-	87	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	72.9		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	187	753	-	-	~ 392	-	-	-
HCM Lane V/C Ratio	-	5.232	0.018	-	-	1.194	-	-	-
HCM Control Delay (s)	\$	1952.1	9.9	-	-	140.5	-	-	-
HCM Lane LOS	-	F	A	-	-	F	-	-	-
HCM 95th %tile Q(veh)	-	102.5	0.1	-	-	18.8	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕		↕		↕	↕	↕	↕	
Traffic Vol, veh/h	212	827	49	49	303	77	119	823	57	32	940	94
Future Vol, veh/h	212	827	49	49	303	77	119	823	57	32	940	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	69	69	69	86	86	86	72	72	72
Heavy Vehicles, %	2	2	2	28	0	4	0	22	27	4	13	0
Mvmt Flow	848	3308	196	71	439	112	138	957	66	44	1306	131

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	3002	2759	1372	4445	2758	957	1437	0	0	1023	0	0
Stage 1	1460	1460	-	1233	1233	-	-	-	-	-	-	-
Stage 2	1542	1299	-	3212	1525	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.38	6.5	6.24	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.38	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.38	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.752	4	3.336	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	~ 8	~ 20	~ 179	0	~ 20	310	479	-	-	671	-	-
Stage 1	~ 161	~ 194	-	192	~ 251	-	-	-	-	-	-	-
Stage 2	~ 144	~ 232	-	~ 11	~ 182	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 6	~ 179	-	~ 6	310	479	-	-	671	-	-
Mov Cap-2 Maneuver	-	~ 6	-	-	~ 6	-	-	-	-	-	-	-
Stage 1	~ 52	~ 181	-	~ 62	~ 81	-	-	-	-	-	-	-
Stage 2	-	~ 74	-	~ 17	~ 170	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					1.9		0.3	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	479	-	-	-	-	-	310	671	-
HCM Lane V/C Ratio	0.289	-	-	-	-	-	0.36	0.066	-
HCM Control Delay (s)	15.5	0	-	-	-	-	23	10.7	-
HCM Lane LOS	C	A	-	-	-	-	C	B	-
HCM 95th %tile Q(veh)	1.2	-	-	-	-	-	1.6	0.2	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	214	562	91	209	82	0	1	677	149	206	568	0
Future Vol, veh/h	214	562	91	209	82	0	1	677	149	206	568	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	86	86	86	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	8	8	8	18	18	18	16	16	16
Mvmt Flow	856	2248	364	243	95	0	1	940	207	286	789	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2454	2510	789	3713	2407	1044	789	0	0	1147	0	0
Stage 1	1361	1361	-	1046	1046	-	-	-	-	-	-	-
Stage 2	1093	1149	-	2667	1361	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.18	6.58	6.28	4.28	-	-	4.26	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.572	4.072	3.372	2.362	-	-	2.344	-	-
Pot Cap-1 Maneuver	~ 21	~ 28	391	~ 2	~ 32	271	764	-	-	561	-	-
Stage 1	~ 183	~ 216	-	269	298	-	-	-	-	-	-	-
Stage 2	~ 260	~ 273	-	~ 29	210	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 3	391	-	~ 3	271	764	-	-	561	-	-
Mov Cap-2 Maneuver	-	~ 3	-	-	~ 3	-	-	-	-	-	-	-
Stage 1	~ 182	~ 20	-	268	297	-	-	-	-	-	-	-
Stage 2	~ 176	~ 272	-	-	~ 19	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					0		4.8	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	764	-	-	-	-	561	-	-
HCM Lane V/C Ratio	0.002	-	-	-	-	0.51	-	-
HCM Control Delay (s)	9.7	0	-	-	-	17.9	0	-
HCM Lane LOS	A	A	-	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	2.9	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	1010.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	784	179	283	217	17	78	749	218	20	850	0
Future Vol, veh/h	0	784	179	283	217	17	78	749	218	20	850	0
Peak Hour Factor	0.72	0.72	0.72	0.86	0.86	0.86	0.80	0.80	0.80	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	8	8	8	9	9	9	14	14	14
Mvmt Flow	0	1089	249	329	252	20	98	936	273	22	924	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1213.6	443.8	1203.2	817.6
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	0%	55%	2%
Vol Thru, %	72%	81%	42%	98%
Vol Right, %	21%	19%	3%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1045	963	517	870
LT Vol	78	0	283	20
Through Vol	749	784	217	850
RT Vol	218	179	17	0
Lane Flow Rate	1306	1338	601	946
Geometry Grp	1	1	1	1
Degree of Util (X)	3.498	3.537	1.64	2.585
Departure Headway (Hd)	32.393	29.371	52.653	40.481
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	131	147	78	104
Service Time	30.393	27.371	50.653	38.481
HCM Lane V/C Ratio	9.969	9.102	7.705	9.096
HCM Control Delay	1203.2	1213.6	443.8	817.6
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	38.5	42.7	9.8	21.6

Intersection						
Int Delay, s/veh	888.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	241	1154	803	291	544	406
Future Vol, veh/h	241	1154	803	291	544	406
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	76	76	94	94
Heavy Vehicles, %	2	2	1	11	14	14
Mvmt Flow	339	1625	1057	383	579	432

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	3292	795	1011	0	0
Stage 1	795	-	-	-	-
Stage 2	2497	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-
Pot Cap-1 Maneuver	~ 10	~ 388	~ 690	-	-
Stage 1	445	-	-	-	-
Stage 2	~ 64	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	0	~ 388	~ 690	-	-
Mov Cap-2 Maneuver	0	-	-	-	-
Stage 1	0	-	-	-	-
Stage 2	~ 64	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	1854.5	193.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 690	-	388	-	-
HCM Lane V/C Ratio	1.531	-	5.064	-	-
HCM Control Delay (s)	263.5	\$	1854.5	-	-
HCM Lane LOS	F	A	F	-	-
HCM 95th %tile Q(veh)	53.3	-	200.8	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1020					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	163	109	752	54	148	1731
Future Vol, veh/h	163	109	752	54	148	1731
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	71	71	77	77	96	96
Heavy Vehicles, %	9	9	11	11	14	14
Mvmt Flow	230	154	977	70	154	1803

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	3123	1012	0	0	1047	0
Stage 1	1012	-	-	-	-	-
Stage 2	2111	-	-	-	-	-
Critical Hdwy	6.49	6.29	-	-	4.24	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	-	-	2.326	-
Pot Cap-1 Maneuver	~ 12	282	-	-	621	-
Stage 1	341	-	-	-	-	-
Stage 2	~ 96	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 12	282	-	-	621	-
Mov Cap-2 Maneuver	~ 12	-	-	-	-	-
Stage 1	341	-	-	-	-	-
Stage 2	~ 96	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, \$	9012.8	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	19	621
HCM Lane V/C Ratio	-	-20.163	0.248	-
HCM Control Delay (s)	-	\$ 9012.8	12.7	0
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	48.5	1

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	2225.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			L		
Traffic Vol, veh/h	699	65	0	737	1097	123
Future Vol, veh/h	699	65	0	737	1097	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	76	76	88	88
Heavy Vehicles, %	9	9	1	11	14	14
Mvmt Flow	777	72	0	970	1247	140

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2287	1317	1387	0	-	0
Stage 1	1317	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.11	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.209	-	-	-
Pot Cap-1 Maneuver	~ 41	186	497	-	-	-
Stage 1	~ 242	-	-	-	-	-
Stage 2	~ 357	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 41	186	497	-	-	-
Mov Cap-2 Maneuver	~ 41	-	-	-	-	-
Stage 1	~ 242	-	-	-	-	-
Stage 2	~ 357	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s \$	8404	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	497	-	44	-	-
HCM Lane V/C Ratio	-	-	19.293	-	-
HCM Control Delay (s)	0	-	8404	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	103.7	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	892.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	1257	128	5	284	484	41
Future Vol, veh/h	1257	128	5	284	484	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	82	82	80	80
Heavy Vehicles, %	11	11	14	14	18	18
Mvmt Flow	1412	144	6	346	605	51

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1556	0	1842
Stage 1	-	-	-	-	1484
Stage 2	-	-	-	-	358
Critical Hdwy	-	-	4.24	-	6.58
Critical Hdwy Stg 1	-	-	-	-	5.58
Critical Hdwy Stg 2	-	-	-	-	5.58
Follow-up Hdwy	-	-	2.326	-	3.662
Pot Cap-1 Maneuver	-	-	393	-	~ 75
Stage 1	-	-	-	-	~ 191
Stage 2	-	-	-	-	673
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	393	-	~ 74
Mov Cap-2 Maneuver	-	-	-	-	~ 74
Stage 1	-	-	-	-	~ 191
Stage 2	-	-	-	-	660

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 3489.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	77	-	-	393	-
HCM Lane V/C Ratio	8.523	-	-	0.016	-
HCM Control Delay (s)	\$ 3489.1	-	-	14.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	75.7	-	-	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	104.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	222	30	0	144	12	5	96	10	39	310	17
Future Vol, veh/h	35	222	30	0	144	12	5	96	10	39	310	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	54	54	54	50	50	50	79	79	79
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	47	296	40	0	267	22	10	192	20	49	392	22

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	868	733	403	891	734	202	414	0	0	212	0	0
Stage 1	501	501	-	222	222	-	-	-	-	-	-	-
Stage 2	367	232	-	669	512	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	266	341	635	256	339	821	1145	-	-	1358	-	-
Stage 1	541	533	-	765	707	-	-	-	-	-	-	-
Stage 2	640	702	-	436	525	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	75	322	635	46	320	821	1145	-	-	1358	-	-
Mov Cap-2 Maneuver	75	322	-	46	320	-	-	-	-	-	-	-
Stage 1	536	508	-	757	700	-	-	-	-	-	-	-
Stage 2	382	695	-	162	500	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 326	55.9	0.4	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1145	-	-	239	336	1358	-	-
HCM Lane V/C Ratio	0.009	-	-	1.601	0.86	0.036	-	-
HCM Control Delay (s)	8.2	0	-	\$ 326	55.9	7.8	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	23.9	7.9	0.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	19	235	2	4	1	41	89	41	3	51	1
Future Vol, veh/h	19	19	235	2	4	1	41	89	41	3	51	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	58	58	58	91	91	91	72	72	72
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	28	28	351	3	7	2	45	98	45	4	71	1






















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	295	313	72	480	291	121	72	0	0	143	0	0
Stage 1	80	80	-	211	211	-	-	-	-	-	-	-
Stage 2	215	233	-	269	80	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	645	592	974	485	608	912	1528	-	-	1440	-	-
Stage 1	914	817	-	775	715	-	-	-	-	-	-	-
Stage 2	774	701	-	721	815	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	621	571	974	291	587	912	1528	-	-	1440	-	-
Mov Cap-2 Maneuver	621	571	-	291	587	-	-	-	-	-	-	-
Stage 1	885	815	-	750	692	-	-	-	-	-	-	-
Stage 2	740	679	-	444	813	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.3		12.8		1.8		0.4	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	895	473	1440	-	-
HCM Lane V/C Ratio	0.029	-	-	0.455	0.026	0.003	-	-
HCM Control Delay (s)	7.4	0	-	12.3	12.8	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.4	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

Existing Plus Approved Plus Project
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	384	7	43	658	53	5	26	50	274	132	61
Future Volume (veh/h)	7	384	7	43	658	53	5	26	50	274	132	61
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	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	8	422	8	47	723	58	6	33	64	308	148	69
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.78	0.78	0.78	0.89	0.89	0.89
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	17	714	14	77	755	61	14	58	113	152	217	101
Arrive On Green	0.01	0.43	0.43	0.05	0.47	0.47	0.01	0.10	0.10	0.09	0.18	0.18
Sat Flow, veh/h	1616	1659	31	1691	1623	130	1774	568	1101	1774	1203	561
Grp Volume(v), veh/h	8	0	430	47	0	781	6	0	97	308	0	217
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1668	1774	0	1764
Q Serve(g_s), s	0.3	0.0	11.3	1.6	0.0	25.1	0.2	0.0	3.2	5.0	0.0	6.7
Cycle Q Clear(g_c), s	0.3	0.0	11.3	1.6	0.0	25.1	0.2	0.0	3.2	5.0	0.0	6.7
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.32
Lane Grp Cap(c), veh/h	17	0	727	77	0	816	14	0	171	152	0	318
V/C Ratio(X)	0.48	0.00	0.59	0.61	0.00	0.96	0.43	0.00	0.57	2.02	0.00	0.68
Avail Cap(c_a), veh/h	139	0	789	145	0	818	152	0	664	152	0	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	12.7	27.3	0.0	15.0	28.8	0.0	24.9	26.7	0.0	22.3
Incr Delay (d2), s/veh	19.3	0.0	1.0	7.5	0.0	21.7	19.1	0.0	3.0	483.4	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	5.5	0.9	0.0	16.8	0.2	0.0	1.6	22.8	0.0	3.5
LnGrp Delay(d),s/veh	48.0	0.0	13.7	34.8	0.0	36.7	47.9	0.0	27.9	510.0	0.0	24.9
LnGrp LOS	D		B	C		D	D		C	F		C
Approach Vol, veh/h		438			828			103			525	
Approach Delay, s/veh		14.3			36.6			29.1			309.5	
Approach LOS		B			D			C			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	9.0	11.8	6.7	30.9	4.5	16.3	4.6	32.9				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.2	5.0	27.2	5.0	23.2	5.0	27.2				
Max Q Clear Time (g_c+I1), s	7.0	5.2	3.6	13.3	2.2	8.7	2.3	27.1				
Green Ext Time (p_c), s	0.0	0.4	0.0	2.0	0.0	0.9	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	106.7											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

Existing Plus Approved Plus Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	534	8	50	805	52	9	12	20	205	54	26
Future Volume (veh/h)	5	534	8	50	805	52	9	12	20	205	54	26
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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	593	9	52	830	54	11	15	25	223	59	28
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.97	0.97	0.97	0.79	0.79	0.79	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	13	666	10	86	729	47	136	169	213	384	76	34
Arrive On Green	0.01	0.40	0.40	0.05	0.44	0.44	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1616	1667	25	1691	1649	107	209	668	843	1051	301	134
Grp Volume(v), veh/h	6	0	602	52	0	884	51	0	0	310	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1721	0	0	1486	0	0
Q Serve(g_s), s	0.2	0.0	17.4	1.6	0.0	23.2	0.0	0.0	0.0	9.1	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	17.4	1.6	0.0	23.2	1.2	0.0	0.0	10.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	13	0	676	86	0	777	518	0	0	493	0	0
V/C Ratio(X)	0.47	0.00	0.89	0.61	0.00	1.14	0.10	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	154	0	748	161	0	777	757	0	0	714	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.9	0.0	14.7	24.4	0.0	14.6	15.1	0.0	0.0	18.4	0.0	0.0
Incr Delay (d2), s/veh	23.9	0.0	12.1	6.8	0.0	77.5	0.1	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	10.3	0.9	0.0	27.7	0.6	0.0	0.0	4.4	0.0	0.0
LnGrp Delay(d),s/veh	49.8	0.0	26.8	31.2	0.0	92.2	15.2	0.0	0.0	19.7	0.0	0.0
LnGrp LOS	D		C	C		F	B			B		
Approach Vol, veh/h		608			936			51			310	
Approach Delay, s/veh		27.0			88.8			15.2			19.7	
Approach LOS		C			F			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		19.1	6.7	26.8		19.1	4.4	29.0				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	23.2		21.2	5.0	23.2				
Max Q Clear Time (g_c+1), s		3.2	3.6	19.4		12.3	2.2	25.2				
Green Ext Time (p_c), s		0.1	0.0	1.3		1.1	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			55.8									
HCM 2010 LOS			E									

Intersection						
Int Delay, s/veh	108					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	↗
Traffic Vol, veh/h	277	984	562	0	9	697
Future Vol, veh/h	277	984	562	0	9	697
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	82	82	87	87
Heavy Vehicles, %	11	11	5	5	2	2
Mvmt Flow	311	1106	685	0	10	801

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	685	0	-	0	2413 685
Stage 1	-	-	-	-	685 -
Stage 2	-	-	-	-	1728 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	868	-	-	-	36 ~ 448
Stage 1	-	-	-	-	500 -
Stage 2	-	-	-	-	157 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	868	-	-	-	23 ~ 448
Mov Cap-2 Maneuver	-	-	-	-	23 -
Stage 1	-	-	-	-	321 -
Stage 2	-	-	-	-	157 -

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	\$ 383.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	868	-	-	-	23	448
HCM Lane V/C Ratio	0.359	-	-	-	0.45	1.788
HCM Control Delay (s)	11.4	-	-	-	254.5	385.1
HCM Lane LOS	B	-	-	-	F	F
HCM 95th %tile Q(veh)	1.6	-	-	-	1.3	50.1

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	316
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	100	514	433	353	541	358
Future Vol, veh/h	100	514	433	353	541	358
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	559	471	384	588	389
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	143	345.2	408.7
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	55%	16%	0%
Vol Thru, %	45%	0%	60%
Vol Right, %	0%	84%	40%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	786	614	899
LT Vol	433	100	0
Through Vol	353	0	541
RT Vol	0	514	358
Lane Flow Rate	854	667	977
Geometry Grp	1	1	1
Degree of Util (X)	1.695	1.217	1.844
Departure Headway (Hd)	8.945	8.215	8.377
Convergence, Y/N	Yes	Yes	Yes
Cap	419	447	440
Service Time	6.945	6.215	6.377
HCM Lane V/C Ratio	2.038	1.492	2.22
HCM Control Delay	345.2	143	408.7
HCM Lane LOS	F	F	F
HCM 95th-tile Q	41.2	21.3	51.1

Intersection												
Intersection Delay, s/veh	35.4											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	402	559	200	391	200	388	0	212	0	0	0
Future Vol, veh/h	0	402	559	200	391	200	388	0	212	0	0	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	437	608	217	425	217	422	0	230	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	450.4	327.9	161.1	0
HCM LOS	F	F	F	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	0%	25%	0%
Vol Thru, %	0%	42%	49%	100%
Vol Right, %	35%	58%	25%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	600	961	791	0
LT Vol	388	0	200	0
Through Vol	0	402	391	0
RT Vol	212	559	200	0
Lane Flow Rate	652	1045	860	0
Geometry Grp	1	1	1	1
Degree of Util (X)	1.259	1.939	1.655	0
Departure Headway (Hd)	8.674	8.32	8.969	15.647
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	424	449	413	0
Service Time	6.674	6.32	6.969	13.647
HCM Lane V/C Ratio	1.538	2.327	2.082	0
HCM Control Delay	161.1	450.4	327.9	18.6
HCM Lane LOS	F	F	F	N
HCM 95th-tile Q	22.2	56.4	39.2	0

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)













1: I-5 SB Ramps & Sperry Ave

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↗					↖	↗	
Traffic Volume (vph)	0	750	11	145	65	0	0	0	0	646	4	63
Future Volume (vph)	0	750	11	145	65	0	0	0	0	646	4	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		1.00		1.00	1.00					1.00	0.97	
Flt Protected		1.00		0.95	0.98					0.95	0.96	
Satd. Flow (prot)		3541		1406	1488					1394	1384	
Flt Permitted		1.00		0.95	0.98					0.95	0.96	
Satd. Flow (perm)		3541		1406	1488					1394	1384	
Peak-hour factor, PHF	0.68	0.68	0.68	0.76	0.76	0.76	0.25	0.25	0.25	0.88	0.88	0.88
Adj. Flow (vph)	0	1103	16	191	86	0	0	0	0	734	5	72
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	1118	0	136	141	0	0	0	0	411	393	0
Confl. Peds. (#/hr)						1						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	1%	50%	22%	17%	0%	0%	0%	0%	23%	25%	17%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		41.7		15.2	15.2					48.9	48.9	
Effective Green, g (s)		41.7		15.2	15.2					48.9	48.9	
Actuated g/C Ratio		0.35		0.13	0.13					0.41	0.41	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1230		178	188					568	563	
v/s Ratio Prot		c0.32		c0.10	0.09					c0.29	0.28	
v/s Ratio Perm												
v/c Ratio		0.91		0.76	0.75					0.72	0.70	
Uniform Delay, d1		37.3		50.7	50.6					29.9	29.5	
Progression Factor		1.00		0.51	0.51					1.00	1.00	
Incremental Delay, d2		9.9		17.2	15.1					7.8	7.1	
Delay (s)		47.3		43.2	41.1					37.7	36.5	
Level of Service		D		D	D					D	D	
Approach Delay (s)		47.3			42.2			0.0			37.1	
Approach LOS		D			D			A			D	
Intersection Summary												
HCM 2000 Control Delay			42.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			14.2			
Intersection Capacity Utilization			58.6%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												






























HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)
 2: I-5 NB Ramps & Sperry Ave Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↑↑	↗		↑	↗↗			
Traffic Volume (vph)	255	1141	0	0	189	833	21	10	787	0	0	0
Future Volume (vph)	255	1141	0	0	189	833	21	10	787	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.99			1.00	1.00		0.97	1.00			
Satd. Flow (prot)		3164			2959	1468		1837	2450			
Flt Permitted		0.99			1.00	1.00		0.97	1.00			
Satd. Flow (perm)		3164			2959	1468		1837	2450			
Peak-hour factor, PHF	0.84	0.84	0.84	0.90	0.90	0.90	0.82	0.82	0.82	0.25	0.25	0.25
Adj. Flow (vph)	304	1358	0	0	210	926	26	12	960	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	0	1662	0	0	210	926	0	38	917	0	0	0
Heavy Vehicles (%)	0%	16%	0%	0%	22%	10%	0%	0%	16%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2 4!	4	4!	6			
Permitted Phases						6			4			
Actuated Green, G (s)		64.8			27.9	109.8		12.0	39.9			
Effective Green, g (s)		64.8			27.9	109.8		12.0	39.9			
Actuated g/C Ratio		0.54			0.23	0.91		0.10	0.33			
Clearance Time (s)		5.1			5.1			5.1	5.1			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		1708			687	1468		183	918			
v/s Ratio Prot		c0.53			0.07	0.43		0.02	c0.23			
v/s Ratio Perm						0.20			0.14			
v/c Ratio		0.97			0.31	0.63		0.21	1.00			
Uniform Delay, d1		26.8			38.0	1.0		49.6	40.0			
Progression Factor		1.26			1.00	1.00		1.00	1.00			
Incremental Delay, d2		11.0			0.3	0.9		0.6	29.1			
Delay (s)		44.8			38.3	1.9		50.2	69.1			
Level of Service		D			D	A		D	E			
Approach Delay (s)		44.8			8.6			68.4			0.0	
Approach LOS		D			A			E			A	
Intersection Summary												
HCM 2000 Control Delay			40.2				HCM 2000 Level of Service		D			
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)		15.3			
Intersection Capacity Utilization			113.3%				ICU Level of Service		H			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

3: Sperry Ave & Rogers Rd

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 		 				 	
Traffic Volume (vph)	546	1168	214	76	546	164	188	3	60	231	0	288
Future Volume (vph)	546	1168	214	76	546	164	188	3	60	231	0	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.91	0.95
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3213	2959	1583	1770	3139	1547	3433	1863	1583	1649	1427	1421
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3213	2959	1583	1770	3139	1547	3433	1863	1583	1649	1427	1421
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.92	0.80
Adj. Flow (vph)	628	1343	233	83	593	178	204	3	65	289	0	360
RTOR Reduction (vph)	0	0	105	0	0	136	0	0	58	0	170	81
Lane Group Flow (vph)	628	1343	128	83	593	42	204	3	7	225	45	128
Confl. Peds. (#/hr)	1											
Heavy Vehicles (%)	9%	22%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	30.0	50.6	50.6	6.0	24.6	24.6	11.5	11.5	11.5	15.0	15.0	45.0
Effective Green, g (s)	30.0	50.6	50.6	6.0	24.6	24.6	11.5	11.5	11.5	15.0	15.0	45.0
Actuated g/C Ratio	0.29	0.48	0.48	0.06	0.24	0.24	0.11	0.11	0.11	0.14	0.14	0.43
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	921	1431	765	101	738	363	377	204	174	236	204	699
v/s Ratio Prot	0.20	c0.45		c0.05	0.19		c0.06	0.00		c0.14	0.03	0.05
v/s Ratio Perm			0.08			0.03			0.00			0.04
v/c Ratio	0.68	0.94	0.17	0.82	0.80	0.12	0.54	0.01	0.04	0.95	0.22	0.18
Uniform Delay, d1	33.1	25.5	15.2	48.8	37.7	31.4	44.1	41.5	41.6	44.5	39.6	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	12.3	0.2	39.3	6.3	0.1	1.6	0.0	0.1	45.4	0.5	0.1
Delay (s)	35.2	37.9	15.4	88.0	44.1	31.6	45.6	41.5	41.7	89.8	40.2	18.6
Level of Service	D	D	B	F	D	C	D	D	D	F	D	B
Approach Delay (s)		34.7			45.7			44.7			50.4	
Approach LOS		C			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			40.3	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			104.6	Sum of lost time (s)				23.5				
Intersection Capacity Utilization			66.7%	ICU Level of Service				C				
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗		↖↗	↖↗	↖				↖		↖
Traffic Volume (veh/h)	132	323	0	1	553	22	0	0	0	14	0	76
Future Volume (veh/h)	132	323	0	1	553	22	0	0	0	14	0	76
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	150	367	0	1	700	28				16	0	84
Adj No. of Lanes	2	2	0	2	2	1				1	0	1
Peak Hour Factor	0.88	0.88	0.88	0.79	0.79	0.79				0.90	0.90	0.90
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	247	1783	0	8	1478	530				179	0	124
Arrive On Green	0.11	0.54	0.00	0.00	0.43	0.43				0.13	0.00	0.13
Sat Flow, veh/h	2167	3399	0	3510	3471	1245				1403	0	973
Grp Volume(v), veh/h	150	367	0	1	700	28				16	0	84
Grp Sat Flow(s),veh/h/ln1083	1656	0	1755	1736	1245					1403	0	973
Q Serve(g_s), s	2.9	2.5	0.0	0.0	6.4	0.6				0.4	0.0	3.6
Cycle Q Clear(g_c), s	2.9	2.5	0.0	0.0	6.4	0.6				0.4	0.0	3.6
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	247	1783	0	8	1478	530				179	0	124
V/C Ratio(X)	0.61	0.21	0.00	0.13	0.47	0.05				0.09	0.00	0.68
Avail Cap(c_a), veh/h	1518	3743	0	2459	3922	1407				1046	0	726
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	18.7	5.3	0.0	22.0	9.1	7.5				17.0	0.0	18.4
Incr Delay (d2), s/veh	2.4	0.1	0.0	6.9	0.5	0.1				0.2	0.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln1.0	1.2	0.0	0.0	3.1	0.6					0.2	0.0	2.1
LnGrp Delay(d),s/veh	21.0	5.4	0.0	29.0	9.6	7.6				17.2	0.0	24.6
LnGrp LOS	C	A		C	A	A				B		C
Approach Vol, veh/h		517			729						100	
Approach Delay, s/veh		10.0			9.6						23.5	
Approach LOS		A			A						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	4.6	29.5		10.2	9.6	24.5						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	31.0	50.0		33.0	31.0	50.0						
Max Q Clear Time (g_c+I), s	12.0	4.5		5.6	4.9	8.4						
Green Ext Time (p_c), s	0.0	4.8		0.3	0.5	10.4						
Intersection Summary												
HCM 2010 Ctrl Delay			10.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗		↖	↖	↖	↖↗	↖		↖↗	↖	↖
Traffic Volume (veh/h)	63	297	33	12	393	104	274	403	91	193	140	333
Future Volume (veh/h)	63	297	33	12	393	104	274	403	91	193	140	333
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1834	1900	1900	1792	1863	1900	1810	1900	1827	1900	1863
Adj Flow Rate, veh/h	73	345	38	16	510	135	347	510	115	247	179	427
Adj No. of Lanes	2	2	0	1	1	1	2	1	0	2	1	1
Peak Hour Factor	0.86	0.86	0.86	0.77	0.77	0.77	0.79	0.79	0.79	0.78	0.78	0.78
Percent Heavy Veh, %	6	4	4	0	6	2	0	5	5	4	0	2
Cap, veh/h	187	1070	117	40	545	482	404	497	112	282	600	500
Arrive On Green	0.06	0.34	0.34	0.02	0.30	0.30	0.12	0.35	0.35	0.08	0.32	0.32
Sat Flow, veh/h	3312	3161	345	1810	1792	1583	3510	1430	322	3375	1900	1583
Grp Volume(v), veh/h	73	189	194	16	510	135	347	0	625	247	179	427
Grp Sat Flow(s),veh/h/ln	1656	1742	1764	1810	1792	1583	1755	0	1753	1688	1900	1583
Q Serve(g_s), s	1.9	7.1	7.2	0.8	24.5	5.8	8.6	0.0	30.8	6.4	6.3	22.4
Cycle Q Clear(g_c), s	1.9	7.1	7.2	0.8	24.5	5.8	8.6	0.0	30.8	6.4	6.3	22.4
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	187	590	597	40	545	482	404	0	609	282	600	500
V/C Ratio(X)	0.39	0.32	0.32	0.40	0.94	0.28	0.86	0.00	1.03	0.88	0.30	0.85
Avail Cap(c_a), veh/h	224	590	597	122	552	487	404	0	609	282	600	500
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	21.8	21.8	42.8	30.0	23.5	38.5	0.0	28.9	40.2	22.9	28.4
Incr Delay (d2), s/veh	0.5	0.7	0.7	13.3	24.0	0.7	16.1	0.0	43.5	24.4	0.3	13.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.5	3.6	0.5	15.7	2.6	5.1	0.0	22.1	3.9	3.3	11.7
LnGrp Delay(d),s/veh	40.9	22.4	22.5	56.1	54.1	24.1	54.6	0.0	72.4	64.6	23.2	41.9
LnGrp LOS	D	C	C	E	D	C	D		F	E	C	D
Approach Vol, veh/h		456			661			972			853	
Approach Delay, s/veh		25.4			48.0			66.1			44.6	
Approach LOS		C			D			E			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	6.2	35.5	14.4	32.6	9.2	32.5	11.6	35.4				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	27.3	* 10	28.0	* 6	27.3	* 7.4	30.8				
Max Q Clear Time (g_c+1), s	12.8	9.2	10.6	24.4	3.9	26.5	8.4	32.8				
Green Ext Time (p_c), s	0.0	3.5	0.0	1.0	0.0	0.4	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			49.5									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	
Traffic Volume (veh/h)	68	575	27	41	547	57	58	134	81	129	130	169
Future Volume (veh/h)	68	575	27	41	547	57	58	134	81	129	130	169
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	83	701	33	53	701	73	102	235	142	219	220	286
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.82	0.82	0.82	0.78	0.78	0.78	0.57	0.57	0.57	0.59	0.59	0.59
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	130	1035	49	100	912	95	167	370	223	270	253	330
Arrive On Green	0.07	0.30	0.30	0.06	0.29	0.29	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1810	3400	160	1757	3148	328	888	1092	660	1009	749	973
Grp Volume(v), veh/h	83	361	373	53	383	391	102	0	377	219	0	506
Grp Sat Flow(s),veh/h/ln	1810	1750	1809	1757	1722	1754	888	0	1753	1009	0	1722
Q Serve(g_s), s	2.9	11.7	11.7	1.9	13.2	13.2	4.1	0.0	11.8	10.2	0.0	17.9
Cycle Q Clear(g_c), s	2.9	11.7	11.7	1.9	13.2	13.2	22.0	0.0	11.8	22.0	0.0	17.9
Prop In Lane	1.00		0.09	1.00		0.19	1.00		0.38	1.00		0.57
Lane Grp Cap(c), veh/h	130	533	551	100	499	508	167	0	593	270	0	583
V/C Ratio(X)	0.64	0.68	0.68	0.53	0.77	0.77	0.61	0.00	0.64	0.81	0.00	0.87
Avail Cap(c_a), veh/h	167	606	626	162	596	607	167	0	593	270	0	583
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.3	19.8	19.8	29.8	21.1	21.1	31.4	0.0	18.1	28.8	0.0	20.1
Incr Delay (d2), s/veh	5.2	3.0	3.0	4.3	5.7	5.7	6.4	0.0	2.2	17.0	0.0	13.2
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	1.6	6.1	6.3	1.0	7.1	7.2	2.1	0.0	6.0	5.2	0.0	10.6
LnGrp Delay(d),s/veh	34.5	22.8	22.8	34.1	26.8	26.8	37.7	0.0	20.3	45.8	0.0	33.3
LnGrp LOS	C	C	C	C	C	C	D		C	D		C
Approach Vol, veh/h		817			827			479			725	
Approach Delay, s/veh		24.0			27.3			24.0			37.1	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	26.3		28.5	11.2	25.3		28.5				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.5	22.5		22.0	6.0	22.5		22.0				
Max Q Clear Time (g_c+1), s	13.5	13.7		24.0	4.9	15.2		24.0				
Green Ext Time (p_c), s	0.0	3.7		0.0	0.0	3.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			28.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	530	18	142	528	133	32	158	164	153	126	41
Future Volume (veh/h)	119	530	18	142	528	133	32	158	164	153	126	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1814	1900	1792	1827	1845	1900	1827	1827	1900	1863	1776
Adj Flow Rate, veh/h	155	688	23	163	607	153	56	277	288	232	191	62
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.77	0.77	0.77	0.87	0.87	0.87	0.57	0.57	0.57	0.66	0.66	0.66
Percent Heavy Veh, %	0	4	4	6	4	3	0	4	4	0	2	7
Cap, veh/h	190	920	31	199	938	418	462	728	618	336	742	592
Arrive On Green	0.11	0.27	0.27	0.12	0.27	0.27	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1810	3401	114	1707	3471	1546	1142	1827	1552	859	1863	1485
Grp Volume(v), veh/h	155	348	363	163	607	153	56	277	288	232	191	62
Grp Sat Flow(s),veh/h/ln	1810	1723	1791	1707	1736	1546	1142	1827	1552	859	1863	1485
Q Serve(g_s), s	7.0	15.5	15.6	7.8	13.0	6.7	2.9	9.0	11.5	22.0	5.8	2.2
Cycle Q Clear(g_c), s	7.0	15.5	15.6	7.8	13.0	6.7	8.7	9.0	11.5	31.1	5.8	2.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	466	484	199	938	418	462	728	618	336	742	592
V/C Ratio(X)	0.81	0.75	0.75	0.82	0.65	0.37	0.12	0.38	0.47	0.69	0.26	0.10
Avail Cap(c_a), veh/h	215	554	576	325	1322	589	469	739	628	341	754	601
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	36.8	28.0	28.0	36.2	27.1	24.8	19.8	17.9	18.7	28.9	16.9	15.9
Incr Delay (d2), s/veh	19.0	6.5	6.3	8.1	1.6	1.1	0.2	0.7	1.2	7.5	0.4	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	4.5	8.2	8.5	4.1	6.4	3.0	0.9	4.7	5.1	5.9	3.1	0.9
LnGrp Delay(d),s/veh	55.8	34.5	34.3	44.3	28.7	26.0	20.1	18.6	19.8	36.4	17.3	16.0
LnGrp LOS	E	C	C	D	C	C	C	B	B	D	B	B
Approach Vol, veh/h		866			923			621			485	
Approach Delay, s/veh		38.2			31.0			19.3			26.3	
Approach LOS		D			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.8	28.7		39.5	15.8	28.7		39.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	16.0	27.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+I), s	19.8	17.6		33.1	9.0	15.0		13.5				
Green Ext Time (p_c), s	0.2	4.5		0.4	0.0	7.0		5.6				
Intersection Summary												
HCM 2010 Ctrl Delay			29.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	324	34	12	381	28	56	84	16	6	71	207
Future Volume (veh/h)	238	324	34	12	381	28	56	84	16	6	71	207
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	283	386	40	14	443	33	76	114	22	9	106	309
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.74	0.74	0.74	0.67	0.67	0.67
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	430	1537	158	548	856	783	219	297	48	77	141	388
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	913	3160	326	975	1759	1610	375	916	149	11	434	1198
Grp Volume(v), veh/h	283	210	216	14	443	33	212	0	0	424	0	0
Grp Sat Flow(s),veh/h/ln	913	1727	1759	975	1759	1610	1440	0	0	1644	0	0
Q Serve(g_s), s	15.5	3.6	3.6	0.4	8.7	0.5	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	24.1	3.6	3.6	4.0	8.7	0.5	4.9	0.0	0.0	11.7	0.0	0.0
Prop In Lane	1.00		0.19	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	430	840	856	548	856	783	564	0	0	606	0	0
V/C Ratio(X)	0.66	0.25	0.25	0.03	0.52	0.04	0.38	0.00	0.00	0.70	0.00	0.00
Avail Cap(c_a), veh/h	430	840	856	548	856	783	837	0	0	926	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.1	7.5	7.5	8.7	8.8	6.8	13.0	0.0	0.0	15.4	0.0	0.0
Incr Delay (d2), s/veh	4.9	0.3	0.3	0.0	1.1	0.0	0.4	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	1.8	1.8	0.1	4.4	0.2	2.3	0.0	0.0	5.5	0.0	0.0
LnGrp Delay(d),s/veh	22.1	7.9	7.9	8.8	9.9	6.8	13.4	0.0	0.0	16.9	0.0	0.0
LnGrp LOS	C	A	A	A	A	A	B			B		
Approach Vol, veh/h		709			490			212			424	
Approach Delay, s/veh		13.5			9.7			13.4			16.9	
Approach LOS		B			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.0		21.2		29.0		21.2				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		24.4		26.1		24.4		26.1				
Max Q Clear Time (g_c+1), s		26.1		6.9		10.7		13.7				
Green Ext Time (p_c), s		0.0		1.3		4.3		2.4				
Intersection Summary												
HCM 2010 Ctrl Delay				13.3								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

9: SR-33 & Sperry Ave

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	164	62	9	32	12	185	576	76	32	296	266
Future Volume (vph)	140	164	62	9	32	12	185	576	76	32	296	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1641	1771		1583	1668		1736	1750		1805	1696	1468
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1641	1771		1583	1668		1736	1750		1805	1696	1468
Peak-hour factor, PHF	0.87	0.87	0.87	0.67	0.67	0.67	0.76	0.76	0.76	0.81	0.81	0.81
Adj. Flow (vph)	161	189	71	13	48	18	243	758	100	40	365	328
RTOR Reduction (vph)	0	16	0	0	15	0	0	5	0	0	0	207
Lane Group Flow (vph)	161	244	0	13	51	0	243	853	0	40	365	121
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	10%	4%	0%	14%	9%	8%	4%	6%	12%	0%	12%	10%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	15.6	15.6		4.5	4.5		14.7	43.7		2.8	31.8	31.8
Effective Green, g (s)	15.6	15.6		4.5	4.5		14.7	43.7		2.8	31.8	31.8
Actuated g/C Ratio	0.18	0.18		0.05	0.05		0.17	0.51		0.03	0.37	0.37
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	297	320		82	87		296	888		58	626	542
v/s Ratio Prot	0.10	c0.14		0.01	c0.03		c0.14	c0.49		0.02	0.22	
v/s Ratio Perm												0.08
v/c Ratio	0.54	0.76		0.16	0.58		0.82	0.96		0.69	0.58	0.22
Uniform Delay, d1	32.0	33.5		39.0	39.9		34.4	20.4		41.2	21.8	18.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.0	10.3		0.9	9.6		16.5	22.0		29.0	3.9	1.0
Delay (s)	34.0	43.8		39.9	49.5		50.9	42.4		70.2	25.8	19.6
Level of Service	C	D		D	D		D	D		E	C	B
Approach Delay (s)		40.1			47.9			44.3			25.4	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM 2000 Control Delay			37.7				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			86.1				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			65.9%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑	↗	↖	↑↑	
Traffic Volume (veh/h)	35	204	81	462	411	62	197	497	359	72	552	94
Future Volume (veh/h)	35	204	81	462	411	62	197	497	359	72	552	94
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1667	1597	1597	1900
Adj Flow Rate, veh/h	42	243	96	600	534	81	246	621	449	100	767	131
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.84	0.84	0.84	0.77	0.77	0.77	0.80	0.80	0.80	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	71	260	103	664	568	86	271	1112	771	121	801	137
Arrive On Green	0.04	0.20	0.20	0.19	0.36	0.36	0.12	0.35	0.35	0.08	0.31	0.31
Sat Flow, veh/h	1774	1272	502	3442	1581	240	1587	3167	1417	1521	2593	443
Grp Volume(v), veh/h	42	0	339	600	0	615	246	621	449	100	449	449
Grp Sat Flow(s),veh/h/ln	1774	0	1774	1721	0	1820	1587	1583	1417	1521	1517	1519
Q Serve(g_s), s	2.5	0.0	20.0	18.2	0.0	34.8	11.0	16.9	5.8	6.9	30.9	30.9
Cycle Q Clear(g_c), s	2.5	0.0	20.0	18.2	0.0	34.8	11.0	16.9	5.8	6.9	30.9	30.9
Prop In Lane	1.00		0.28	1.00		0.13	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	71	0	363	664	0	654	271	1112	771	121	469	469
V/C Ratio(X)	0.59	0.00	0.93	0.90	0.00	0.94	0.91	0.56	0.58	0.83	0.96	0.96
Avail Cap(c_a), veh/h	100	0	363	937	0	769	272	1112	771	186	469	469
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	50.3	0.0	41.6	42.0	0.0	33.0	25.6	27.9	5.7	48.3	36.1	36.1
Incr Delay (d2), s/veh	2.9	0.0	30.3	7.4	0.0	16.8	30.9	0.4	0.8	9.7	30.7	30.7
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	1.3	0.0	12.9	9.3	0.0	20.5	9.4	7.4	4.8	3.2	17.0	17.0
LnGrp Delay(d),s/veh	53.1	0.0	72.0	49.4	0.0	49.8	56.5	28.3	6.5	58.0	66.8	66.8
LnGrp LOS	D		E	D		D	E	C	A	E	E	E
Approach Vol, veh/h		381			1215			1316			998	
Approach Delay, s/veh		69.9			49.6			26.1			65.9	
Approach LOS		E			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	25.7	26.0	12.5	42.3	8.3	43.5	17.0	37.8				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 22	13.0	32.9	6.0	* 45	13.0	32.9				
Max Q Clear Time (g_c+20), s	20.2	22.0	8.9	18.9	4.5	36.8	13.0	32.9				
Green Ext Time (p_c), s	0.4	0.0	0.0	0.6	0.0	1.1	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			47.8									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	302	33	171	416	61	89	832	75	300	560	127
Future Volume (veh/h)	136	302	33	171	416	61	89	832	75	300	560	127
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		1.00	1.00		0.98
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	1782	1900	1845	1743	1900	1827	1881	1429	1743	1871	1900
Adj Flow Rate, veh/h	181	403	44	225	547	80	105	979	88	390	727	165
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.85	0.85	0.85	0.77	0.77	0.77
Percent Heavy Veh, %	0	7	7	3	9	0	4	1	33	9	1	1
Cap, veh/h	254	481	52	339	582	525	242	1042	354	471	910	206
Arrive On Green	0.08	0.30	0.30	0.11	0.33	0.33	0.06	0.29	0.29	0.09	0.32	0.32
Sat Flow, veh/h	1810	1577	172	1757	1743	1573	1740	3574	1213	3221	2866	650
Grp Volume(v), veh/h	181	0	447	225	547	80	105	979	88	390	451	441
Grp Sat Flow(s),veh/h/ln	1810	0	1749	1757	1743	1573	1740	1787	1213	1610	1777	1738
Q Serve(g_s), s	5.7	0.0	20.0	7.2	25.5	3.0	3.5	22.4	4.6	7.2	19.4	19.5
Cycle Q Clear(g_c), s	5.7	0.0	20.0	7.2	25.5	3.0	3.5	22.4	4.6	7.2	19.4	19.5
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	254	0	533	339	582	525	242	1042	354	471	564	552
V/C Ratio(X)	0.71	0.00	0.84	0.66	0.94	0.15	0.43	0.94	0.25	0.83	0.80	0.80
Avail Cap(c_a), veh/h	254	0	570	535	813	734	304	1044	354	471	564	552
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	0.00	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	21.4	0.0	27.2	19.5	27.1	19.6	20.9	29.0	22.7	21.9	26.2	26.2
Incr Delay (d2), s/veh	7.7	0.0	9.4	0.8	12.9	0.0	0.5	15.3	0.1	10.9	7.4	7.6
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	8.4	0.0	10.9	3.5	14.4	1.3	1.7	13.2	1.6	3.8	10.7	10.5
LnGrp Delay(d),s/veh	29.1	0.0	36.6	20.3	40.0	19.6	21.4	44.3	22.8	32.9	33.6	33.7
LnGrp LOS	C		D	C	D	B	C	D	C	C	C	C
Approach Vol, veh/h		628			852			1172			1282	
Approach Delay, s/veh		34.4			32.9			40.6			33.4	
Approach LOS		C			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	32.6	11.2	29.3	13.1	30.2	9.0	31.5				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	39.1	7.2	24.5	18.5	27.3	8.0	23.7					
Max Q Clear Time (g_c+1), s	27.5	9.2	24.4	9.2	22.0	5.5	21.5					
Green Ext Time (p_c), s	0.0	0.5	0.0	0.0	0.0	0.4	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			35.6									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	526	256	11	100	148	113	793	0	285	552	0
Future Volume (veh/h)	0	526	256	11	100	148	113	793	0	285	552	0
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	1863	1863	1863	1863	1667	1667	1667	1597	1597	1900
Adj Flow Rate, veh/h	0	822	400	15	141	208	147	1030	0	407	789	0
Adj No. of Lanes	1	2	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.64	0.64	0.64	0.71	0.71	0.71	0.77	0.77	0.77	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	80	842	376	83	443	376	178	1063	475	405	1487	0
Arrive On Green	0.00	0.24	0.24	0.24	0.24	0.24	0.11	0.34	0.00	0.27	0.49	0.00
Sat Flow, veh/h	1028	3539	1583	455	1863	1583	1587	3167	1417	1521	3113	0
Grp Volume(v), veh/h	0	822	400	15	141	208	147	1030	0	407	789	0
Grp Sat Flow(s),veh/h/ln	1028	1770	1583	455	1863	1583	1587	1583	1417	1521	1517	0
Q Serve(g_s), s	0.0	20.8	21.4	0.6	5.6	10.4	8.2	28.8	0.0	24.0	16.1	0.0
Cycle Q Clear(g_c), s	0.0	20.8	21.4	21.4	5.6	10.4	8.2	28.8	0.0	24.0	16.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	80	842	376	83	443	376	178	1063	475	405	1487	0
V/C Ratio(X)	0.00	0.98	1.06	0.18	0.32	0.55	0.83	0.97	0.00	1.00	0.53	0.00
Avail Cap(c_a), veh/h	80	842	376	83	443	376	293	1063	475	405	1487	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	34.1	34.3	44.9	28.3	30.1	39.1	29.4	0.0	33.0	15.8	0.0
Incr Delay (d2), s/veh	0.0	25.3	63.9	1.0	0.4	1.7	9.5	20.5	0.0	45.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.1	16.1	0.4	2.9	4.7	4.1	15.6	0.0	15.2	6.8	0.0
LnGrp Delay(d),s/veh	0.0	59.4	98.2	46.0	28.7	31.8	48.6	49.9	0.0	78.6	16.2	0.0
LnGrp LOS		E	F	D	C	C	D	D		F	B	
Approach Vol, veh/h		1222			364			1177			1196	
Approach Delay, s/veh		72.1			31.2			49.8			37.4	
Approach LOS		E			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.0	36.0		26.0	14.1	49.9		26.0				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	24.0	30.2		21.4	16.6	37.6		21.4				
Max Q Clear Time (g_c+20), s	20.0	30.8		23.4	10.2	18.1		23.4				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.2	5.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			51.2									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	159	83	52	272	32	579	39	193	2	1	0
Future Volume (veh/h)	14	159	83	52	272	32	579	39	193	2	1	0
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		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1338	1520	1744	1900	1242	1900	1357	1900	1520	1900
Adj Flow Rate, veh/h	20	224	117	75	394	46	998	67	333	3	1	0
Adj No. of Lanes	1	2	1	1	1	0	2	1	1	0	1	0
Peak Hour Factor	0.71	0.71	0.71	0.69	0.69	0.69	0.58	0.58	0.58	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	42	25	10	10	53	0	40	100	100	100
Cap, veh/h	41	860	794	90	425	50	1069	886	537	7	2	0
Arrive On Green	0.02	0.24	0.24	0.06	0.28	0.28	0.47	0.47	0.47	0.01	0.01	0.00
Sat Flow, veh/h	1810	3610	1109	1448	1529	179	2294	1900	1153	1099	366	0
Grp Volume(v), veh/h	20	224	117	75	0	440	998	67	333	4	0	0
Grp Sat Flow(s),veh/h/ln	1810	1805	1109	1448	0	1708	1147	1900	1153	1465	0	0
Q Serve(g_s), s	0.9	4.0	2.8	4.1	0.0	19.8	32.5	1.5	17.2	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.9	4.0	2.8	4.1	0.0	19.8	32.5	1.5	17.2	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	0.75		0.00
Lane Grp Cap(c), veh/h	41	860	794	90	0	474	1069	886	537	9	0	0
V/C Ratio(X)	0.49	0.26	0.15	0.84	0.00	0.93	0.93	0.08	0.62	0.43	0.00	0.00
Avail Cap(c_a), veh/h	114	894	805	141	0	481	1122	929	564	111	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.2	24.5	3.9	36.7	0.0	27.8	20.0	11.7	15.9	39.2	0.0	0.0
Incr Delay (d2), s/veh	8.9	0.2	0.1	21.1	0.0	24.2	13.5	0.0	1.9	28.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.0	2.2	2.2	0.0	12.5	12.3	0.8	5.7	0.2	0.0	0.0
LnGrp Delay(d),s/veh	47.2	24.7	4.0	57.9	0.0	52.0	33.4	11.7	17.8	67.2	0.0	0.0
LnGrp LOS	D	C	A	E		D	C	B	B	E		
Approach Vol, veh/h		361			515			1398			4	
Approach Delay, s/veh		19.2			52.9			28.7			67.2	
Approach LOS		B			D			C			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		41.4	9.4	23.4		5.0	6.3	26.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.7	7.7	19.6		6.0	5.0	22.3				
Max Q Clear Time (g_c+I1), s		34.5	6.1	6.0		2.2	2.9	21.8				
Green Ext Time (p_c), s		2.4	0.0	1.6		0.0	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			32.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↔	↔	↑↑	↔	↔↔	↑↑	↔	↔	↑↑	↔
Traffic Volume (veh/h)	97	52	0	50	427	27	0	790	7	104	481	0
Future Volume (veh/h)	97	52	0	50	427	27	0	790	7	104	481	0
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	1863	1319	1900	1667	1900	1863	1520	1743	1776	1900
Adj Flow Rate, veh/h	388	208	0	79	678	43	0	963	9	196	908	0
Adj No. of Lanes	2	2	1	1	2	1	2	2	1	1	2	1
Peak Hour Factor	0.25	0.25	0.25	0.63	0.63	0.63	0.82	0.82	0.82	0.53	0.53	0.53
Percent Heavy Veh, %	2	2	2	44	0	14	0	2	25	9	7	0
Cap, veh/h	438	946	423	91	768	301	4	1113	500	228	1681	805
Arrive On Green	0.13	0.27	0.00	0.07	0.21	0.21	0.00	0.31	0.31	0.14	0.50	0.00
Sat Flow, veh/h	3442	3539	1583	1257	3610	1417	3510	3539	1292	1660	3374	1615
Grp Volume(v), veh/h	388	208	0	79	678	43	0	963	9	196	908	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1257	1805	1417	1755	1770	1292	1660	1687	1615
Q Serve(g_s), s	9.6	4.0	0.0	5.4	15.7	2.1	0.0	22.2	0.4	10.0	16.0	0.0
Cycle Q Clear(g_c), s	9.6	4.0	0.0	5.4	15.7	2.1	0.0	22.2	0.4	10.0	16.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	438	946	423	91	768	301	4	1113	500	228	1681	805
V/C Ratio(X)	0.89	0.22	0.00	0.86	0.88	0.14	0.00	0.86	0.02	0.86	0.54	0.00
Avail Cap(c_a), veh/h	438	946	423	131	797	313	203	1224	541	230	1681	805
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	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.1	24.7	0.0	39.7	33.0	27.6	0.0	27.9	16.3	36.5	14.9	0.0
Incr Delay (d2), s/veh	19.2	0.1	0.0	31.4	11.2	0.2	0.0	6.3	0.0	26.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	2.0	0.0	2.7	9.0	0.9	0.0	11.8	0.1	6.2	7.5	0.0
LnGrp Delay(d),s/veh	56.3	24.8	0.0	71.0	44.2	27.9	0.0	34.2	16.4	62.6	15.2	0.0
LnGrp LOS	E	C		E	D	C		C	B	E	B	
Approach Vol, veh/h		596			800			972			1104	
Approach Delay, s/veh		45.3			45.9			34.0			23.7	
Approach LOS		D			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	15.9	32.3	10.3	28.0	0.0	48.2	15.0	23.3				
Change Period (Y+Rc), s	4.0	5.1	4.0	* 4.9	4.0	* 5.1	4.0	4.9				
Max Green Setting (Gmax), s	12.0	29.9	9.0	* 21	5.0	* 37	11.0	19.1				
Max Q Clear Time (g_c+1/2g), s	12.0	24.2	7.4	6.0	0.0	18.0	11.6	17.7				
Green Ext Time (p_c), s	0.0	3.0	0.0	1.1	0.0	6.8	0.0	0.7				
Intersection Summary												
HCM 2010 Ctrl Delay			35.4									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑	↗	↗	↑↑↑	↗	↔↔	↑↑	↗
Traffic Volume (veh/h)	0	24	39	251	337	178	0	306	63	0	729	49
Future Volume (veh/h)	0	24	39	251	337	178	0	306	63	0	729	49
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	1810	1810	1810	1863	1863	1863	1597	1597	1597	1638	1638	1638
Adj Flow Rate, veh/h	0	96	156	411	552	292	0	369	76	0	1157	78
Adj No. of Lanes	2	2	1	2	1	1	1	3	1	2	2	1
Peak Hour Factor	0.25	0.25	0.25	0.61	0.61	0.61	0.83	0.83	0.83	0.63	0.63	0.63
Percent Heavy Veh, %	5	5	5	2	2	2	19	19	19	16	16	16
Cap, veh/h	224	230	103	1126	610	451	2	1835	571	3	1310	586
Arrive On Green	0.00	0.07	0.07	0.33	0.33	0.33	0.00	0.42	0.42	0.00	0.42	0.42
Sat Flow, veh/h	3343	3438	1538	3442	1863	1583	1521	4359	1357	3026	3112	1392
Grp Volume(v), veh/h	0	96	156	411	552	292	0	369	76	0	1157	78
Grp Sat Flow(s),veh/h/ln1672	1719	1538	1721	1863	1583	1521	1453	1357	1513	1556	1392	
Q Serve(g_s), s	0.0	2.5	6.3	8.6	26.7	19.2	0.0	5.0	3.2	0.0	32.3	3.2
Cycle Q Clear(g_c), s	0.0	2.5	6.3	8.6	26.7	19.2	0.0	5.0	3.2	0.0	32.3	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	230	103	1126	610	451	2	1835	571	3	1310	586
V/C Ratio(X)	0.00	0.42	1.52	0.36	0.91	0.65	0.00	0.20	0.13	0.00	0.88	0.13
Avail Cap(c_a), veh/h	224	230	103	1191	645	481	89	1835	571	331	1460	653
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)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	42.2	43.9	24.2	30.3	45.4	0.0	17.2	16.7	0.0	25.1	16.7
Incr Delay (d2), s/veh	0.0	1.2	275.6	0.2	15.9	2.8	0.0	0.1	0.1	0.0	6.2	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/ln0.0	1.2	10.6	4.1	16.3	8.8	0.0	2.0	1.2	0.0	15.0	1.3	
LnGrp Delay(d),s/veh	0.0	43.4	319.6	24.4	46.2	48.2	0.0	17.3	16.8	0.0	31.4	16.8
LnGrp LOS		D	F	C	D	D		B	B		C	B
Approach Vol, veh/h		252			1255			445			1235	
Approach Delay, s/veh		214.4			39.5			17.2			30.4	
Approach LOS		F			D			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s0.0	45.5			12.1	0.0	45.5		36.6				
Change Period (Y+Rc), s 4.0	5.8			5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s 10.3	39.4			6.3	5.5	44.2		32.6				
Max Q Clear Time (g_c+I), s 7.0	7.0			8.3	0.0	34.3		28.7				
Green Ext Time (p_c), s 0.0	2.7			0.0	0.0	5.4		2.1				
Intersection Summary												
HCM 2010 Ctrl Delay				46.7								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary
 16: Baldwin Rd & Zacharias Rd

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	79	54	624	370	69	7	566	234	29	623	0
Future Volume (veh/h)	0	79	54	624	370	69	7	566	234	29	623	0
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	1810	1810	1810	1863	1863	1863	1810	1810	1810	1610	1610	1900
Adj Flow Rate, veh/h	0	144	98	1076	638	119	9	726	300	39	831	0
Adj No. of Lanes	1	2	1	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.55	0.55	0.55	0.58	0.58	0.58	0.78	0.78	0.78	0.75	0.75	0.75
Percent Heavy Veh, %	5	5	5	2	2	2	5	5	5	18	18	18
Cap, veh/h	125	250	112	1214	1248	558	19	962	430	55	931	0
Arrive On Green	0.00	0.07	0.07	0.35	0.35	0.35	0.01	0.28	0.28	0.04	0.30	0.00
Sat Flow, veh/h	1723	3438	1538	3442	3539	1583	1723	3438	1538	1533	3140	0
Grp Volume(v), veh/h	0	144	98	1076	638	119	9	726	300	39	831	0
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1721	1770	1583	1723	1719	1538	1533	1530	0
Q Serve(g_s), s	0.0	3.3	5.2	24.3	11.8	4.3	0.4	15.9	14.4	2.1	21.4	0.0
Cycle Q Clear(g_c), s	0.0	3.3	5.2	24.3	11.8	4.3	0.4	15.9	14.4	2.1	21.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	125	250	112	1214	1248	558	19	962	430	55	931	0
V/C Ratio(X)	0.00	0.58	0.88	0.89	0.51	0.21	0.46	0.76	0.70	0.71	0.89	0.00
Avail Cap(c_a), veh/h	125	250	112	1259	1295	579	115	1120	501	102	997	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	37.1	37.9	25.2	21.1	18.7	40.6	27.2	26.6	39.4	27.4	0.0
Incr Delay (d2), s/veh	0.0	3.2	49.1	7.8	0.3	0.2	16.1	2.5	3.5	15.5	9.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	3.7	12.8	5.8	1.9	0.3	7.9	6.5	1.1	10.3	0.0
LnGrp Delay(d),s/veh	0.0	40.3	87.0	32.9	21.4	18.9	56.7	29.7	30.1	54.9	37.3	0.0
LnGrp LOS		D	F	C	C	B	E	C	C	D	D	
Approach Vol, veh/h		242			1833			1035			870	
Approach Delay, s/veh		59.2			28.0			30.0			38.1	
Approach LOS		E			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	28.9		11.8	4.9	30.9		34.9				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	26.9		6.0	5.5	26.9		30.2				
Max Q Clear Time (g_c+I), s	11.5	17.9		7.2	2.4	23.4		26.3				
Green Ext Time (p_c), s	0.0	3.7		0.0	0.0	1.7		2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			32.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	222	339	1336	291	327	52		
Future Volume (veh/h)	222	339	1336	291	327	52		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1638	1638	1624	1624		
Adj Flow Rate, veh/h	308	471	1536	334	425	68		
Adj No. of Lanes	1	2	2	2	2	1		
Peak Hour Factor	0.72	0.72	0.87	0.87	0.77	0.77		
Percent Heavy Veh, %	5	5	16	16	17	17		
Cap, veh/h	314	1873	1543	2185	469	210		
Arrive On Green	0.18	0.18	0.51	0.70	0.15	0.15		
Sat Flow, veh/h	1723	2707	3026	3194	3167	1380		
Grp Volume(v), veh/h	308	471	1536	334	425	68		
Grp Sat Flow(s),veh/h/ln	1723	1354	1513	1556	1543	1380		
Q Serve(g_s), s	17.8	6.5	50.5	3.6	13.5	4.4		
Cycle Q Clear(g_c), s	17.8	6.5	50.5	3.6	13.5	4.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	314	1873	1543	2185	469	210		
V/C Ratio(X)	0.98	0.25	1.00	0.15	0.91	0.32		
Avail Cap(c_a), veh/h	314	1873	1543	2185	469	210		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	40.7	5.7	24.4	5.0	41.7	37.8		
Incr Delay (d2), s/veh	45.8	0.1	21.7	0.0	21.1	0.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	8.5	25.6	1.5	7.2	1.7		
LnGrp Delay(d),s/veh	86.5	5.8	46.1	5.0	62.8	38.7		
LnGrp LOS	F	A	D	A	E	D		
Approach Vol, veh/h	779			1870	493			
Approach Delay, s/veh	37.7			38.8	59.5			
Approach LOS	D			D	E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		76.0		24.0	55.0	21.0		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		70.2		18.2	51.0	15.2		
Max Q Clear Time (g_c+I1), s		5.6		19.8	52.5	15.5		
Green Ext Time (p_c), s		2.2		0.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			41.7					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	276	313	975	48	23	685		
Future Volume (veh/h)	276	313	975	48	23	685		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1473	1473	1638	1900	1624	1624		
Adj Flow Rate, veh/h	329	373	1175	58	29	867		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.84	0.84	0.83	0.83	0.79	0.79		
Percent Heavy Veh, %	29	29	16	16	17	17		
Cap, veh/h	442	394	1338	66	47	1628		
Arrive On Green	0.31	0.31	0.44	0.44	0.03	0.53		
Sat Flow, veh/h	1403	1252	3101	149	1547	3167		
Grp Volume(v), veh/h	329	373	605	628	29	867		
Grp Sat Flow(s),veh/h/ln	1403	1252	1556	1612	1547	1543		
Q Serve(g_s), s	15.5	21.4	26.1	26.2	1.4	13.6		
Cycle Q Clear(g_c), s	15.5	21.4	26.1	26.2	1.4	13.6		
Prop In Lane	1.00	1.00		0.09	1.00			
Lane Grp Cap(c), veh/h	442	394	690	714	47	1628		
V/C Ratio(X)	0.75	0.95	0.88	0.88	0.62	0.53		
Avail Cap(c_a), veh/h	442	394	764	792	105	1892		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.6	24.6	18.7	18.7	35.3	11.4		
Incr Delay (d2), s/veh	6.8	31.8	10.6	10.4	12.5	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.8	10.9	13.1	13.6	0.7	5.8		
LnGrp Delay(d),s/veh	29.4	56.5	29.3	29.1	47.8	11.7		
LnGrp LOS	C	E	C	C	D	B		
Approach Vol, veh/h	702		1233			896		
Approach Delay, s/veh	43.8		29.2			12.9		
Approach LOS	D		C			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.2	38.5				44.7		29.0
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	5.0	36.2				45.2		23.2
Max Q Clear Time (g_c+1), s	13.4	28.2				15.6		23.4
Green Ext Time (p_c), s	0.0	4.5				6.3		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			27.6					
HCM 2010 LOS			C					

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

20: SR-33 & Baldwin Rd

Timing Plan: AM Peak

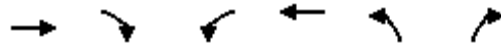


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	636	15	3	787	515	93
Future Volume (vph)	636	15	3	787	515	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.97		1.00	1.00	0.95	
Frt	1.00		1.00	1.00	0.98	
Flt Protected	0.95		0.95	1.00	1.00	
Satd. Flow (prot)	3335		1556	1638	3015	
Flt Permitted	0.95		0.95	1.00	1.00	
Satd. Flow (perm)	3335		1556	1638	3015	
Peak-hour factor, PHF	0.72	0.72	0.86	0.86	0.77	0.77
Adj. Flow (vph)	883	21	3	915	669	121
RTOR Reduction (vph)	2	0	0	0	14	0
Lane Group Flow (vph)	902	0	3	915	776	0
Heavy Vehicles (%)	5%	5%	16%	16%	17%	17%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	25.4		1.1	53.8	48.7	
Effective Green, g (s)	25.4		1.1	53.8	48.7	
Actuated g/C Ratio	0.28		0.01	0.59	0.54	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	932		18	970	1617	
v/s Ratio Prot	c0.27		0.00	c0.56	0.26	
v/s Ratio Perm						
v/c Ratio	0.97		0.17	0.94	0.48	
Uniform Delay, d1	32.3		44.4	17.1	13.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	21.7		4.3	16.8	0.2	
Delay (s)	54.0		48.7	33.9	13.4	
Level of Service	D		D	C	B	
Approach Delay (s)	54.0			34.0	13.4	
Approach LOS	D			C	B	
Intersection Summary						
HCM 2000 Control Delay			34.7		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			1.00			
Actuated Cycle Length (s)			90.8		Sum of lost time (s)	15.6
Intersection Capacity Utilization			69.7%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

21: Rogers Rd & SR-33

Timing Plan: AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵↵	
Traffic Volume (vph)	657	167	6	395	454	64
Future Volume (vph)	657	167	6	395	454	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.95		1.00	1.00	0.97	
Frt	0.97		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	2998		1556	1638	2912	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	2998		1556	1638	2912	
Peak-hour factor, PHF	0.73	0.79	0.95	0.95	0.84	0.84
Adj. Flow (vph)	900	211	6	416	540	76
RTOR Reduction (vph)	32	0	0	0	19	0
Lane Group Flow (vph)	1079	0	6	416	597	0
Heavy Vehicles (%)	17%	17%	16%	16%	19%	19%
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	22.7		0.8	27.5	14.4	
Effective Green, g (s)	22.7		0.8	27.5	14.4	
Actuated g/C Ratio	0.42		0.01	0.51	0.27	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1272		23	841	783	
v/s Ratio Prot	c0.36		0.00	c0.25	c0.20	
v/s Ratio Perm						
v/c Ratio	0.85		0.26	0.49	0.76	
Uniform Delay, d1	13.9		26.1	8.5	18.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	5.5		6.0	0.5	4.4	
Delay (s)	19.3		32.0	8.9	22.4	
Level of Service	B		C	A	C	
Approach Delay (s)	19.3			9.3	22.4	
Approach LOS	B			A	C	
Intersection Summary						
HCM 2000 Control Delay			18.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.83			
Actuated Cycle Length (s)			53.5		Sum of lost time (s)	15.6
Intersection Capacity Utilization			48.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
 22: Sycamore Ave & Eucalyptus Ave

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	25	62	43	0	416	21	7	27	0	0	131	11
Future Volume (veh/h)	25	62	43	0	416	21	7	27	0	0	131	11
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	1900	1583	1900	1900	1473	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	33	83	57	0	555	28	9	35	0	0	175	15
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.77	0.77	0.77	0.75	0.75	0.75
Percent Heavy Veh, %	20	20	20	29	29	29	2	2	2	2	2	2
Cap, veh/h	188	334	185	0	704	36	180	292	0	0	317	27
Arrive On Green	0.51	0.51	0.51	0.00	0.51	0.51	0.19	0.19	0.00	0.00	0.19	0.19
Sat Flow, veh/h	82	660	365	0	1390	70	170	1561	0	0	1692	145
Grp Volume(v), veh/h	173	0	0	0	0	583	44	0	0	0	0	190
Grp Sat Flow(s),veh/h/ln	107	0	0	0	0	1460	1732	0	0	0	0	1837
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	9.6	0.0	0.0	0.0	0.0	0.0	2.8
Cycle Q Clear(g_c), s	10.1	0.0	0.0	0.0	0.0	9.6	2.8	0.0	0.0	0.0	0.0	2.8
Prop In Lane	0.19		0.33	0.00		0.05	0.20		0.00	0.00		0.08
Lane Grp Cap(c), veh/h	706	0	0	0	0	739	472	0	0	0	0	344
V/C Ratio(X)	0.24	0.00	0.00	0.00	0.00	0.79	0.09	0.00	0.00	0.00	0.00	0.55
Avail Cap(c_a), veh/h	1400	0	0	0	0	1568	1269	0	0	0	0	1221
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	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	4.2	0.0	0.0	0.0	0.0	6.0	9.9	0.0	0.0	0.0	0.0	10.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	1.9	0.1	0.0	0.0	0.0	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.0	0.0	4.1	0.3	0.0	0.0	0.0	0.0	1.5
LnGrp Delay(d),s/veh	4.4	0.0	0.0	0.0	0.0	7.9	10.0	0.0	0.0	0.0	0.0	12.2
LnGrp LOS	A					A	B					B
Approach Vol, veh/h		173			583			44			190	
Approach Delay, s/veh		4.4			7.9			10.0			12.2	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.0		19.3		10.0		19.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		31.5		19.5		31.5				
Max Q Clear Time (g_c+1), s		4.8		12.1		4.8		11.6				
Green Ext Time (p_c), s		0.1		0.8		0.7		3.3				
Intersection Summary												
HCM 2010 Ctrl Delay				8.2								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	10	10	87	1	4	0	149	299	11	1	20	1
Future Vol, veh/h	10	10	87	1	4	0	149	299	11	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	39	39	39	42	42	42	72	72	72	69	69	69
Heavy Vehicles, %	20	20	20	29	29	29	2	2	2	2	2	2
Mvmt Flow	26	26	223	2	10	0	207	415	15	1	29	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	874	876	30	993	869	423	30	0	0	430	0	0
Stage 1	32	32	-	837	837	-	-	-	-	-	-	-
Stage 2	842	844	-	156	32	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.39	6.79	6.49	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.39	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.761	4.261	3.561	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	251	269	995	200	263	577	1583	-	-	1129	-	-
Stage 1	940	834	-	325	346	-	-	-	-	-	-	-
Stage 2	334	355	-	786	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	219	233	995	128	228	577	1583	-	-	1129	-	-
Mov Cap-2 Maneuver	219	233	-	128	228	-	-	-	-	-	-	-
Stage 1	817	833	-	282	301	-	-	-	-	-	-	-
Stage 2	281	308	-	590	817	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.7		24.4		2.5		0.4	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1583	-	-	608	197	1129	-	-
HCM Lane V/C Ratio	0.131	-	-	0.451	0.06	0.001	-	-
HCM Control Delay (s)	7.6	-	-	15.7	24.4	8.2	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	2.3	0.2	0	-	-

HCM 2010 Signalized Intersection Summary
24: Sycamore Ave & Las Palmas Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	600	9	16	601	66	3	31	56	145	95	39
Future Volume (veh/h)	16	600	9	16	601	66	3	31	56	145	95	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	19	706	11	19	699	77	3	34	62	191	125	51
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.86	0.86	0.86	0.90	0.90	0.90	0.76	0.76	0.76
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	36	880	14	34	739	81	129	43	79	233	165	67
Arrive On Green	0.02	0.51	0.51	0.02	0.51	0.51	0.07	0.07	0.07	0.13	0.13	0.13
Sat Flow, veh/h	1675	1728	27	1560	1450	160	1774	592	1080	1774	1259	514
Grp Volume(v), veh/h	19	0	717	19	0	776	3	0	96	191	0	176
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1610	1774	0	1672	1774	0	1772
Q Serve(g_s), s	0.9	0.0	27.4	1.0	0.0	36.9	0.1	0.0	4.6	8.5	0.0	7.7
Cycle Q Clear(g_c), s	0.9	0.0	27.4	1.0	0.0	36.9	0.1	0.0	4.6	8.5	0.0	7.7
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.65	1.00		0.29
Lane Grp Cap(c), veh/h	36	0	894	34	0	820	129	0	122	233	0	233
V/C Ratio(X)	0.53	0.00	0.80	0.57	0.00	0.95	0.02	0.00	0.79	0.82	0.00	0.76
Avail Cap(c_a), veh/h	104	0	959	96	0	880	175	0	165	250	0	250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	0.0	16.4	39.2	0.0	18.8	34.8	0.0	36.9	34.2	0.0	33.9
Incr Delay (d2), s/veh	11.5	0.0	4.7	14.2	0.0	18.0	0.1	0.0	16.0	18.1	0.0	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	14.3	0.5	0.0	20.3	0.1	0.0	2.6	5.3	0.0	4.5
LnGrp Delay(d),s/veh	50.6	0.0	21.1	53.4	0.0	36.8	34.9	0.0	52.9	52.3	0.0	45.5
LnGrp LOS	D		C	D		D	C		D	D		D
Approach Vol, veh/h		736			795			99			367	
Approach Delay, s/veh		21.9			37.2			52.4			49.0	
Approach LOS		C			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.7	5.7	47.0		16.4	5.7	47.0				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		8.0	5.0	44.2		11.4	5.0	44.2				
Max Q Clear Time (g_c+I1), s		6.6	3.0	29.4		10.5	2.9	38.9				
Green Ext Time (p_c), s		0.0	0.0	4.0		0.2	0.0	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay			34.5									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	868	8	23	759	79	10	10	26	156	16	19
Future Volume (veh/h)	4	868	8	23	759	79	10	10	26	156	16	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1033	10	27	883	92	12	12	32	177	18	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.82	0.82	0.82	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	11	1073	10	43	931	97	89	88	166	281	21	25
Arrive On Green	0.01	0.62	0.62	0.03	0.64	0.64	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1675	1739	17	1560	1459	152	215	523	984	1202	122	149
Grp Volume(v), veh/h	5	0	1043	27	0	975	56	0	0	217	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1756	1560	0	1611	1722	0	0	1473	0	0
Q Serve(g_s), s	0.2	0.0	46.8	1.4	0.0	46.4	0.0	0.0	0.0	9.5	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	46.8	1.4	0.0	46.4	2.4	0.0	0.0	11.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.21		0.57	0.82		0.10
Lane Grp Cap(c), veh/h	11	0	1083	43	0	1028	343	0	0	327	0	0
V/C Ratio(X)	0.46	0.00	0.96	0.62	0.00	0.95	0.16	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	100	0	1118	93	0	1028	382	0	0	362	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.4	0.0	15.1	40.2	0.0	13.9	29.9	0.0	0.0	33.6	0.0	0.0
Incr Delay (d2), s/veh	26.7	0.0	18.3	13.6	0.0	17.0	0.2	0.0	0.0	3.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	27.8	0.8	0.0	25.2	1.1	0.0	0.0	5.2	0.0	0.0
LnGrp Delay(d),s/veh	68.0	0.0	33.4	53.8	0.0	30.9	30.1	0.0	0.0	37.5	0.0	0.0
LnGrp LOS	E		C	D		C	C			D		
Approach Vol, veh/h		1048			1002			56			217	
Approach Delay, s/veh		33.6			31.5			30.1			37.5	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.9	6.3	57.3		19.9	4.5	59.1				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		16.2	5.0	53.2		16.2	5.0	53.2				
Max Q Clear Time (g_c+I1), s		4.4	3.4	48.8		13.9	2.2	48.4				
Green Ext Time (p_c), s		0.1	0.0	2.7		0.2	0.0	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			33.0									
HCM 2010 LOS			C									

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)
 26: Las Palmas Ave/W Main Ave & Jennings Rd

Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	487	846	532	3	14	626
Future Volume (vph)	487	846	532	3	14	626
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	1.00	1.00		1.00	0.95
Frt	1.00	1.00	1.00		0.86	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1626	1712	1665		1592	1504
Flt Permitted	0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1626	1712	1665		1592	1504
Peak-hour factor, PHF	0.88	0.88	0.78	0.78	0.69	0.69
Adj. Flow (vph)	553	961	682	4	20	907
RTOR Reduction (vph)	0	0	0	0	398	415
Lane Group Flow (vph)	553	961	686	0	66	48
Heavy Vehicles (%)	11%	11%	14%	14%	2%	2%
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	35.0	83.3	44.3		10.9	10.9
Effective Green, g (s)	35.0	83.3	44.3		10.9	10.9
Actuated g/C Ratio	0.33	0.79	0.42		0.10	0.10
Clearance Time (s)	4.0	5.8	5.8		5.8	5.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	537	1347	697		164	154
v/s Ratio Prot	c0.34	0.56	c0.41		c0.04	
v/s Ratio Perm						0.03
v/c Ratio	1.03	0.71	0.98		0.40	0.31
Uniform Delay, d1	35.4	5.5	30.4		44.4	44.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	46.7	1.8	29.9		1.6	1.1
Delay (s)	82.1	7.3	60.3		46.0	45.1
Level of Service	F	A	E		D	D
Approach Delay (s)		34.6	60.3		45.6	
Approach LOS		C	E		D	
Intersection Summary						
HCM 2000 Control Delay			43.5		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.93			
Actuated Cycle Length (s)			105.8		Sum of lost time (s)	15.6
Intersection Capacity Utilization			81.8%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)
 27: SR-33 & New Connection (Project) Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	75	636	394	518	209	150
Future Volume (vph)	75	636	394	518	209	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	0.97	0.95	0.95	
Frt	0.88	0.85	1.00	1.00	0.94	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1625	1504	3433	3539	3317	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1625	1504	3433	3539	3317	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	691	428	563	227	163
RTOR Reduction (vph)	201	290	0	0	129	0
Lane Group Flow (vph)	192	90	428	563	261	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	10.5	10.5	11.2	25.0	9.3	
Effective Green, g (s)	10.5	10.5	11.2	25.0	9.3	
Actuated g/C Ratio	0.24	0.24	0.25	0.56	0.21	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	383	354	864	1988	693	
v/s Ratio Prot	c0.12		c0.12	0.16	c0.08	
v/s Ratio Perm		0.06				
v/c Ratio	0.50	0.25	0.50	0.28	0.38	
Uniform Delay, d1	14.7	13.8	14.2	5.1	15.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.4	0.4	0.1	0.3	
Delay (s)	15.8	14.2	14.7	5.2	15.5	
Level of Service	B	B	B	A	B	
Approach Delay (s)	15.0			9.3	15.5	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	44.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
 28: Ward Ave & New Connection (Project)

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	431	120	200	244	100	566	0	280	0	0	0
Future Volume (veh/h)	0	431	120	200	244	100	566	0	280	0	0	0
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	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	0	468	130	217	265	109	615	0	304	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	589	501	273	700	288	918	0	422	0	4	0
Arrive On Green	0.00	0.32	0.32	0.15	0.56	0.56	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1255	516	3442	0	1583	0	1863	0
Grp Volume(v), veh/h	0	468	130	217	0	374	615	0	304	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1772	1721	0	1583	0	1863	0
Q Serve(g_s), s	0.0	11.8	3.1	6.0	0.0	6.1	8.2	0.0	8.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.8	3.1	6.0	0.0	6.1	8.2	0.0	8.9	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	589	501	273	0	988	918	0	422	0	4	0
V/C Ratio(X)	0.00	0.79	0.26	0.79	0.00	0.38	0.67	0.00	0.72	0.00	0.00	0.00
Avail Cap(c_a), veh/h	173	857	729	415	0	1057	1235	0	568	0	654	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.0	13.1	20.9	0.0	6.4	16.8	0.0	17.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.3	0.3	6.0	0.0	0.2	0.9	0.0	2.9	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.5	1.4	3.4	0.0	3.0	4.0	0.0	4.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	19.3	13.3	26.9	0.0	6.6	17.6	0.0	20.0	0.0	0.0	0.0
LnGrp LOS		B	B	C		A	B		B			
Approach Vol, veh/h		598			591			919			0	
Approach Delay, s/veh		18.0			14.1			18.4			0.0	
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		18.2	12.4	20.7		0.0	0.0	33.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.4	12.0	23.6		18.0	5.0	30.6				
Max Q Clear Time (g_c+1), s		10.9	8.0	13.8		0.0	0.0	8.1				
Green Ext Time (p_c), s		2.7	0.2	2.4		0.0	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay				17.1								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

1: I-5 SB Ramps & Sperry Ave

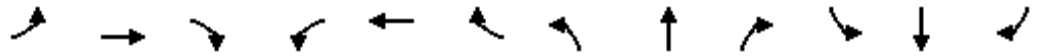
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↗					↖	↗	
Traffic Volume (vph)	0	302	26	499	462	0	0	0	0	1207	2	60
Future Volume (vph)	0	302	26	499	462	0	0	0	0	1207	2	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		0.99		1.00	1.00					1.00	0.99	
Flt Protected		1.00		0.95	1.00					0.95	0.96	
Satd. Flow (prot)		3435		1504	1772					1234	1258	
Flt Permitted		1.00		0.95	1.00					0.95	0.96	
Satd. Flow (perm)		3435		1504	1772					1234	1258	
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.25	0.25	0.25	0.95	0.95	0.95
Adj. Flow (vph)	0	360	31	542	502	0	0	0	0	1271	2	63
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	387	0	488	556	0	0	0	0	674	660	0
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	4%	0%	14%	0%	0%	0%	0%	0%	39%	4%	2%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		15.9		44.9	44.9					75.0	75.0	
Effective Green, g (s)		15.9		44.9	44.9					75.0	75.0	
Actuated g/C Ratio		0.11		0.30	0.30					0.50	0.50	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		364		450	530					617	629	
v/s Ratio Prot		c0.11		c0.32	0.31					c0.55	0.52	
v/s Ratio Perm												
v/c Ratio		1.06		1.08	1.05					1.09	1.05	
Uniform Delay, d1		67.0		52.5	52.5					37.5	37.5	
Progression Factor		1.00		0.12	0.12					1.00	1.00	
Incremental Delay, d2		64.5		50.7	36.5					64.0	49.2	
Delay (s)		131.5		56.8	42.6					101.5	86.7	
Level of Service		F		E	D					F	F	
Approach Delay (s)		131.5			49.2			0.0			94.2	
Approach LOS		F			D			A			F	
Intersection Summary												
HCM 2000 Control Delay			82.5			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.09									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			14.2			
Intersection Capacity Utilization			83.1%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)
 2: I-5 NB Ramps & Sperry Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗		↕	↗↗			
Traffic Volume (vph)	39	1470	0	0	957	938	4	7	449	0	0	0
Future Volume (vph)	39	1470	0	0	957	938	4	7	449	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		1.00			1.00	1.00		0.98	1.00			
Satd. Flow (prot)		3337			3282	1335		1402	2369			
Flt Permitted		1.00			1.00	1.00		0.98	1.00			
Satd. Flow (perm)		3337			3282	1335		1402	2369			
Peak-hour factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94	0.90	0.90	0.90	0.25	0.25	0.25
Adj. Flow (vph)	41	1547	0	0	1018	998	4	8	499	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	0	1588	0	0	1018	998	0	12	482	0	0	0
Heavy Vehicles (%)	10%	8%	0%	0%	10%	21%	0%	50%	20%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2 4!	4	4!	6			
Permitted Phases						6			4			
Actuated Green, G (s)		74.8			47.9	139.8		12.0	59.9			
Effective Green, g (s)		74.8			47.9	139.8		12.0	59.9			
Actuated g/C Ratio		0.50			0.32	0.93		0.08	0.40			
Clearance Time (s)		5.1			5.1			5.1	5.1			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		1664			1048	1335		112	1026			
v/s Ratio Prot		c0.48			c0.31	c0.46		0.01	0.15			
v/s Ratio Perm						0.29			0.05			
v/c Ratio		0.95			0.97	0.75		0.11	0.47			
Uniform Delay, d1		36.0			50.4	1.1		64.0	33.3			
Progression Factor		0.56			1.00	1.00		1.00	1.00			
Incremental Delay, d2		1.9			21.1	2.3		0.4	0.3			
Delay (s)		21.9			71.4	3.5		64.5	33.7			
Level of Service		C			E	A		E	C			
Approach Delay (s)		21.9			37.8			34.4			0.0	
Approach LOS		C			D			C			A	





























Intersection Summary		
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.97	C
Actuated Cycle Length (s)	150.0	Sum of lost time (s)
Intersection Capacity Utilization	122.6%	15.3
Analysis Period (min)	15	ICU Level of Service
		H

! Phase conflict between lane groups.
 c Critical Lane Group

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

3: Sperry Ave & Rogers Rd

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 		 			 		
Traffic Volume (vph)	498	1163	267	113	697	207	278	8	117	457	0	920
Future Volume (vph)	498	1163	267	113	697	207	278	8	117	457	0	920
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.91	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3282	1583	1770	3059	1583	3433	1863	1583	1698	1318	1346
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3282	1583	1770	3059	1583	3433	1863	1583	1698	1318	1346
Peak-hour factor, PHF	0.93	0.93	0.92	0.92	0.88	0.88	0.92	0.92	0.92	0.91	0.92	0.91
Adj. Flow (vph)	535	1251	290	123	792	235	302	9	127	502	0	1011
RTOR Reduction (vph)	0	0	115	0	0	155	0	0	111	0	236	63
Lane Group Flow (vph)	535	1251	175	123	792	80	302	9	16	452	299	463
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	27.5	49.5	49.5	20.7	42.7	42.7	18.0	18.0	18.0	33.3	33.3	60.8
Effective Green, g (s)	27.5	49.5	49.5	20.7	42.7	42.7	18.0	18.0	18.0	33.3	33.3	60.8
Actuated g/C Ratio	0.19	0.34	0.34	0.14	0.29	0.29	0.12	0.12	0.12	0.23	0.23	0.42
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	609	1120	540	252	900	466	426	231	196	389	302	564
v/s Ratio Prot	0.17	c0.38		0.07	c0.26		c0.09	0.00		c0.27	0.23	0.16
v/s Ratio Perm			0.11			0.05			0.01			0.19
v/c Ratio	0.88	1.12	0.32	0.49	0.88	0.17	0.71	0.04	0.08	1.16	0.99	0.82
Uniform Delay, d1	57.1	47.8	35.4	57.3	48.7	38.0	61.0	55.9	56.2	55.9	55.7	37.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.6	65.1	1.6	1.5	12.0	0.8	5.3	0.1	0.2	97.7	49.2	9.3
Delay (s)	70.7	112.8	36.9	58.8	60.7	38.8	66.3	56.0	56.4	153.5	104.9	46.6
Level of Service	E	F	D	E	E	D	E	E	E	F	F	D
Approach Delay (s)		91.4			56.0			63.2			99.1	
Approach LOS		F			E			E			F	
Intersection Summary												
HCM 2000 Control Delay			83.4									F
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			145.0							23.5		
Intersection Capacity Utilization			88.0%									E
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗		↖↗	↖↗	↖				↖		↖
Traffic Volume (veh/h)	142	596	0	6	405	114	0	0	0	160	0	194
Future Volume (veh/h)	142	596	0	6	405	114	0	0	0	160	0	194
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Adj Sat Flow, veh/h/ln	1173	1743	1900	1900	1827	1496				1473	0	1145
Adj Flow Rate, veh/h	151	634	0	7	450	127				250	0	303
Adj No. of Lanes	2	2	0	2	2	1				1	0	1
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90				0.64	0.64	0.64
Percent Heavy Veh, %	62	9	9	0	4	27				29	0	66
Cap, veh/h	216	1175	0	39	923	331				506	0	351
Arrive On Green	0.10	0.35	0.00	0.01	0.27	0.27				0.36	0.00	0.36
Sat Flow, veh/h	2167	3399	0	3510	3471	1244				1403	0	973
Grp Volume(v), veh/h	151	634	0	7	450	127				250	0	303
Grp Sat Flow(s),veh/h/ln1083	1656	1656	0	1755	1736	1244				1403	0	973
Q Serve(g_s), s	3.6	8.2	0.0	0.1	5.9	4.5				7.5	0.0	15.5
Cycle Q Clear(g_c), s	3.6	8.2	0.0	0.1	5.9	4.5				7.5	0.0	15.5
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	216	1175	0	39	923	331				506	0	351
V/C Ratio(X)	0.70	0.54	0.00	0.18	0.49	0.38				0.49	0.00	0.86
Avail Cap(c_a), veh/h	343	2298	0	392	2247	805				965	0	669
HCM Platoon Ratio	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	0.00	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	13.8	0.0	26.3	16.6	16.1				13.4	0.0	16.0
Incr Delay (d2), s/veh	4.0	0.8	0.0	2.2	0.9	1.6				0.7	0.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln1.2	3.8	3.8	0.0	0.1	2.9	3.4				3.0	0.0	8.0
LnGrp Delay(d),s/veh	27.4	14.7	0.0	28.5	17.5	17.7				14.1	0.0	22.3
LnGrp LOS	C	B		C	B	B				B		C
Approach Vol, veh/h		785			584						553	
Approach Delay, s/veh		17.1			17.7						18.6	
Approach LOS		B			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	5.1	24.8		23.9	9.9	20.0						
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7						
Max Green Setting (Gmax), s	37.3	37.3		37.0	8.5	34.8						
Max Q Clear Time (g_c+I), s	10.2	10.2		17.5	5.6	7.9						
Green Ext Time (p_c), s	0.0	7.9		1.9	0.1	6.4						
Intersection Summary												
HCM 2010 Ctrl Delay			17.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗		↖	↖	↖	↖↗	↖		↖↗	↖	↖
Traffic Volume (veh/h)	104	531	58	18	494	95	181	118	95	438	204	336
Future Volume (veh/h)	104	531	58	18	494	95	181	118	95	438	204	336
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1850	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	114	584	64	20	555	107	232	151	122	548	255	420
Adj No. of Lanes	2	2	0	1	1	1	2	1	0	2	1	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.78	0.78	0.78	0.80	0.80	0.80
Percent Heavy Veh, %	1	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	225	1200	131	44	618	546	309	201	162	619	563	478
Arrive On Green	0.06	0.38	0.38	0.03	0.34	0.34	0.09	0.21	0.21	0.18	0.30	0.30
Sat Flow, veh/h	3476	3189	349	1660	1827	1615	3510	974	787	3476	1900	1615
Grp Volume(v), veh/h	114	321	327	20	555	107	232	0	273	548	255	420
Grp Sat Flow(s),veh/h/ln	1738	1757	1780	1660	1827	1615	1755	0	1761	1738	1900	1615
Q Serve(g_s), s	2.8	12.1	12.2	1.0	25.1	4.1	5.6	0.0	12.7	13.4	9.5	21.5
Cycle Q Clear(g_c), s	2.8	12.1	12.2	1.0	25.1	4.1	5.6	0.0	12.7	13.4	9.5	21.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	225	661	670	44	618	546	309	0	363	619	563	478
V/C Ratio(X)	0.51	0.49	0.49	0.46	0.90	0.20	0.75	0.00	0.75	0.89	0.45	0.88
Avail Cap(c_a), veh/h	284	661	670	115	660	583	372	0	547	640	739	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	20.7	20.7	41.7	27.3	20.4	38.7	0.0	32.4	34.9	24.9	29.1
Incr Delay (d2), s/veh	0.7	1.2	1.2	15.0	15.9	0.4	5.2	0.0	3.1	13.2	0.6	10.8
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	4	6.1	6.2	0.7	15.4	1.9	2.9	0.0	6.5	7.5	5.0	11.0
LnGrp Delay(d),s/veh	40.0	21.9	21.9	56.7	43.2	20.8	43.9	0.0	35.5	48.0	25.4	39.9
LnGrp LOS	D	C	C	E	D	C	D		D	D	C	D
Approach Vol, veh/h		762			682			505			1223	
Approach Delay, s/veh		24.6			40.1			39.4			40.5	
Approach LOS		C			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	38.2	11.9	30.4	9.8	34.9	19.7	22.5				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	32.5	* 9.2	33.8	* 7.1	31.4	* 16	27.0				
Max Q Clear Time (g_c+1), s	13	14.2	7.6	23.5	4.8	27.1	15.4	14.7				
Green Ext Time (p_c), s	0.0	6.3	0.1	2.3	0.0	2.3	0.1	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				36.4								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	627	38	71	574	76	28	91	62	65	48	60
Future Volume (veh/h)	99	627	38	71	574	76	28	91	62	65	48	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	104	660	40	74	598	79	35	114	78	82	61	76
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.80	0.80	0.80	0.79	0.79	0.79
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	168	1047	63	141	924	122	329	220	151	286	162	202
Arrive On Green	0.09	0.31	0.31	0.08	0.30	0.30	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1810	3359	203	1810	3117	411	1268	1043	713	1208	768	957
Grp Volume(v), veh/h	104	345	355	74	336	341	35	0	192	82	0	137
Grp Sat Flow(s),veh/h/ln	1810	1755	1807	1810	1754	1773	1268	0	1756	1208	0	1726
Q Serve(g_s), s	2.7	8.2	8.2	1.9	8.1	8.2	1.2	0.0	4.7	3.1	0.0	3.3
Cycle Q Clear(g_c), s	2.7	8.2	8.2	1.9	8.1	8.2	4.5	0.0	4.7	7.9	0.0	3.3
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.55
Lane Grp Cap(c), veh/h	168	547	563	141	520	526	329	0	371	286	0	364
V/C Ratio(X)	0.62	0.63	0.63	0.53	0.65	0.65	0.11	0.00	0.52	0.29	0.00	0.38
Avail Cap(c_a), veh/h	241	805	829	226	790	799	632	0	791	575	0	778
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	14.4	14.4	21.6	14.9	15.0	18.4	0.0	17.1	20.5	0.0	16.5
Incr Delay (d2), s/veh	3.7	1.7	1.7	3.0	1.9	1.9	0.1	0.0	1.1	0.5	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	1.5	4.2	4.3	1.1	4.2	4.3	0.4	0.0	2.4	1.1	0.0	1.6
LnGrp Delay(d),s/veh	25.0	16.1	16.1	24.7	16.9	16.9	18.6	0.0	18.2	21.1	0.0	17.1
LnGrp LOS	C	B	B	C	B	B	B		B	C		B
Approach Vol, veh/h		804			751			227			219	
Approach Delay, s/veh		17.2			17.6			18.2			18.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	21.7		16.8	11.0	21.0		16.8				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.4			22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1), s	10.2			9.9	4.7	10.2		6.7				
Green Ext Time (p_c), s	0.0	4.3		0.8	0.0	4.3		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↖	↗	↖	↗	↗
Traffic Volume (veh/h)	166	442	57	291	459	143	68	250	191	125	300	47
Future Volume (veh/h)	166	442	57	291	459	143	68	250	191	125	300	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
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	1863	1841	1900	1881	1845	1900	1845	1881	1863	1881	1900	1900
Adj Flow Rate, veh/h	171	456	59	316	499	155	82	301	230	144	345	54
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.83	0.83	0.83	0.87	0.87	0.87
Percent Heavy Veh, %	2	3	3	1	3	0	3	1	2	1	0	0
Cap, veh/h	209	644	83	364	979	443	297	664	558	296	671	557
Arrive On Green	0.12	0.21	0.21	0.20	0.28	0.28	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1774	3111	400	1792	3505	1586	968	1881	1582	878	1900	1578
Grp Volume(v), veh/h	171	255	260	316	499	155	82	301	230	144	345	54
Grp Sat Flow(s),veh/h/ln	1774	1749	1762	1792	1752	1586	968	1881	1582	878	1900	1578
Q Serve(g_s), s	7.2	10.3	10.4	13.0	9.1	5.9	5.6	9.4	8.4	11.5	10.9	1.7
Cycle Q Clear(g_c), s	7.2	10.3	10.4	13.0	9.1	5.9	16.5	9.4	8.4	20.9	10.9	1.7
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	209	362	365	364	979	443	297	664	558	296	671	557
V/C Ratio(X)	0.82	0.70	0.71	0.87	0.51	0.35	0.28	0.45	0.41	0.49	0.51	0.10
Avail Cap(c_a), veh/h	233	506	510	495	1476	668	389	842	708	379	850	706
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	32.7	28.0	28.0	29.3	23.0	21.9	26.0	18.9	18.6	27.0	19.4	16.5
Incr Delay (d2), s/veh	18.5	5.3	5.5	11.8	0.9	1.0	1.1	1.0	1.0	2.6	1.3	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	4.6	5.5	5.6	7.6	4.5	2.7	1.6	5.0	3.8	3.0	5.9	0.8
LnGrp Delay(d),s/veh	51.2	33.3	33.5	41.1	23.9	22.9	27.0	20.0	19.7	29.6	20.8	16.6
LnGrp LOS	D	C	C	D	C	C	C	B	B	C	C	B
Approach Vol, veh/h		686			970			613			543	
Approach Delay, s/veh		37.9			29.3			20.8			22.7	
Approach LOS		D			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	31.4	21.7		32.8	15.9	27.2		32.8				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	21.0	22.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+1/3), s	11.0	12.4		22.9	9.2	11.1		18.5				
Green Ext Time (p_c), s	0.5	3.3		4.0	0.0	6.6		5.0				
Intersection Summary												
HCM 2010 Ctrl Delay			28.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	377	85	31	487	20	35	34	5	4	75	188
Future Volume (veh/h)	211	377	85	31	487	20	35	34	5	4	75	188
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	220	393	89	35	547	22	47	46	7	5	85	214
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.89	0.89	0.89	0.74	0.74	0.74	0.88	0.88	0.88
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	466	1552	348	600	1015	896	247	213	26	80	119	287
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	855	2794	627	927	1827	1612	555	878	108	9	490	1185
Grp Volume(v), veh/h	220	241	241	35	547	22	100	0	0	304	0	0
Grp Sat Flow(s),veh/h/ln	855	1721	1699	927	1827	1612	1541	0	0	1684	0	0
Q Serve(g_s), s	10.3	3.4	3.5	1.0	8.9	0.3	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	19.3	3.4	3.5	4.4	8.9	0.3	2.0	0.0	0.0	7.8	0.0	0.0
Prop In Lane	1.00		0.37	1.00		1.00	0.47		0.07	0.02		0.70
Lane Grp Cap(c), veh/h	466	956	944	600	1015	896	486	0	0	486	0	0
V/C Ratio(X)	0.47	0.25	0.26	0.06	0.54	0.02	0.21	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	563	1152	1138	705	1223	1079	860	0	0	935	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	5.4	5.4	6.6	6.6	4.7	14.3	0.0	0.0	16.5	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.3	0.3	0.1	1.0	0.0	0.2	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	1.7	1.7	0.3	4.7	0.1	1.1	0.0	0.0	3.8	0.0	0.0
LnGrp Delay(d),s/veh	14.3	5.7	5.7	6.6	7.6	4.7	14.5	0.0	0.0	17.8	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		702			604			100			304	
Approach Delay, s/veh		8.4			7.4			14.5			17.8	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		30.7		16.3		30.7		16.3				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		31.5		24.0		31.5		24.0				
Max Q Clear Time (g_c+I1), s		21.3		4.0		10.9		9.8				
Green Ext Time (p_c), s		4.9		0.5		6.8		1.7				
Intersection Summary												
HCM 2010 Ctrl Delay				10.1								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)
 9: SR-33 & Sperry Ave

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	103	121	14	51	6	240	580	104	36	455	335
Future Volume (vph)	151	103	121	14	51	6	240	580	104	36	455	335
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	1662		1805	1836		1703	1792		1556	1810	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1703	1662		1805	1836		1703	1792		1556	1810	1553
Peak-hour factor, PHF	0.86	0.86	0.86	0.80	0.80	0.80	0.98	0.98	0.98	0.88	0.88	0.88
Adj. Flow (vph)	176	120	141	18	64	8	245	592	106	41	517	381
RTOR Reduction (vph)	0	50	0	0	5	0	0	6	0	0	0	236
Lane Group Flow (vph)	176	211	0	18	67	0	245	692	0	41	517	145
Heavy Vehicles (%)	6%	4%	6%	0%	2%	0%	6%	3%	7%	16%	5%	4%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	14.7	14.7		4.6	4.6		14.4	44.3		2.8	32.7	32.7
Effective Green, g (s)	14.7	14.7		4.6	4.6		14.4	44.3		2.8	32.7	32.7
Actuated g/C Ratio	0.17	0.17		0.05	0.05		0.17	0.52		0.03	0.38	0.38
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	291	284		96	98		285	924		50	689	591
v/s Ratio Prot	0.10	c0.13		0.01	c0.04		c0.14	c0.39		0.03	0.29	
v/s Ratio Perm												0.09
v/c Ratio	0.60	0.74		0.19	0.69		0.86	0.75		0.82	0.75	0.25
Uniform Delay, d1	32.9	33.8		38.9	39.9		34.8	16.4		41.3	23.1	18.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.5	10.1		0.9	18.1		21.8	5.5		63.8	7.4	1.0
Delay (s)	36.4	43.9		39.8	58.0		56.6	21.9		105.1	30.4	19.2
Level of Service	D	D		D	E		E	C		F	C	B
Approach Delay (s)		40.9			54.4			30.9			29.1	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			32.9				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			85.9				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			68.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	153	100	291	327	47	108	727	238	174	890	40
Future Volume (veh/h)	21	153	100	291	327	47	108	727	238	174	890	40
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1545	1545	1545	1570	1570	1900
Adj Flow Rate, veh/h	25	180	118	364	409	59	117	790	259	189	967	43
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.80	0.80	0.80	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	23	23	23	21	21	21
Cap, veh/h	57	204	133	452	470	68	225	865	559	219	1069	48
Arrive On Green	0.03	0.19	0.19	0.13	0.30	0.30	0.07	0.29	0.29	0.15	0.37	0.37
Sat Flow, veh/h	1774	1052	689	3442	1592	230	1471	2935	1313	1495	2910	129
Grp Volume(v), veh/h	25	0	298	364	0	468	117	790	259	189	496	514
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1721	0	1822	1471	1467	1313	1495	1492	1547
Q Serve(g_s), s	1.1	0.0	13.0	8.0	0.0	19.1	4.3	20.3	3.8	9.7	24.7	24.7
Cycle Q Clear(g_c), s	1.1	0.0	13.0	8.0	0.0	19.1	4.3	20.3	3.8	9.7	24.7	24.7
Prop In Lane	1.00		0.40	1.00		0.13	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	57	0	337	452	0	538	225	865	559	219	548	569
V/C Ratio(X)	0.44	0.00	0.88	0.80	0.00	0.87	0.52	0.91	0.46	0.86	0.90	0.90
Avail Cap(c_a), veh/h	136	0	369	1275	0	926	229	1053	644	248	669	694
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	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	37.2	0.0	30.7	33.0	0.0	26.2	19.9	26.7	4.9	32.6	23.5	23.5
Incr Delay (d2), s/veh	2.0	0.0	19.3	1.3	0.0	1.9	0.9	9.5	0.2	21.3	12.6	12.2
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	0.6	0.0	8.1	3.9	0.0	9.8	1.7	9.4	1.8	5.3	12.0	12.4
LnGrp Delay(d),s/veh	39.2	0.0	50.0	34.3	0.0	28.1	20.8	36.2	5.1	53.9	36.0	35.7
LnGrp LOS	D		D	C		C	C	D	A	D	D	D
Approach Vol, veh/h		323			832			1166			1199	
Approach Delay, s/veh		49.1			30.8			27.7			38.7	
Approach LOS		D			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	19.4	15.5	28.0	6.5	28.3	9.8	33.7				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 17	13.0	28.1	6.0	* 40	6.0	35.1				
Max Q Clear Time (g_c+fl), s	11.0	15.0	11.7	22.3	3.1	21.1	6.3	26.7				
Green Ext Time (p_c), s	0.3	0.1	0.0	0.7	0.0	1.0	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				34.2								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	205	41	127	328	186	105	760	26	29	919	266
Future Volume (veh/h)	46	205	41	127	328	186	105	760	26	29	919	266
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.97	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1818	1900	1810	1900	1900	1900	1845	1845	1881	1829	1900
Adj Flow Rate, veh/h	51	228	46	140	360	204	115	835	29	38	1194	345
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.77	0.77	0.77
Percent Heavy Veh, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	199	295	60	275	462	382	182	1737	773	693	1271	360
Arrive On Green	0.04	0.20	0.20	0.08	0.24	0.24	0.05	0.50	0.50	0.03	0.48	0.48
Sat Flow, veh/h	1723	1464	295	1723	1900	1568	1810	3505	1560	3476	2657	753
Grp Volume(v), veh/h	51	0	274	140	360	204	115	835	29	38	773	766
Grp Sat Flow(s),veh/h/ln	1723	0	1760	1723	1900	1568	1810	1752	1560	1738	1738	1673
Q Serve(g_s), s	2.2	0.0	13.7	5.7	16.5	10.5	3.0	14.7	0.9	0.5	38.9	41.0
Cycle Q Clear(g_c), s	2.2	0.0	13.7	5.7	16.5	10.5	3.0	14.7	0.9	0.5	38.9	41.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	199	0	355	275	462	382	182	1737	773	693	831	800
V/C Ratio(X)	0.26	0.00	0.77	0.51	0.78	0.53	0.63	0.48	0.04	0.05	0.93	0.96
Avail Cap(c_a), veh/h	235	0	526	480	833	688	246	2091	931	786	992	955
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	0.00	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	28.5	0.0	35.1	26.1	32.9	30.6	21.5	15.5	12.1	12.2	22.8	23.4
Incr Delay (d2), s/veh	0.2	0.0	2.0	0.5	1.1	0.4	1.3	0.1	0.0	0.0	12.3	17.1
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	0.0	0.0	6.8	2.8	8.7	4.6	1.5	7.1	0.4	0.2	21.3	22.5
LnGrp Delay(d),s/veh	28.8	0.0	37.1	26.6	33.9	31.0	22.8	15.6	12.1	12.2	35.1	40.5
LnGrp LOS	C		D	C	C	C	C	B	B	B	D	D
Approach Vol, veh/h		325			704			979			1577	
Approach Delay, s/veh		35.8			31.7			16.4			37.2	
Approach LOS		D			C			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	27.2	7.1	51.0	11.5	23.4	8.7	49.4				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.6	40.8	5.6	55.5	18.6	27.8	8.0	53.1				
Max Q Clear Time (g_c+14), s	14.2	18.5	2.5	16.7	7.7	15.7	5.0	43.0				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.0	0.0	0.3	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			30.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	0	188	280	16	239	73	119	651	0	240	1014	48
Future Volume (veh/h)	0	188	280	16	239	73	119	651	0	240	1014	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	1863	1863	1863	1863	1545	1545	1545	1570	1570	1900
Adj Flow Rate, veh/h	0	229	341	20	291	89	129	708	0	264	1114	53
Adj No. of Lanes	1	2	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	23	23	23	21	21	21
Cap, veh/h	105	868	388	267	457	388	155	1002	448	303	1271	60
Arrive On Green	0.00	0.25	0.25	0.25	0.25	0.25	0.11	0.34	0.00	0.20	0.44	0.44
Sat Flow, veh/h	999	3539	1583	838	1863	1583	1471	2935	1313	1495	2900	138
Grp Volume(v), veh/h	0	229	341	20	291	89	129	708	0	264	573	594
Grp Sat Flow(s),veh/h/ln	999	1770	1583	838	1863	1583	1471	1467	1313	1495	1492	1546
Q Serve(g_s), s	0.0	3.6	14.2	1.3	9.6	3.1	5.9	14.3	0.0	11.7	24.0	24.0
Cycle Q Clear(g_c), s	0.0	3.6	14.2	4.9	9.6	3.1	5.9	14.3	0.0	11.7	24.0	24.0
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	105	868	388	267	457	388	155	1002	448	303	654	678
V/C Ratio(X)	0.00	0.26	0.88	0.07	0.64	0.23	0.83	0.71	0.00	0.87	0.88	0.88
Avail Cap(c_a), veh/h	126	941	421	284	496	421	194	1072	480	380	728	755
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)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	20.8	24.8	22.8	23.1	20.6	30.0	19.6	0.0	26.4	17.5	17.5
Incr Delay (d2), s/veh	0.0	0.2	17.7	0.1	2.4	0.3	21.1	2.0	0.0	16.3	10.8	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	8.0	0.3	5.2	1.4	3.3	6.1	0.0	6.2	11.7	12.1
LnGrp Delay(d),s/veh	0.0	21.0	42.5	22.9	25.5	20.9	51.1	21.5	0.0	42.7	28.3	28.1
LnGrp LOS		C	D	C	C	C	D	C		D	C	C
Approach Vol, veh/h		570			400			837			1431	
Approach Delay, s/veh		33.9			24.3			26.1			30.9	
Approach LOS		C			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	7.9	29.2		21.4	11.2	35.8		21.4				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	17.4	25.0		18.2	9.0	33.4		18.2				
Max Q Clear Time (g_c+I1), s	16.3	16.3		16.2	7.9	26.0		11.6				
Green Ext Time (p_c), s	0.3	2.9		0.6	0.0	4.0		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay				29.4								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	397	145	234	209	8	269	19	150	0	3	1
Future Volume (veh/h)	9	397	145	234	209	8	269	19	150	0	3	1
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		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	950	1827	1759	1900	1660	1900	1845	950	1845	1900	950	1900
Adj Flow Rate, veh/h	13	584	213	468	418	16	727	51	405	0	6	2
Adj No. of Lanes	1	2	1	1	1	0	2	1	1	0	1	0
Peak Hour Factor	0.68	0.68	0.68	0.50	0.50	0.50	0.37	0.37	0.37	0.50	0.50	0.50
Percent Heavy Veh, %	100	4	8	0	15	15	3	100	3	100	100	100
Cap, veh/h	14	702	710	514	747	29	940	262	433	0	8	3
Arrive On Green	0.02	0.20	0.20	0.28	0.47	0.47	0.28	0.28	0.28	0.00	0.01	0.01
Sat Flow, veh/h	905	3471	1472	1810	1587	61	3408	950	1568	0	682	227
Grp Volume(v), veh/h	13	584	213	468	0	434	727	51	405	0	0	8
Grp Sat Flow(s),veh/h/ln	905	1736	1472	1810	0	1648	1704	950	1568	0	0	910
Q Serve(g_s), s	1.1	12.9	7.0	19.9	0.0	15.1	15.7	3.3	20.1	0.0	0.0	0.7
Cycle Q Clear(g_c), s	1.1	12.9	7.0	19.9	0.0	15.1	15.7	3.3	20.1	0.0	0.0	0.7
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	0.00		0.25
Lane Grp Cap(c), veh/h	14	702	710	514	0	775	940	262	433	0	0	11
V/C Ratio(X)	0.92	0.83	0.30	0.91	0.00	0.56	0.77	0.19	0.94	0.00	0.00	0.72
Avail Cap(c_a), veh/h	62	762	736	601	0	796	940	262	433	0	0	68
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	30.5	12.7	27.6	0.0	15.2	26.6	22.1	28.2	0.0	0.0	39.2
Incr Delay (d2), s/veh	89.0	7.4	0.2	16.5	0.0	0.8	4.0	0.4	27.9	0.0	0.0	60.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.9	4.4	12.2	0.0	7.1	7.9	0.9	12.0	0.0	0.0	0.4
LnGrp Delay(d),s/veh	128.2	37.9	12.9	44.1	0.0	16.0	30.6	22.4	56.1	0.0	0.0	99.9
LnGrp LOS	F	D	B	D		B	C	C	E			F
Approach Vol, veh/h		810			902			1183			8	
Approach Delay, s/veh		32.8			30.6			39.0			99.9	
Approach LOS		C			C			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.5	27.1	20.6		5.5	5.8	42.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.0	26.5	17.5		6.0	5.5	38.5				
Max Q Clear Time (g_c+1), s		22.1	21.9	14.9		2.7	3.1	17.1				
Green Ext Time (p_c), s		0.0	0.7	1.3		0.0	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay			34.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↖	↑↑	↗	↔↔	↑↑	↗	↖	↑↑	↗
Traffic Volume (veh/h)	212	427	149	49	303	77	119	623	57	32	540	194
Future Volume (veh/h)	212	427	149	49	303	77	119	623	57	32	540	194
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	1863	1484	1900	1827	1900	1557	1496	1827	1681	1900
Adj Flow Rate, veh/h	848	1708	596	71	439	112	138	724	66	44	750	269
Adj No. of Lanes	2	2	1	1	2	1	2	2	1	1	2	1
Peak Hour Factor	0.25	0.25	0.25	0.69	0.69	0.69	0.86	0.86	0.86	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	28	0	4	0	22	27	4	13	0
Cap, veh/h	963	1804	807	82	1040	447	146	728	313	56	756	382
Arrive On Green	0.28	0.51	0.51	0.06	0.29	0.29	0.04	0.25	0.25	0.03	0.24	0.24
Sat Flow, veh/h	3442	3539	1583	1414	3610	1553	3510	2959	1272	1740	3195	1615
Grp Volume(v), veh/h	848	1708	596	71	439	112	138	724	66	44	750	269
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1414	1805	1553	1755	1480	1272	1740	1597	1615
Q Serve(g_s), s	28.3	55.0	35.6	6.0	11.9	6.7	4.7	29.4	5.0	3.0	28.2	18.4
Cycle Q Clear(g_c), s	28.3	55.0	35.6	6.0	11.9	6.7	4.7	29.4	5.0	3.0	28.2	18.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	963	1804	807	82	1040	447	146	728	313	56	756	382
V/C Ratio(X)	0.88	0.95	0.74	0.86	0.42	0.25	0.95	0.99	0.21	0.79	0.99	0.70
Avail Cap(c_a), veh/h	1415	1817	813	82	1040	447	146	728	313	72	756	382
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	41.4	27.9	23.2	56.2	34.7	32.9	57.5	45.3	36.1	57.8	45.8	42.1
Incr Delay (d2), s/veh	4.7	11.0	3.6	56.6	0.3	0.3	58.3	31.7	0.3	33.9	30.5	5.7
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	14.1	29.6	16.4	3.6	6.0	2.9	3.5	15.2	1.8	2.0	15.6	8.8
LnGrp Delay(d),s/veh	46.1	38.9	26.7	112.9	35.0	33.2	115.9	77.0	36.4	91.7	76.3	47.8
LnGrp LOS	D	D	C	F	C	C	F	E	D	F	E	D
Approach Vol, veh/h		3152			622			928			1063	
Approach Delay, s/veh		38.6			43.6			79.9			69.7	
Approach LOS		D			D			E			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	7.9	34.7	11.5	66.3	9.0	33.6	38.2	39.6				
Change Period (Y+Rc), s	4.0	5.1	4.5	* 4.9	4.0	* 5.1	4.5	4.9				
Max Green Setting (Gmax), s	5.0	28.0	7.0	* 62	5.0	* 29	49.5	19.0				
Max Q Clear Time (g_c+1/3), s	15.0	31.4	8.0	57.0	6.7	30.2	30.3	13.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	4.3	0.0	0.0	3.3	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			51.5									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑	↗	↗	↑↑↑	↗	↔↔	↑↑	↗
Traffic Volume (veh/h)	214	362	91	209	82	0	1	677	149	206	568	0
Future Volume (veh/h)	214	362	91	209	82	0	1	677	149	206	568	0
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	1863	1759	1759	1759	1610	1610	1610	1638	1638	1638
Adj Flow Rate, veh/h	856	1448	364	243	95	0	1	940	207	286	789	0
Adj No. of Lanes	2	2	1	2	1	1	1	3	1	2	2	1
Peak Hour Factor	0.25	0.25	0.25	0.86	0.86	0.86	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	8	8	8	18	18	18	16	16	16
Cap, veh/h	951	1454	650	261	378	471	2	1012	425	303	1024	458
Arrive On Green	0.28	0.41	0.41	0.08	0.21	0.00	0.00	0.23	0.23	0.10	0.33	0.00
Sat Flow, veh/h	3442	3539	1583	3250	1759	1495	1533	4396	1369	3026	3112	1392
Grp Volume(v), veh/h	856	1448	364	243	95	0	1	940	207	286	789	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1625	1759	1495	1533	1465	1369	1513	1556	1392
Q Serve(g_s), s	28.7	48.9	21.1	8.9	5.4	0.0	0.1	25.1	14.7	11.2	27.3	0.0
Cycle Q Clear(g_c), s	28.7	48.9	21.1	8.9	5.4	0.0	0.1	25.1	14.7	11.2	27.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	951	1454	650	261	378	471	2	1012	425	303	1024	458
V/C Ratio(X)	0.90	1.00	0.56	0.93	0.25	0.00	0.48	0.93	0.49	0.94	0.77	0.00
Avail Cap(c_a), veh/h	1150	1454	650	261	378	471	70	1020	427	303	1024	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.8	35.2	27.0	54.8	39.0	0.0	59.8	45.1	33.6	53.5	36.1	0.0
Incr Delay (d2), s/veh	8.6	22.6	1.1	38.0	0.3	0.0	114.2	14.2	0.9	36.8	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	28.3	9.4	5.4	2.6	0.0	0.1	11.5	5.7	6.2	12.2	0.0
LnGrp Delay(d),s/veh	50.4	57.7	28.1	92.7	39.4	0.0	173.9	59.3	34.4	90.3	39.8	0.0
LnGrp LOS	D	E	C	F	D		F	E	C	F	D	
Approach Vol, veh/h		2668			338			1148			1075	
Approach Delay, s/veh		51.3			77.7			54.9			53.2	
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	16.0	33.4	15.4	55.0	4.2	45.2	38.9	31.5				
Change Period (Y+Rc), s	4.0	5.8	5.8	5.8	4.0	5.8	5.8	5.8				
Max Green Setting (Gmax), s	12.0	27.8	9.6	49.2	5.5	34.3	40.0	18.8				
Max Q Clear Time (g_c+11.0), s	11.0	27.1	10.9	50.9	2.1	29.3	30.7	7.4				
Green Ext Time (p_c), s	0.0	0.5	0.0	0.0	0.0	2.2	2.4	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			54.2									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 16: Baldwin Rd & Zacharias Rd

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	784	179	283	217	17	78	749	218	20	850	0
Future Volume (veh/h)	0	784	179	283	217	17	78	749	218	20	850	0
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	1863	1759	1759	1759	1743	1743	1743	1667	1667	1900
Adj Flow Rate, veh/h	0	1089	249	329	252	20	98	936	272	22	924	0
Adj No. of Lanes	1	2	1	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.72	0.72	0.72	0.86	0.86	0.86	0.80	0.80	0.80	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	8	8	8	9	9	9	14	14	14
Cap, veh/h	554	1104	494	345	354	159	110	1143	511	36	956	0
Arrive On Green	0.00	0.31	0.31	0.11	0.11	0.11	0.07	0.35	0.35	0.02	0.30	0.00
Sat Flow, veh/h	1774	3539	1583	3250	3343	1495	1660	3312	1482	1587	3250	0
Grp Volume(v), veh/h	0	1089	249	329	252	20	98	936	272	22	924	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1625	1671	1495	1660	1656	1482	1587	1583	0
Q Serve(g_s), s	0.0	30.6	12.8	10.1	7.3	1.2	5.9	25.8	14.7	1.4	28.8	0.0
Cycle Q Clear(g_c), s	0.0	30.6	12.8	10.1	7.3	1.2	5.9	25.8	14.7	1.4	28.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	554	1104	494	345	354	159	110	1143	511	36	956	0
V/C Ratio(X)	0.00	0.99	0.50	0.95	0.71	0.13	0.89	0.82	0.53	0.61	0.97	0.00
Avail Cap(c_a), veh/h	554	1104	494	345	354	159	110	1143	511	87	956	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	34.2	28.1	44.5	43.2	40.5	46.4	29.9	26.3	48.4	34.4	0.0
Incr Delay (d2), s/veh	0.0	23.7	0.8	36.6	6.5	0.4	54.2	4.8	1.1	15.2	21.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.5	5.7	6.3	3.7	0.5	4.3	12.5	6.2	0.8	15.4	0.0
LnGrp Delay(d),s/veh	0.0	57.9	28.9	81.1	49.7	40.9	100.6	34.7	27.3	63.6	55.6	0.0
LnGrp LOS		E	C	F	D	D	F	C	C	E	E	
Approach Vol, veh/h		1338			601			1306			946	
Approach Delay, s/veh		52.5			66.6			38.1			55.8	
Approach LOS		D			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	40.3		37.0	10.6	36.0		16.4				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	31.3		31.2	6.6	30.2		10.6				
Max Q Clear Time (g_c+1), s	13.4	27.8		32.6	7.9	30.8		12.1				
Green Ext Time (p_c), s	0.0	2.2		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				50.8								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	241	1154	803	291	544	406		
Future Volume (veh/h)	241	1154	803	291	544	406		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1881	1712	1667	1667		
Adj Flow Rate, veh/h	339	1625	1057	383	579	432		
Adj No. of Lanes	1	2	2	2	2	1		
Peak Hour Factor	0.71	0.71	0.76	0.76	0.94	0.94		
Percent Heavy Veh, %	2	2	1	11	14	14		
Cap, veh/h	410	1559	1141	1994	732	327		
Arrive On Green	0.23	0.23	0.33	0.61	0.23	0.23		
Sat Flow, veh/h	1774	2787	3476	3338	3250	1417		
Grp Volume(v), veh/h	339	1625	1057	383	579	432		
Grp Sat Flow(s),veh/h/ln	1774	1393	1738	1626	1583	1417		
Q Serve(g_s), s	13.5	17.2	21.9	3.8	12.8	17.2		
Cycle Q Clear(g_c), s	13.5	17.2	21.9	3.8	12.8	17.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	410	1559	1141	1994	732	327		
V/C Ratio(X)	0.83	1.04	0.93	0.19	0.79	1.32		
Avail Cap(c_a), veh/h	410	1559	1167	2019	732	327		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	27.2	16.4	24.1	6.3	26.9	28.6		
Incr Delay (d2), s/veh	13.1	34.8	12.3	0.0	5.9	163.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.1	30.6	12.4	1.7	6.1	21.5		
LnGrp Delay(d),s/veh	40.3	51.2	36.5	6.4	32.8	192.4		
LnGrp LOS	D	F	D	A	C	F		
Approach Vol, veh/h	1964			1440	1011			
Approach Delay, s/veh	49.3			28.5	101.0			
Approach LOS	D			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		51.4		23.0	28.4	23.0		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		46.2		17.2	25.0	17.2		
Max Q Clear Time (g_c+1), s		5.8		19.2	23.9	19.2		
Green Ext Time (p_c), s		2.5		0.0	0.6	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			54.3					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

Existing Plus Approved Plus Project (Mitigated)
 Timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	163	109	752	54	148	1731		
Future Volume (veh/h)	163	109	752	54	148	1731		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1743	1712	1900	1667	1667		
Adj Flow Rate, veh/h	230	154	977	70	154	1803		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.71	0.71	0.77	0.77	0.96	0.96		
Percent Heavy Veh, %	9	9	11	11	14	14		
Cap, veh/h	279	249	1413	101	188	2035		
Arrive On Green	0.17	0.17	0.46	0.46	0.12	0.64		
Sat Flow, veh/h	1660	1482	3164	221	1587	3250		
Grp Volume(v), veh/h	230	154	516	531	154	1803		
Grp Sat Flow(s),veh/h/ln	1660	1482	1626	1673	1587	1583		
Q Serve(g_s), s	8.2	5.9	15.4	15.4	5.8	29.0		
Cycle Q Clear(g_c), s	8.2	5.9	15.4	15.4	5.8	29.0		
Prop In Lane	1.00	1.00		0.13	1.00			
Lane Grp Cap(c), veh/h	279	249	746	768	188	2035		
V/C Ratio(X)	0.82	0.62	0.69	0.69	0.82	0.89		
Avail Cap(c_a), veh/h	303	270	773	796	233	2177		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	24.6	23.7	13.2	13.2	26.4	9.1		
Incr Delay (d2), s/veh	15.6	3.7	2.5	2.5	16.7	4.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.7	7.4	7.6	3.4	13.6		
LnGrp Delay(d),s/veh	40.2	27.4	15.7	15.6	43.1	13.7		
LnGrp LOS	D	C	B	B	D	B		
Approach Vol, veh/h	384		1047		1957			
Approach Delay, s/veh	35.1		15.7		16.0			
Approach LOS	D		B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	1.3	34.0				45.3		16.1
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	29.2					42.2		11.2
Max Q Clear Time (g_c+1), s	17.4					31.0		10.2
Green Ext Time (p_c), s	0.0	4.9				8.5		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			18.1					
HCM 2010 LOS			B					

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

20: SR-33 & Baldwin Rd

Timing Plan: PM Peak

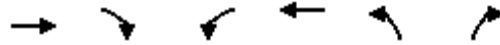


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	699	65	0	737	1097	123
Future Volume (vph)	699	65	0	737	1097	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.8	5.8	
Lane Util. Factor	0.97			1.00	0.95	
Frt	0.99			1.00	0.98	
Flt Protected	0.96			1.00	1.00	
Satd. Flow (prot)	3193			1712	3119	
Flt Permitted	0.96			1.00	1.00	
Satd. Flow (perm)	3193			1712	3119	
Peak-hour factor, PHF	0.90	0.90	0.76	0.76	0.88	0.88
Adj. Flow (vph)	777	72	0	970	1247	140
RTOR Reduction (vph)	8	0	0	0	7	0
Lane Group Flow (vph)	841	0	0	970	1380	0
Heavy Vehicles (%)	9%	9%	1%	11%	14%	14%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	24.6			51.5	51.5	
Effective Green, g (s)	24.6			51.5	51.5	
Actuated g/C Ratio	0.28			0.59	0.59	
Clearance Time (s)	5.8			5.8	5.8	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	895			1005	1831	
v/s Ratio Prot	c0.26			c0.57	0.44	
v/s Ratio Perm						
v/c Ratio	0.94			0.97	0.75	
Uniform Delay, d1	30.8			17.2	13.4	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	17.1			20.3	1.8	
Delay (s)	47.9			37.5	15.2	
Level of Service	D			D	B	
Approach Delay (s)	47.9			37.5	15.2	
Approach LOS	D			D	B	
Intersection Summary						
HCM 2000 Control Delay			30.6		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			1.01			
Actuated Cycle Length (s)			87.7		Sum of lost time (s)	15.6
Intersection Capacity Utilization			70.4%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

21: Rogers Rd & SR-33

Timing Plan: PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵↵↵	
Traffic Volume (vph)	1257	128	5	284	484	41
Future Volume (vph)	1257	128	5	284	484	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.95		1.00	1.00	0.97	
Frt	0.99		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3207		1583	1667	2951	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	3207		1583	1667	2951	
Peak-hour factor, PHF	0.89	0.89	0.82	0.82	0.80	0.80
Adj. Flow (vph)	1412	144	6	346	605	51
RTOR Reduction (vph)	8	0	0	0	7	0
Lane Group Flow (vph)	1548	0	6	346	649	0
Heavy Vehicles (%)	11%	11%	14%	14%	18%	18%
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	44.0		0.9	48.9	21.4	
Effective Green, g (s)	44.0		0.9	48.9	21.4	
Actuated g/C Ratio	0.54		0.01	0.60	0.26	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1722		17	995	771	
v/s Ratio Prot	c0.48		0.00	c0.21	c0.22	
v/s Ratio Perm						
v/c Ratio	0.90		0.35	0.35	0.84	
Uniform Delay, d1	17.0		40.2	8.4	28.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	6.7		12.2	0.2	8.3	
Delay (s)	23.6		52.4	8.6	36.9	
Level of Service	C		D	A	D	
Approach Delay (s)	23.6			9.3	36.9	
Approach LOS	C			A	D	

Intersection Summary

HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	15.6
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
 22: Sycamore Ave & Eucalyptus Ave

Existing Plus Approved Plus Project (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	35	222	30	0	144	12	5	96	10	39	310	17
Future Volume (veh/h)	35	222	30	0	144	12	5	96	10	39	310	17
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	1900	1759	1900	1900	1743	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	47	296	40	0	267	22	10	192	20	49	392	22
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.75	0.75	0.75	0.54	0.54	0.54	0.50	0.50	0.50	0.79	0.79	0.79
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	2	2	2
Cap, veh/h	180	437	55	0	515	42	143	578	58	179	570	30
Arrive On Green	0.32	0.32	0.32	0.00	0.32	0.32	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	113	1350	171	0	1589	131	28	1617	163	106	1594	85
Grp Volume(v), veh/h	383	0	0	0	0	289	222	0	0	463	0	0
Grp Sat Flow(s),veh/h/ln1633	0	0	0	0	0	1720	1808	0	0	1785	0	0
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	5.7	0.0	0.0	0.0	0.0	3.9	2.5	0.0	0.0	6.2	0.0	0.0
Prop In Lane	0.12		0.10	0.00		0.08	0.05		0.09	0.11		0.05
Lane Grp Cap(c), veh/h	672	0	0	0	0	557	779	0	0	779	0	0
V/C Ratio(X)	0.57	0.00	0.00	0.00	0.00	0.52	0.28	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	1171	0	0	0	0	1097	1273	0	0	1266	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.3	0.0	0.0	0.0	0.0	7.8	6.6	0.0	0.0	7.8	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.0	0.0	0.8	0.2	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln2.7	0.0	0.0	0.0	0.0	0.0	1.9	1.3	0.0	0.0	3.2	0.0	0.0
LnGrp Delay(d),s/veh	9.1	0.0	0.0	0.0	0.0	8.5	6.8	0.0	0.0	8.5	0.0	0.0
LnGrp LOS	A					A	A			A		
Approach Vol, veh/h		383			289			222			463	
Approach Delay, s/veh		9.1			8.5			6.8			8.5	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.6		13.6		14.6		13.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+1), s		4.5		7.7		8.2		5.9				
Green Ext Time (p_c), s		0.9		1.5		1.9		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				8.4								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	19	19	235	2	4	1	41	89	41	3	51	1
Future Vol, veh/h	19	19	235	2	4	1	41	89	41	3	51	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	58	58	58	91	91	91	72	72	72
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	28	28	351	3	7	2	45	98	45	4	71	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	295	313	72	480	291	121	72	0	0	143	0	0
Stage 1	80	80	-	211	211	-	-	-	-	-	-	-
Stage 2	215	233	-	269	80	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	645	592	974	485	608	912	1528	-	-	1440	-	-
Stage 1	914	817	-	775	715	-	-	-	-	-	-	-
Stage 2	774	701	-	721	815	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	622	573	974	291	589	912	1528	-	-	1440	-	-
Mov Cap-2 Maneuver	622	573	-	291	589	-	-	-	-	-	-	-
Stage 1	887	815	-	753	694	-	-	-	-	-	-	-
Stage 2	742	681	-	444	813	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.3		12.8		1.8		0.4	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	895	474	1440	-	-
HCM Lane V/C Ratio	0.029	-	-	0.455	0.025	0.003	-	-
HCM Control Delay (s)	7.4	-	-	12.3	12.8	7.5	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.4	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
24: Sycamore Ave & Las Palmas Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	384	7	43	658	53	5	26	50	274	132	61
Future Volume (veh/h)	7	384	7	43	658	53	5	26	50	274	132	61
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	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	8	422	8	47	723	58	6	33	64	308	148	69
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.78	0.78	0.78	0.89	0.89	0.89
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	16	724	14	67	756	61	131	42	81	347	235	110
Arrive On Green	0.01	0.44	0.44	0.04	0.47	0.47	0.07	0.07	0.07	0.20	0.20	0.20
Sat Flow, veh/h	1616	1659	31	1691	1623	130	1774	568	1101	1774	1203	561
Grp Volume(v), veh/h	8	0	430	47	0	781	6	0	97	308	0	217
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1668	1774	0	1764
Q Serve(g_s), s	0.4	0.0	16.2	2.3	0.0	36.1	0.3	0.0	4.8	14.2	0.0	9.5
Cycle Q Clear(g_c), s	0.4	0.0	16.2	2.3	0.0	36.1	0.3	0.0	4.8	14.2	0.0	9.5
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.32
Lane Grp Cap(c), veh/h	16	0	738	67	0	816	131	0	123	347	0	345
V/C Ratio(X)	0.49	0.00	0.58	0.70	0.00	0.96	0.05	0.00	0.79	0.89	0.00	0.63
Avail Cap(c_a), veh/h	96	0	789	121	0	839	131	0	123	363	0	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	0.0	17.9	39.9	0.0	21.6	36.2	0.0	38.3	32.9	0.0	31.0
Incr Delay (d2), s/veh	20.8	0.0	1.0	12.5	0.0	21.0	0.1	0.0	28.2	21.7	0.0	3.2
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	0.3	0.0	7.7	1.3	0.0	22.1	0.1	0.0	3.2	9.0	0.0	4.9
LnGrp Delay(d),s/veh	62.2	0.0	18.9	52.3	0.0	42.6	36.3	0.0	66.5	54.6	0.0	34.2
LnGrp LOS	E		B	D		D	D		E	D		C
Approach Vol, veh/h		438			828			103			525	
Approach Delay, s/veh		19.7			43.1			64.7			46.2	
Approach LOS		B			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.0	7.3	42.5		22.2	4.9	44.9				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		6.2	6.0	39.2		17.2	5.0	40.2				
Max Q Clear Time (g_c+I1), s		6.8	4.3	18.2		16.2	2.4	38.1				
Green Ext Time (p_c), s		0.0	0.0	2.4		0.3	0.0	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			39.7									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

Existing Plus Approved Plus Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	534	8	50	805	52	9	12	20	205	54	26
Future Volume (veh/h)	5	534	8	50	805	52	9	12	20	205	54	26
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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	593	9	52	830	54	11	15	25	223	59	28
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.97	0.97	0.97	0.79	0.79	0.79	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	13	847	13	75	899	58	114	151	199	338	67	32
Arrive On Green	0.01	0.51	0.51	0.04	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1616	1667	25	1691	1649	107	234	636	836	1071	283	134
Grp Volume(v), veh/h	6	0	602	52	0	884	51	0	0	310	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1706	0	0	1488	0	0
Q Serve(g_s), s	0.3	0.0	20.2	2.3	0.0	34.3	0.0	0.0	0.0	13.1	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	20.2	2.3	0.0	34.3	1.7	0.0	0.0	14.8	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	13	0	860	75	0	957	464	0	0	437	0	0
V/C Ratio(X)	0.47	0.00	0.70	0.69	0.00	0.92	0.11	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	109	0	1051	114	0	1091	582	0	0	545	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.8	0.0	14.0	35.1	0.0	15.5	22.3	0.0	0.0	27.1	0.0	0.0
Incr Delay (d2), s/veh	25.0	0.0	1.6	10.9	0.0	11.9	0.1	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	9.7	1.3	0.0	19.6	0.8	0.0	0.0	6.5	0.0	0.0
LnGrp Delay(d),s/veh	61.8	0.0	15.5	46.0	0.0	27.4	22.4	0.0	0.0	30.3	0.0	0.0
LnGrp LOS	E		B	D		C	C			C		
Approach Vol, veh/h		608			936			51			310	
Approach Delay, s/veh		16.0			28.4			22.4			30.3	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.5	7.3	43.6		23.5	4.6	46.3				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		23.2	5.0	46.2		23.2	5.0	46.2				
Max Q Clear Time (g_c+1), s		3.7	4.3	22.2		16.8	2.3	36.3				
Green Ext Time (p_c), s		0.2	0.0	3.8		0.9	0.0	4.2				
Intersection Summary												
HCM 2010 Ctrl Delay			24.6									
HCM 2010 LOS			C									

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)
 26: Las Palmas Ave/W Main Ave & Jennings Rd

Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷		↶	↶
Traffic Volume (vph)	277	984	562	0	9	697
Future Volume (vph)	277	984	562	0	9	697
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.8	5.8		5.8	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	0.95
Frt	1.00	1.00	1.00		0.85	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1626	1712	1810		1588	1504
Flt Permitted	0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1626	1712	1810		1588	1504
Peak-hour factor, PHF	0.89	0.89	0.82	0.82	0.87	0.87
Adj. Flow (vph)	311	1106	685	0	10	801
RTOR Reduction (vph)	0	0	0	0	342	87
Lane Group Flow (vph)	311	1106	685	0	60	322
Heavy Vehicles (%)	11%	11%	5%	5%	2%	2%
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases						6
Actuated Green, G (s)	18.5	56.2	33.7		9.9	28.4
Effective Green, g (s)	18.5	56.2	33.7		9.9	28.4
Actuated g/C Ratio	0.24	0.72	0.43		0.13	0.37
Clearance Time (s)	4.0	5.8	5.8		5.8	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	387	1238	785		202	549
v/s Ratio Prot	0.19	c0.65	0.38		0.04	c0.14
v/s Ratio Perm						0.07
v/c Ratio	0.80	0.89	0.87		0.30	0.59
Uniform Delay, d1	27.9	8.4	20.0		30.7	19.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	11.5	8.5	10.5		0.8	1.6
Delay (s)	39.3	16.9	30.6		31.6	21.5
Level of Service	D	B	C		C	C
Approach Delay (s)		21.9	30.6		26.5	
Approach LOS		C	C		C	

Intersection Summary

HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	15.6
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis Existing Plus Approved Plus Project (Mitigated)

27: SR-33 & New Connection (Project)

Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	514	433	353	541	358
Future Volume (vph)	100	514	433	353	541	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	0.97	0.95	0.95	
Frt	0.90	0.85	1.00	1.00	0.94	
Flt Protected	0.98	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1647	1504	3433	3539	3328	
Flt Permitted	0.98	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1647	1504	3433	3539	3328	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	559	471	384	588	389
RTOR Reduction (vph)	141	259	0	0	183	0
Lane Group Flow (vph)	197	71	471	384	794	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	11.0	11.0	9.6	30.9	16.8	
Effective Green, g (s)	11.0	11.0	9.6	30.9	16.8	
Actuated g/C Ratio	0.22	0.22	0.19	0.61	0.33	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	355	325	647	2148	1098	
v/s Ratio Prot	c0.12		c0.14	0.11	c0.24	
v/s Ratio Perm		0.05				
v/c Ratio	0.55	0.22	0.73	0.18	0.72	
Uniform Delay, d1	17.8	16.4	19.4	4.4	15.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.3	4.1	0.0	2.4	
Delay (s)	19.6	16.8	23.5	4.4	17.4	
Level of Service	B	B	C	A	B	
Approach Delay (s)	18.2			15.0	17.4	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
28: Ward Ave & New Connection (Project)

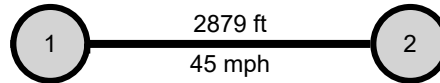
Existing Plus Approved Plus Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	402	559	200	391	200	388	0	212	0	0	0
Future Volume (veh/h)	0	402	559	200	391	200	388	0	212	0	0	0
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	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	0	437	608	217	425	217	422	0	230	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	829	705	269	775	396	676	0	311	0	3	0
Arrive On Green	0.00	0.45	0.45	0.15	0.67	0.67	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1164	594	3442	0	1583	0	1863	0
Grp Volume(v), veh/h	0	437	608	217	0	642	422	0	230	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1758	1721	0	1583	0	1863	0
Q Serve(g_s), s	0.0	11.1	22.6	7.7	0.0	12.6	7.3	0.0	8.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.1	22.6	7.7	0.0	12.6	7.3	0.0	8.9	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	829	705	269	0	1170	676	0	311	0	3	0
V/C Ratio(X)	0.00	0.53	0.86	0.81	0.00	0.55	0.62	0.00	0.74	0.00	0.00	0.00
Avail Cap(c_a), veh/h	489	1082	919	484	0	1170	965	0	444	0	514	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.1	16.3	26.8	0.0	5.7	24.0	0.0	24.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	6.8	5.7	0.0	0.5	1.0	0.0	3.9	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	11.1	4.2	0.0	6.1	3.5	0.0	4.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	13.6	23.1	32.4	0.0	6.3	25.0	0.0	28.6	0.0	0.0	0.0
LnGrp LOS		B	C	C		A	C		C			
Approach Vol, veh/h		1045			859			652			0	
Approach Delay, s/veh		19.1			12.9			26.2			0.0	
Approach LOS		B			B			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.3	14.4	33.6		0.0	0.0	48.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.3	17.8	37.9		18.0	18.0	37.7				
Max Q Clear Time (g_c+I1), s		10.9	9.7	24.6		0.0	0.0	14.6				
Green Ext Time (p_c), s		1.9	0.4	4.5		0.0	0.0	4.8				
Intersection Summary												
HCM 2010 Ctrl Delay				18.8								
HCM 2010 LOS				B								

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	49.78			45.23		
1	Running Speed, mph	39.43			43.40		
1	Through Delay, s/veh	9.96			78.06		
1	Travel Time, s	59.74			123.29		
1	Travel Speed, mph	32.86			15.92		
1	Stop Rate, stops/veh	0.40			1.05		
1	Spatial Stop Rate, stops/mi	0.74			1.92		
1	Through vol/cap Ratio	0.85			0.96		
1	Percent of Base FFS	72.60			34.17		
1	Level of Service	B			E		
1	Auto Traveler Perception Score	2.25			2.43		

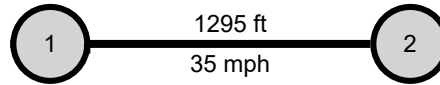
Multimodal Results (Segment)					
1	Pedestrian Segment LOS Score / LOS		F	3.98	D
1	Bicycle Segment LOS Score / LOS	4.89	E	4.97	E
1	Transit Segment LOS Score / LOS	6.97	F	6.55	F

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		59.74		123.29	
Facility Travel Speed, mph		32.86		15.92	
Facility Base Free Flow Speed, mph		45.26		46.59	
Facility Percent of Base FFS		72.60		34.17	
Facility Level of Service		B		E	
Facility Auto Traveler Perception Score		2.25		2.43	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS			3.98	D
Bicycle Facility LOS Score / LOS	4.89	E	4.97	E
Transit Facility LOS Score / LOS	6.97	F	6.55	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.58			26.77	
1	Running Speed, mph		33.21			32.99	
1	Through Delay, s/veh		1.49			21.61	
1	Travel Time, s		28.07			48.38	
1	Travel Speed, mph		31.45			18.25	
1	Stop Rate, stops/veh		0.36			0.76	
1	Spatial Stop Rate, stops/mi		1.47			3.09	
1	Through vol/cap Ratio		0.50			0.87	
1	Percent of Base FFS		82.77			47.88	
1	Level of Service		B			D	
1	Auto Traveler Perception Score		2.36			2.63	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.67	D	3.81	D
1	Bicycle Segment LOS Score / LOS	3.83	D	6.97	F
1	Transit Segment LOS Score / LOS	4.54	E	4.52	E

Facility Output Data

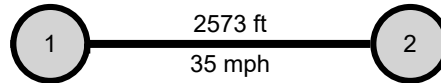
		Northbound		Southbound	
Facility Travel Time, s		28.07		48.38	
Facility Travel Speed, mph		31.45		18.25	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		82.77		47.88	
Facility Level of Service		B		D	
Facility Auto Traveler Perception Score		2.36		2.63	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.67	D	3.81	D
Bicycle Facility LOS Score / LOS	3.83	D	6.97	F
Transit Facility LOS Score / LOS	4.54	E	4.52	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2573	2573	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	40.75			40.62		
1	Running Time, s	46.07			45.15		
1	Running Speed, mph	38.08			38.85		
1	Through Delay, s/veh	0.71			0.27		
1	Travel Time, s	46.79			45.42		
1	Travel Speed, mph	37.50			38.62		
1	Stop Rate, stops/veh	0.01			0.01		
1	Spatial Stop Rate, stops/mi	0.03			0.02		
1	Through vol/cap Ratio	0.36			0.13		
1	Percent of Base FFS	92.02			95.08		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.14			2.14		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.81	D	3.47	C
1	Transit Segment LOS Score / LOS	4.63	E	4.44	E

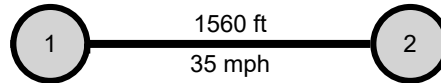
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	46.79	45.42	
Facility Travel Speed, mph	37.50	38.62			
Facility Base Free Flow Speed, mph	40.75	40.62			
Facility Percent of Base FFS	92.02	95.08			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.14	2.14			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.81	D	3.47 C
Transit Facility LOS Score / LOS	4.63	E	4.44 E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	27.77			28.08		
1	Running Speed, mph	38.30			37.87		
1	Through Delay, s/veh	1.16			1.38		
1	Travel Time, s	28.93			29.47		
1	Travel Speed, mph	36.77			36.10		
1	Stop Rate, stops/veh	0.41			0.42		
1	Spatial Stop Rate, stops/mi	1.40			1.43		
1	Through vol/cap Ratio	0.02			0.26		
1	Percent of Base FFS	88.01			86.41		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.57			2.58		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.33	E	4.67	E
1	Transit Segment LOS Score / LOS	6.46	F	6.65	F

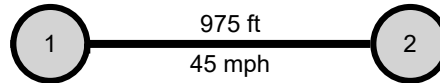
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	28.93	29.47	
Facility Travel Speed, mph	36.77	36.10			
Facility Base Free Flow Speed, mph	41.78	41.78			
Facility Percent of Base FFS	88.01	86.41			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.57	2.58			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.33	E	4.67
Transit Facility LOS Score / LOS	6.46	F	6.65

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_A		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	19.08			18.55		
1	Running Speed, mph	34.85			35.83		
1	Through Delay, s/veh	1.61			0.85		
1	Travel Time, s	20.69			19.41		
1	Travel Speed, mph	32.13			34.25		
1	Stop Rate, stops/veh	0.19			0.19		
1	Spatial Stop Rate, stops/mi	1.01			1.01		
1	Through vol/cap Ratio	0.87			0.56		
1	Percent of Base FFS	70.05			74.67		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.51			2.51		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.82	D	3.64	D
1	Transit Segment LOS Score / LOS	6.90	F	6.77	F

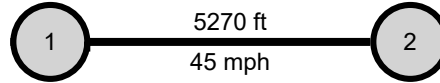
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	20.69	19.41	
Facility Travel Speed, mph	32.13	34.25			
Facility Base Free Flow Speed, mph	45.87	45.87			
Facility Percent of Base FFS	70.05	74.67			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.51	2.51			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.82	D	3.64
Transit Facility LOS Score / LOS	6.90	F	6.77

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave_AM.xus		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	84.22			83.91		
1	Running Speed, mph	42.67			42.82		
1	Through Delay, s/veh	16.54			22.75		
1	Travel Time, s	100.76			106.65		
1	Travel Speed, mph	35.66			33.69		
1	Stop Rate, stops/veh	0.63			0.72		
1	Spatial Stop Rate, stops/mi	0.63			0.72		
1	Through vol/cap Ratio	0.86			0.93		
1	Percent of Base FFS	78.98			74.62		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.23			2.25		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.99	D	4.34	E
1	Transit Segment LOS Score / LOS	6.77	F	6.75	F

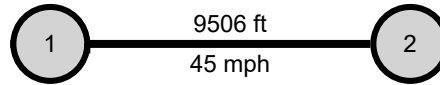
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	100.76		106.65
Facility Travel Speed, mph	35.66		33.69		
Facility Base Free Flow Speed, mph	45.15		45.15		
Facility Percent of Base FFS	78.98		74.62		
Facility Level of Service	B		B		
Facility Auto Traveler Perception Score	2.23		2.25		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.99	D	4.34	E
Transit Facility LOS Score / LOS	6.77	F	6.75	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	149.32			146.87		
1	Running Speed, mph	43.40			44.13		
1	Through Delay, s/veh	3.69			14.52		
1	Travel Time, s	153.02			161.39		
1	Travel Speed, mph	42.36			40.16		
1	Stop Rate, stops/veh	0.24			0.51		
1	Spatial Stop Rate, stops/mi	0.14			0.29		
1	Through vol/cap Ratio	0.51			0.94		
1	Percent of Base FFS	92.07			87.29		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.16			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.06	D	4.05	D
1	Transit Segment LOS Score / LOS	6.80	F	6.73	F

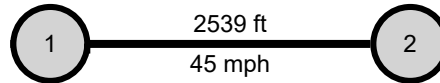
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	153.02		161.39
Facility Travel Speed, mph	42.36		40.16		
Facility Base Free Flow Speed, mph	46.00		46.01		
Facility Percent of Base FFS	92.07		87.29		
Facility Level of Service	A		A		
Facility Auto Traveler Perception Score	2.16		2.39		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.06	D	4.05	D
Transit Facility LOS Score / LOS	6.80	F	6.73	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_AM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	0.55	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	40.38			43.36		
1	Running Speed, mph	42.87			39.92		
1	Through Delay, s/veh	3.32			222.59		
1	Travel Time, s	43.70			265.95		
1	Travel Speed, mph	39.61			6.51		
1	Stop Rate, stops/veh	0.22			1.93		
1	Spatial Stop Rate, stops/mi	0.46			4.01		
1	Through vol/cap Ratio	0.42			1.39		
1	Percent of Base FFS	86.32			14.95		
1	Level of Service	A			F		
1	Auto Traveler Perception Score	2.42			3.03		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.30	E	4.79	E
1	Transit Segment LOS Score / LOS	6.64	F	0.66	A

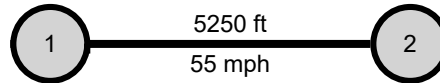
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	43.70	265.95	
Facility Travel Speed, mph	39.61	6.51			
Facility Base Free Flow Speed, mph	45.89	43.54			
Facility Percent of Base FFS	86.32	14.95			
Facility Level of Service	A	F			
Facility Auto Traveler Perception Score	2.42	3.03			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.30	E	4.79
Transit Facility LOS Score / LOS	6.64	F	0.66

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	72.55			81.27		
1	Running Speed, mph	49.34			44.04		
1	Through Delay, s/veh	8.67			0.00		
1	Travel Time, s	81.22			81.27		
1	Travel Speed, mph	44.07			44.04		
1	Stop Rate, stops/veh	0.51			0.00		
1	Spatial Stop Rate, stops/mi	0.52			0.00		
1	Through vol/cap Ratio	0.11			0.00		
1	Percent of Base FFS	88.10			97.17		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.74	E	6.12	F
1	Transit Segment LOS Score / LOS	6.53	F	0.46	A

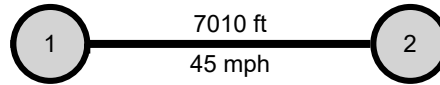
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		81.22		81.27	
Facility Travel Speed, mph		44.07		44.04	
Facility Base Free Flow Speed, mph		50.03		45.33	
Facility Percent of Base FFS		88.10		97.17	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.43		2.34	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.74	E	6.12	F	
Transit Facility LOS Score / LOS	6.53	F	0.46	A	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR		Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	106.16			104.38		
1	Running Speed, mph	45.02			45.79		
1	Through Delay, s/veh	0.00			13.53		
1	Travel Time, s	106.16			117.91		
1	Travel Speed, mph	45.02			40.54		
1	Stop Rate, stops/veh	0.00			0.58		
1	Spatial Stop Rate, stops/mi	0.00			0.44		
1	Through vol/cap Ratio	0.00			0.17		
1	Percent of Base FFS	97.66			87.93		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.96	D	4.60	E
1	Transit Segment LOS Score / LOS	6.73	F	6.54	F

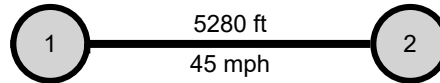
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		106.16		117.91	
Facility Travel Speed, mph		45.02		40.54	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		97.66		87.93	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.34		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.96	D	4.60	E
Transit Facility LOS Score / LOS	6.73	F	6.54	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	78.74			78.82		
1	Running Speed, mph	45.72			45.67		
1	Through Delay, s/veh	20.02			23.76		
1	Travel Time, s	98.76			102.58		
1	Travel Speed, mph	36.45			35.09		
1	Stop Rate, stops/veh	0.67			0.83		
1	Spatial Stop Rate, stops/mi	0.67			0.83		
1	Through vol/cap Ratio	0.22			0.47		
1	Percent of Base FFS	78.76			75.84		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.45			2.48		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.38	C	3.63	D
1	Transit Segment LOS Score / LOS	6.54	F	6.56	F

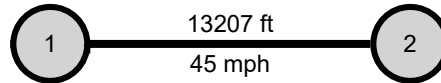
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	98.76	102.58	
Facility Travel Speed, mph	36.45	35.09			
Facility Base Free Flow Speed, mph	46.28	46.28			
Facility Percent of Base FFS	78.76	75.84			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.45	2.48			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.38	C	3.63
Transit Facility LOS Score / LOS	6.54	F	6.56

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13207	13207	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.22			46.22		
1	Running Time, s	195.82			200.13		
1	Running Speed, mph	45.98			45.00		
1	Through Delay, s/veh	1.81			17.42		
1	Travel Time, s	197.63			217.55		
1	Travel Speed, mph	45.56			41.39		
1	Stop Rate, stops/veh	0.17			0.70		
1	Spatial Stop Rate, stops/mi	0.07			0.28		
1	Through vol/cap Ratio	0.08			0.80		
1	Percent of Base FFS	98.59			89.56		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.36			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.66	E	4.75	E
1	Transit Segment LOS Score / LOS	6.55	F	6.77	F

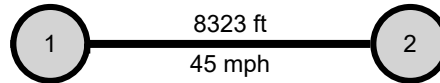
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	197.63	217.55	
Facility Travel Speed, mph	45.56	41.39			
Facility Base Free Flow Speed, mph	46.22	46.22			
Facility Percent of Base FFS	98.59	89.56			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.36	2.39			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.66	E	4.75
Transit Facility LOS Score / LOS	6.55	F	6.77

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		46.55			46.55	
1	Running Time, s		123.50			125.45	
1	Running Speed, mph		45.95			45.24	
1	Through Delay, s/veh		15.13			15.39	
1	Travel Time, s		138.64			140.84	
1	Travel Speed, mph		40.93			40.29	
1	Stop Rate, stops/veh		0.51			0.62	
1	Spatial Stop Rate, stops/mi		0.33			0.39	
1	Through vol/cap Ratio		0.41			0.83	
1	Percent of Base FFS		87.93			86.56	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.40			2.41	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.24	D	4.22	D
1	Transit Segment LOS Score / LOS	6.59	F	6.68	F

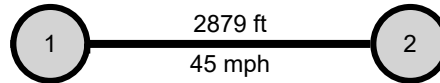
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		138.64		140.84	
Facility Travel Speed, mph		40.93		40.29	
Facility Base Free Flow Speed, mph		46.55		46.55	
Facility Percent of Base FFS		87.93		86.56	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.40		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.24	D	4.22	D	
Transit Facility LOS Score / LOS	6.59	F	6.68	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1> 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	0.31			never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	52.74			45.09		
1	Running Speed, mph	37.22			43.53		
1	Through Delay, s/veh	158.80			28.00		
1	Travel Time, s	211.54			73.10		
1	Travel Speed, mph	9.28			26.85		
1	Stop Rate, stops/veh	1.56			0.64		
1	Spatial Stop Rate, stops/mi	2.86			1.18		
1	Through vol/cap Ratio	1.31			0.58		
1	Percent of Base FFS	20.50			57.63		
1	Level of Service	F			C		
1	Auto Traveler Perception Score	2.59			2.32		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	3.94	D
1	Bicycle Segment LOS Score / LOS	4.94	E	4.83	E
1	Transit Segment LOS Score / LOS	7.09	F	6.53	F

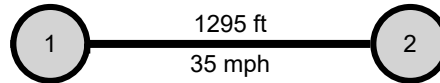
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	211.54		73.10
Facility Travel Speed, mph	9.28		26.85		
Facility Base Free Flow Speed, mph	45.26		46.59		
Facility Percent of Base FFS	20.50		57.63		
Facility Level of Service	F		C		
Facility Auto Traveler Perception Score	2.59		2.32		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			3.94	D
Bicycle Facility LOS Score / LOS	4.94	E	4.83	E
Transit Facility LOS Score / LOS	7.09	F	6.53	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		0.17	6.20	
1	Shared Lane Spillback Time, h				0.28		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.12			27.62	
1	Running Speed, mph		33.81			31.97	
1	Through Delay, s/veh		0.36			91.32	
1	Travel Time, s		26.48			118.94	
1	Travel Speed, mph		33.35			7.42	
1	Stop Rate, stops/veh		0.05			1.10	
1	Spatial Stop Rate, stops/mi		0.20			4.48	
1	Through vol/cap Ratio		0.18			1.04	
1	Percent of Base FFS		87.75			19.48	
1	Level of Service		A			F	
1	Auto Traveler Perception Score		2.17			2.87	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.43	C	4.10	D
1	Bicycle Segment LOS Score / LOS	3.78	D	7.02	F
1	Transit Segment LOS Score / LOS	4.41	E	4.66	E

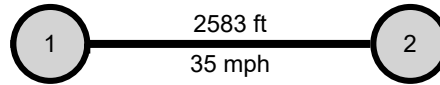
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		26.48		118.94	
Facility Travel Speed, mph		33.35		7.42	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		87.75		19.48	
Facility Level of Service		A		F	
Facility Auto Traveler Perception Score		2.17		2.87	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.43	C	4.10	D
Bicycle Facility LOS Score / LOS	3.78	D	7.02	F
Transit Facility LOS Score / LOS	4.41	E	4.66	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2583	2583	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		40.76			40.62	
1	Running Time, s		46.90			47.03	
1	Running Speed, mph		37.55			37.45	
1	Through Delay, s/veh		1.04			0.96	
1	Travel Time, s		47.94			47.99	
1	Travel Speed, mph		36.73			36.70	
1	Stop Rate, stops/veh		0.01			0.01	
1	Spatial Stop Rate, stops/mi		0.03			0.03	
1	Through vol/cap Ratio		0.48			0.46	
1	Percent of Base FFS		90.13			90.33	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.15			2.15	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.84	D	3.60	D
1	Transit Segment LOS Score / LOS	4.71	E	4.67	E

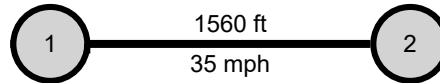
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		47.94		47.99	
Facility Travel Speed, mph		36.73		36.70	
Facility Base Free Flow Speed, mph		40.76		40.62	
Facility Percent of Base FFS		90.13		90.33	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.15		2.15	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.84	D	3.60	D
Transit Facility LOS Score / LOS	4.71	E	4.67	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward Ave	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	28.27			27.77		
1	Running Speed, mph	37.62			38.31		
1	Through Delay, s/veh	1.56			1.15		
1	Travel Time, s	29.83			28.92		
1	Travel Speed, mph	35.65			36.78		
1	Stop Rate, stops/veh	0.42			0.41		
1	Spatial Stop Rate, stops/mi	1.43			1.40		
1	Through vol/cap Ratio	0.41			0.02		
1	Percent of Base FFS	85.34			88.04		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.58			2.57		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.81	E	4.22	D
1	Transit Segment LOS Score / LOS	6.69	F	6.46	F

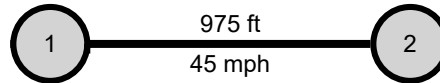
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	29.83	28.92	
Facility Travel Speed, mph	35.65	36.78			
Facility Base Free Flow Speed, mph	41.78	41.78			
Facility Percent of Base FFS	85.34	88.04			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.58	2.57			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.81	E	4.22 D
Transit Facility LOS Score / LOS	6.69	F	6.46 F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_P	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	18.76			19.06		
1	Running Speed, mph	35.43			34.87		
1	Through Delay, s/veh	1.08			1.53		
1	Travel Time, s	19.84			20.60		
1	Travel Speed, mph	33.50			32.27		
1	Stop Rate, stops/veh	0.18			0.18		
1	Spatial Stop Rate, stops/mi	1.00			1.00		
1	Through vol/cap Ratio	0.70			0.85		
1	Percent of Base FFS	73.04			70.36		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.50			2.50		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.71	D	3.82	D
1	Transit Segment LOS Score / LOS	6.83	F	6.89	F

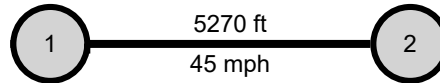
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	19.84	20.60	
Facility Travel Speed, mph	33.50	32.27			
Facility Base Free Flow Speed, mph	45.87	45.87			
Facility Percent of Base FFS	73.04	70.36			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.50	2.50			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.71	D	3.82
Transit Facility LOS Score / LOS	6.83	F	6.89

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave, Sycamore &		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	83.19			83.86		
1	Running Speed, mph	43.19			42.85		
1	Through Delay, s/veh	18.06			22.39		
1	Travel Time, s	101.25			106.25		
1	Travel Speed, mph	35.49			33.82		
1	Stop Rate, stops/veh	0.68			0.69		
1	Spatial Stop Rate, stops/mi	0.68			0.69		
1	Through vol/cap Ratio	0.82			0.97		
1	Percent of Base FFS	78.60			74.90		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.24			2.24		

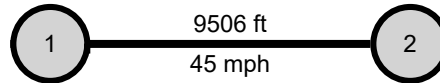
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	3.94	D	E
1	Transit Segment LOS Score / LOS	6.71	F	F

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		101.25		106.25	
Facility Travel Speed, mph		35.49		33.82	
Facility Base Free Flow Speed, mph		45.15		45.15	
Facility Percent of Base FFS		78.60		74.90	
Facility Level of Service		B		B	
Facility Auto Traveler Perception Score		2.24		2.24	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.94	D	4.35	E
Transit Facility LOS Score / LOS	6.71	F	6.75	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	146.95			149.37		
1	Running Speed, mph	44.11			43.39		
1	Through Delay, s/veh	10.83			23.05		
1	Travel Time, s	157.78			172.42		
1	Travel Speed, mph	41.08			37.59		
1	Stop Rate, stops/veh	0.40			0.71		
1	Spatial Stop Rate, stops/mi	0.22			0.40		
1	Through vol/cap Ratio	0.56			0.97		
1	Percent of Base FFS	89.29			81.70		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.02	D	4.07	D
1	Transit Segment LOS Score / LOS	6.72	F	6.82	F

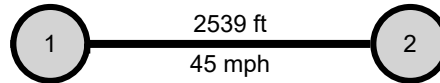
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	157.78	172.42	
Facility Travel Speed, mph	41.08	37.59			
Facility Base Free Flow Speed, mph	46.00	46.01			
Facility Percent of Base FFS	89.29	81.70			
Facility Level of Service	A	B			
Facility Auto Traveler Perception Score	2.17	2.41			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.02	D	4.07
Transit Facility LOS Score / LOS	6.72	F	6.82

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_PM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0	

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	40.66			43.39		
1	Running Speed, mph	42.57			39.90		
1	Through Delay, s/veh	13.38			52.42		
1	Travel Time, s	54.04			95.81		
1	Travel Speed, mph	32.03			18.07		
1	Stop Rate, stops/veh	0.32			0.79		
1	Spatial Stop Rate, stops/mi	0.66			1.64		
1	Through vol/cap Ratio	0.80			0.99		
1	Percent of Base FFS	69.81			41.50		
1	Level of Service	B			D		
1	Auto Traveler Perception Score	2.45			2.61		

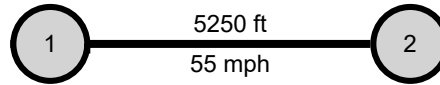
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	4.25	D	E
1	Transit Segment LOS Score / LOS	6.69	F	A

Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		54.04		95.81	
Facility Travel Speed, mph		32.03		18.07	
Facility Base Free Flow Speed, mph		45.89		43.54	
Facility Percent of Base FFS		69.81		41.50	
Facility Level of Service		B		D	
Facility Auto Traveler Perception Score		2.45		2.61	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.25	D	4.84	E
Transit Facility LOS Score / LOS	6.69	F	0.66	A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	72.69			80.15		
1	Running Speed, mph	49.24			44.66		
1	Through Delay, s/veh	8.76			0.00		
1	Travel Time, s	81.45			80.15		
1	Travel Speed, mph	43.95			44.66		
1	Stop Rate, stops/veh	0.52			0.00		
1	Spatial Stop Rate, stops/mi	0.53			0.00		
1	Through vol/cap Ratio	0.15			0.00		
1	Percent of Base FFS	87.84			98.53		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.89	E	6.00	F
1	Transit Segment LOS Score / LOS	6.58	F	0.35	A

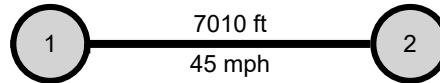
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		81.45		80.15	
Facility Travel Speed, mph		43.95		44.66	
Facility Base Free Flow Speed, mph		50.03		45.33	
Facility Percent of Base FFS		87.84		98.53	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.43		2.34	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.89	E	6.00	F	
Transit Facility LOS Score / LOS	6.58	F	0.35	A	

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	PM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Existing + Approved + Project Conditions				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	105.67			104.24		
1	Running Speed, mph	45.23			45.85		
1	Through Delay, s/veh	0.00			19.64		
1	Travel Time, s	105.67			123.88		
1	Travel Speed, mph	45.23			38.58		
1	Stop Rate, stops/veh	0.00			0.64		
1	Spatial Stop Rate, stops/mi	0.00			0.48		
1	Through vol/cap Ratio	0.00			0.14		
1	Percent of Base FFS	98.12			83.69		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.34			2.42		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.97	D	4.57	E
1	Transit Segment LOS Score / LOS	6.70	F	6.51	F

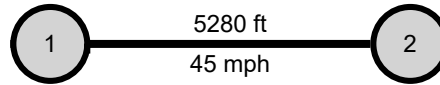
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		105.67		123.88	
Facility Travel Speed, mph		45.23		38.58	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		98.12		83.69	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.34		2.42	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.97	D	4.57	E
Transit Facility LOS Score / LOS	6.70	F	6.51	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	81.28			79.37		
1	Running Speed, mph	44.29			45.36		
1	Through Delay, s/veh	7.80			18.18		
1	Travel Time, s	89.08			97.55		
1	Travel Speed, mph	40.41			36.90		
1	Stop Rate, stops/veh	0.40			0.29		
1	Spatial Stop Rate, stops/mi	0.40			0.29		
1	Through vol/cap Ratio	0.61			0.66		
1	Percent of Base FFS	87.32			79.75		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.41			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.98	D	3.63	D
1	Transit Segment LOS Score / LOS	6.81	F	6.67	F

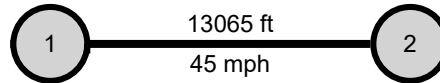
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	89.08	97.55	
Facility Travel Speed, mph	40.41	36.90			
Facility Base Free Flow Speed, mph	46.28	46.28			
Facility Percent of Base FFS	87.32	79.75			
Facility Level of Service	A	B			
Facility Auto Traveler Perception Score	2.41	2.39			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.98	D	3.63
Transit Facility LOS Score / LOS	6.81	F	6.67

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			3.12	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.21			46.21		
1	Running Time, s	197.20			200.82		
1	Running Speed, mph	45.17			44.36		
1	Through Delay, s/veh	24.59			833.50		
1	Travel Time, s	221.79			1034.32		
1	Travel Speed, mph	40.16			8.61		
1	Stop Rate, stops/veh	0.72			3.09		
1	Spatial Stop Rate, stops/mi	0.29			1.25		
1	Through vol/cap Ratio	0.72			2.77		
1	Percent of Base FFS	86.91			18.64		
1	Level of Service	A			F		
1	Auto Traveler Perception Score	2.39			2.55		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	5.17	F	4.61	E
1	Transit Segment LOS Score / LOS	6.75	F	6.85	F

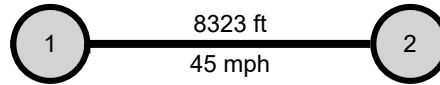
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	221.79	1034.32	
Facility Travel Speed, mph	40.16	8.61			
Facility Base Free Flow Speed, mph	46.21	46.21			
Facility Percent of Base FFS	86.91	18.64			
Facility Level of Service	A	F			
Facility Auto Traveler Perception Score	2.39	2.55			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	5.17	F	4.61
Transit Facility LOS Score / LOS	6.75	F	6.85

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	122.92			127.83		
1	Running Speed, mph	46.17			44.39		
1	Through Delay, s/veh	9.91			15.62		
1	Travel Time, s	132.83			143.45		
1	Travel Speed, mph	42.72			39.56		
1	Stop Rate, stops/veh	0.36			0.62		
1	Spatial Stop Rate, stops/mi	0.23			0.40		
1	Through vol/cap Ratio	0.16			0.91		
1	Percent of Base FFS	91.78			84.98		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.38			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.06	D	4.32	E
1	Transit Segment LOS Score / LOS	6.52	F	6.78	F

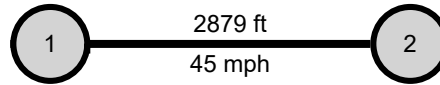
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	132.83		143.45
Facility Travel Speed, mph	42.72		39.56		
Facility Base Free Flow Speed, mph	46.55		46.55		
Facility Percent of Base FFS	91.78		84.98		
Facility Level of Service	A		B		
Facility Auto Traveler Perception Score	2.38		2.41		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.06	D	4.32	E
Transit Facility LOS Score / LOS	6.52	F	6.78	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1> 7:00	
Project Description	Existing + Approved + Project (Mitigated)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	2	2	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.76			47.10		
1	Running Time, s	46.24			43.98		
1	Running Speed, mph	42.45			44.64		
1	Through Delay, s/veh	4.82			34.46		
1	Travel Time, s	51.07			78.44		
1	Travel Speed, mph	38.44			25.03		
1	Stop Rate, stops/veh	0.33			0.66		
1	Spatial Stop Rate, stops/mi	0.61			1.21		
1	Through vol/cap Ratio	0.44			0.44		
1	Percent of Base FFS	83.99			53.13		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.23			2.32		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	3.81	D
1	Bicycle Segment LOS Score / LOS	4.85	E	4.69	E
1	Transit Segment LOS Score / LOS	6.72	F	6.44	F

Facility Output Data

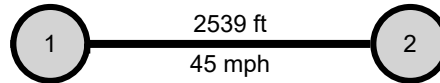
Facility Output Data	Eastbound		Westbound	
	Facility Travel Time, s	51.07		78.44
Facility Travel Speed, mph	38.44		25.03	
Facility Base Free Flow Speed, mph	45.76		47.10	
Facility Percent of Base FFS	83.99		53.13	
Facility Level of Service	B		C	
Facility Auto Traveler Perception Score	2.23		2.32	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			3.81	D
Bicycle Facility LOS Score / LOS	4.85	E	4.69	E
Transit Facility LOS Score / LOS	6.72	F	6.44	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_AM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Existing + Approved + Project (Mitigated)					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
1	45	40	2	2	2539	2539	140	66	0	0	0	5	0.0	0.0	

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never		never	never		
1	Base Free-Flow Speed, mph	46.32			43.96		
1	Running Time, s	39.74			41.94		
1	Running Speed, mph	43.57			41.28		
1	Through Delay, s/veh	22.22			33.80		
1	Travel Time, s	61.95			75.74		
1	Travel Speed, mph	27.94			22.86		
1	Stop Rate, stops/veh	0.56			0.84		
1	Spatial Stop Rate, stops/mi	1.16			1.75		
1	Through vol/cap Ratio	0.41			0.89		
1	Percent of Base FFS	60.32			52.00		
1	Level of Service	C			C		
1	Auto Traveler Perception Score	2.31			2.41		

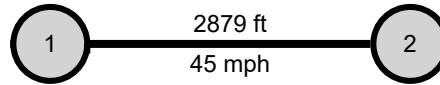
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	4.11	D	E
1	Transit Segment LOS Score / LOS	6.60	F	A

Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		61.95		75.74	
Facility Travel Speed, mph		27.94		22.86	
Facility Base Free Flow Speed, mph		46.32		43.96	
Facility Percent of Base FFS		60.32		52.00	
Facility Level of Service		C		C	
Facility Auto Traveler Perception Score		2.31		2.41	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.11	D	4.74	E
Transit Facility LOS Score / LOS	6.60	F	1.67	A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project (Mitigated)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	2	2	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never			never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.76			47.10		
1	Running Time, s	46.60			43.92		
1	Running Speed, mph	42.12			44.69		
1	Through Delay, s/veh	11.59			40.78		
1	Travel Time, s	58.19			84.70		
1	Travel Speed, mph	33.73			23.18		
1	Stop Rate, stops/veh	0.62			0.70		
1	Spatial Stop Rate, stops/mi	1.13			1.28		
1	Through vol/cap Ratio	0.67			0.45		
1	Percent of Base FFS	73.71			49.21		
1	Level of Service	B			D		
1	Auto Traveler Perception Score	2.31			2.33		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	3.79	D
1	Bicycle Segment LOS Score / LOS	4.88	E	4.74	E
1	Transit Segment LOS Score / LOS	6.76	F	6.43	F

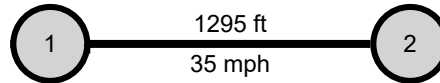
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	58.19	84.70	
Facility Travel Speed, mph	33.73	23.18			
Facility Base Free Flow Speed, mph	45.76	47.10			
Facility Percent of Base FFS	73.71	49.21			
Facility Level of Service	B	D			
Facility Auto Traveler Perception Score	2.31	2.33			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS		F	3.79	D
Bicycle Facility LOS Score / LOS	4.88	E	4.74	E
Transit Facility LOS Score / LOS	6.76	F	6.43	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project (Mitigated)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	never
1	Shared Lane Spillback Time, h				never		never
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.12			27.62	
1	Running Speed, mph		33.81			31.97	
1	Through Delay, s/veh		0.34			27.63	
1	Travel Time, s		26.46			55.25	
1	Travel Speed, mph		33.38			15.98	
1	Stop Rate, stops/veh		0.05			0.75	
1	Spatial Stop Rate, stops/mi		0.19			3.07	
1	Through vol/cap Ratio		0.18			0.53	
1	Percent of Base FFS		87.83			41.93	
1	Level of Service		A			D	
1	Auto Traveler Perception Score		2.17			2.62	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.43	C	4.20	D
1	Bicycle Segment LOS Score / LOS	3.78	D	7.02	F
1	Transit Segment LOS Score / LOS	4.41	E	5.13	F

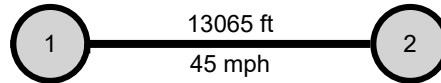
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		26.46		55.25	
Facility Travel Speed, mph		33.38		15.98	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		87.83		41.93	
Facility Level of Service		A		D	
Facility Auto Traveler Perception Score		2.17		2.62	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.43	C	4.20	D
Bicycle Facility LOS Score / LOS	3.78	D	7.02	F
Transit Facility LOS Score / LOS	4.41	E	5.13	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Existing + Approved + Project (Mitigated)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	2	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		0.20	never	
1	Shared Lane Spillback Time, h				1.72		never
1	Base Free-Flow Speed, mph	46.48			46.21		
1	Running Time, s	195.52			200.82		
1	Running Speed, mph	45.56			44.36		
1	Through Delay, s/veh	36.73			26.09		
1	Travel Time, s	232.25			226.91		
1	Travel Speed, mph	38.36			39.26		
1	Stop Rate, stops/veh	0.78			0.79		
1	Spatial Stop Rate, stops/mi	0.32			0.32		
1	Through vol/cap Ratio	0.75			0.58		
1	Percent of Base FFS	82.52			84.95		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.39			2.19		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.86	E	4.61	E
1	Transit Segment LOS Score / LOS	6.73	F	6.85	F

Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	232.25	226.91	
Facility Travel Speed, mph	38.36	39.26			
Facility Base Free Flow Speed, mph	46.48	46.21			
Facility Percent of Base FFS	82.52	84.95			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.39	2.19			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.86	E	4.61
Transit Facility LOS Score / LOS	6.73	F	6.85

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: EPAPP
Description: Patterson NW Annex Segment Analysis

-----Flow Inputs and Adjustments-----

Volume, V	4398	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1170	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	2480	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2480	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	48.5	mi/h
Number of lanes, N	2	
Density, D	51.2	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: EPAPP
Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	3965	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1055	v
Trucks and buses	22	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, fp	1.00	
Flow rate, vp	2341	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2341	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	50.0	mi/h
Number of lanes, N	2	
Density, D	46.8	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: EPAPP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	4264	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1134	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2506	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2506	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	47.7	mi/h
Number of lanes, N	2	
Density, D	52.6	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: EPAPP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	3444	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	916	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2024	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2024	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	59.5	mi/h
Number of lanes, N	2	
Density, D	34.0	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: EPAPP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	3444	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	916	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2024	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2024	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	59.5	mi/h
Number of lanes, N	2	
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Level of service, LOS	D	

Phone: Fax:
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-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
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-----Flow Inputs and Adjustments-----

Volume, V	3444	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	916	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2024	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2024	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	59.5	mi/h
Number of lanes, N	2	
Density, D	34.0	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: EPAPP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	3444	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	916	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2024	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2024	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	59.5	mi/h
Number of lanes, N	2	
Density, D	34.0	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: EPAPP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	3444	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	916	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2024	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2024	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	59.5	mi/h
Number of lanes, N	2	
Density, D	34.0	pc/mi/ln
Level of service, LOS	D	

TRAFFIC IMPACT STUDY FOR PROPOSED ZACHARIAS AND BALDWIN MASTER PLAN IN PATTERSON,
CALIFORNIA

Appendix E Intersection Analysis: 2040 cumulative no project Conditions LOS Calculation Sheets
February 7, 2020

**Appendix E INTERSECTION ANALYSIS: 2040 CUMULATIVE NO
PROJECT CONDITIONS LOS CALCULATION SHEETS**

Intersection												
Int Delay, s/veh	535.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	125	4	234	706	0	0	0	0	338	1	183
Future Vol, veh/h	0	125	4	234	706	0	0	0	0	338	1	183
Conflicting Peds, #/hr	0	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	20	20	17	0	0	0	0	20	20	17
Mvmt Flow	0	136	4	254	767	0	0	0	0	367	1	199

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	140	0	0		1413	1415	767
Stage 1	-	-	-	-	-	-		1275	1275	-
Stage 2	-	-	-	-	-	-		138	140	-
Critical Hdwy	-	-	-	4.3	-	-		6.6	6.7	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-		5.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.6	5.7	-
Follow-up Hdwy	-	-	-	2.38	-	-		3.68	4.18	3.453
Pot Cap-1 Maneuver	0	-	-	1340	-	0		~ 139	126	379
Stage 1	0	-	-	-	-	0		~ 241	219	-
Stage 2	0	-	-	-	-	0		846	748	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	1340	-	-		~ 93	0	379
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 93	0	-
Stage 1	-	-	-	-	-	-		~ 241	0	-
Stage 2	-	-	-	-	-	-		567	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.1	\$ 1629.5
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1340	-	127
HCM Lane V/C Ratio	-	-	0.19	-	4.468
HCM Control Delay (s)	-	-	8.3	\$ 1629.5	
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.7	-	58.7

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	60	403	0	0	917	545	23	7	90	0	0	0
Future Vol, veh/h	60	403	0	0	917	545	23	7	90	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	16	0	0	20	10	0	0	16	0	0	0
Mvmt Flow	65	438	0	0	997	592	25	8	98	0	0	0

Major/Minor	Major1	Major2		Minor1				
Conflicting Flow All	1589	0	-	-	0	1861	2157	438
Stage 1	-	-	-	-	-	568	568	-
Stage 2	-	-	-	-	-	1293	1589	-
Critical Hdwy	4.1	-	-	-	-	6.4	6.5	6.36
Critical Hdwy Stg 1	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	3.5	4	3.444
Pot Cap-1 Maneuver	419	-	0	0	-	81	48	590
Stage 1	-	-	0	0	-	571	510	-
Stage 2	-	-	0	0	-	260	169	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	419	-	-	-	-	64	0	590
Mov Cap-2 Maneuver	-	-	-	-	-	64	0	-
Stage 1	-	-	-	-	-	454	0	-
Stage 2	-	-	-	-	-	260	0	-
























Approach	EB	WB	NB
HCM Control Delay, s	2	0	42.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	221	419	-	-	-
HCM Lane V/C Ratio	0.59	0.156	-	-	-
HCM Control Delay (s)	42.3	15.2	0	-	-
HCM Lane LOS	E	C	A	-	-
HCM 95th %tile Q(veh)	3.3	0.5	-	-	-

HCM Signalized Intersection Capacity Analysis

3: Sperry Ave & Rogers Rd

2040 Cumulative No Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	173	214	76	1029	150	188	3	60	90	0	245
Future Volume (vph)	106	173	214	76	1029	150	188	3	60	90	0	245
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	3008	1583	1770	1652	1547	1770	1863	1583		1736	2632
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1656	3008	1583	1770	1652	1547	1770	1863	1583		1736	2632
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	188	233	83	1118	163	204	3	65	98	0	266
RTOR Reduction (vph)	0	0	110	0	0	48	0	0	56	0	0	121
Lane Group Flow (vph)	115	188	123	83	1118	115	204	3	9	0	98	145
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	9%	20%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pt+ov
Protected Phases	5	2		1	6		8	8		7	7	7.5
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.5	73.5	73.5	11.2	74.2	74.2	19.7	19.7	19.7		13.4	21.9
Effective Green, g (s)	8.5	73.5	73.5	11.2	74.2	74.2	19.7	19.7	19.7		13.4	21.9
Actuated g/C Ratio	0.06	0.53	0.53	0.08	0.53	0.53	0.14	0.14	0.14		0.10	0.16
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	101	1587	835	142	879	824	250	263	223		166	413
v/s Ratio Prot	c0.07	0.06		0.05	c0.68		c0.12	0.00			c0.06	0.06
v/s Ratio Perm			0.08			0.07			0.01			
v/c Ratio	1.14	0.12	0.15	0.58	1.27	0.14	0.82	0.01	0.04		0.59	0.35
Uniform Delay, d1	65.4	16.6	16.8	61.8	32.6	16.4	58.0	51.4	51.6		60.3	52.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	131.7	0.1	0.2	6.0	131.3	0.1	18.2	0.0	0.1		5.5	0.5
Delay (s)	197.1	16.6	17.0	67.8	163.8	16.5	76.3	51.4	51.7		65.8	52.9
Level of Service	F	B	B	E	F	B	E	D	D		E	D
Approach Delay (s)		55.5			140.4			70.1			56.4	
Approach LOS		E			F			E			E	
Intersection Summary												
HCM 2000 Control Delay			102.9				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			139.3				Sum of lost time (s)				23.5	
Intersection Capacity Utilization			91.7%				ICU Level of Service				F	
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
 4: Park Center Dr & Sperry Ave

2040 Cumulative No Project
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗		↔	↖	↖	↔	↗		↔	↘	↘
Traffic Volume (veh/h)	66	532	0	7	545	15	60	7	25	24	11	292
Future Volume (veh/h)	66	532	0	7	545	15	60	7	25	24	11	292
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1583	1743	1900	1900	1827	1583	1900	1900	1900	1583	1593	1900
Adj Flow Rate, veh/h	72	578	0	8	592	16	65	8	27	26	12	317
Adj No. of Lanes	2	1	0	2	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	206	737	0	44	1268	485	227	121	408	472	16	415
Arrive On Green	0.07	0.42	0.00	0.01	0.37	0.37	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	2925	1743	0	3510	3471	1329	1068	382	1290	1163	50	1312
Grp Volume(v), veh/h	72	578	0	8	592	16	65	0	35	26	0	329
Grp Sat Flow(s),veh/h/ln	1463	1743	0	1755	1736	1329	1068	0	1672	1163	0	1362
Q Serve(g_s), s	1.4	16.9	0.0	0.1	7.7	0.5	3.5	0.0	0.9	0.9	0.0	12.9
Cycle Q Clear(g_c), s	1.4	16.9	0.0	0.1	7.7	0.5	16.4	0.0	0.9	1.8	0.0	12.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.77	1.00		0.96
Lane Grp Cap(c), veh/h	206	737	0	44	1268	485	227	0	529	472	0	430
V/C Ratio(X)	0.35	0.78	0.00	0.18	0.47	0.03	0.29	0.00	0.07	0.06	0.00	0.76
Avail Cap(c_a), veh/h	301	1098	0	356	2182	835	556	0	1045	831	0	851
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.2	14.7	0.0	28.9	14.4	12.1	25.6	0.0	14.1	14.8	0.0	18.3
Incr Delay (d2), s/veh	1.0	4.2	0.0	2.0	0.6	0.1	0.7	0.0	0.1	0.0	0.0	2.9
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	0.6	8.9	0.0	0.1	3.8	0.2	1.1	0.0	0.4	0.3	0.0	5.2
LnGrp Delay(d),s/veh	27.2	18.9	0.0	30.9	15.0	12.1	26.3	0.0	14.2	14.8	0.0	21.1
LnGrp LOS	C	B		C	B	B	C		B	B		C
Approach Vol, veh/h		650			616			100				355
Approach Delay, s/veh		19.8			15.1			22.1				20.6
Approach LOS		B			B			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	5.2	30.7		23.2	8.7	27.3		23.2				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	6.1	37.2		37.0				
Max Q Clear Time (g_c+I), s	18.9	18.9		14.9	3.4	9.7		18.4				
Green Ext Time (p_c), s	0.0	6.1		2.1	0.0	7.4		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				18.4								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

2040 Cumulative No Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↗		↖	↖	↖	↖	↖		↖↗	↗	
Traffic Volume (veh/h)	32	533	45	10	572	83	85	212	20	121	93	93
Future Volume (veh/h)	32	533	45	10	572	83	85	212	20	121	93	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1832	1900	1900	1792	1863	1900	1810	1900	1827	1881	1900
Adj Flow Rate, veh/h	35	579	49	11	622	90	92	230	22	132	101	101
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	4	4	0	6	2	0	5	5	4	0	0
Cap, veh/h	142	731	62	30	740	654	133	300	29	277	167	167
Arrive On Green	0.04	0.44	0.44	0.02	0.41	0.41	0.07	0.18	0.18	0.08	0.19	0.19
Sat Flow, veh/h	3312	1663	141	1810	1792	1583	1810	1626	156	3375	864	864
Grp Volume(v), veh/h	35	0	628	11	622	90	92	0	252	132	0	202
Grp Sat Flow(s),veh/h/ln1656	0	1804	1810	1792	1583	1810	0	1782	1688	0	1729	
Q Serve(g_s), s	0.7	0.0	20.0	0.4	20.8	2.4	3.3	0.0	9.0	2.5	0.0	7.1
Cycle Q Clear(g_c), s	0.7	0.0	20.0	0.4	20.8	2.4	3.3	0.0	9.0	2.5	0.0	7.1
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.09	1.00		0.50
Lane Grp Cap(c), veh/h	142	0	793	30	740	654	133	0	328	277	0	333
V/C Ratio(X)	0.25	0.00	0.79	0.37	0.84	0.14	0.69	0.00	0.77	0.48	0.00	0.61
Avail Cap(c_a), veh/h	298	0	872	163	866	765	163	0	722	319	0	708
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.9	0.0	16.1	32.4	17.6	12.2	30.1	0.0	25.8	29.2	0.0	24.6
Incr Delay (d2), s/veh	0.3	0.0	5.7	15.2	8.0	0.2	5.8	0.0	3.8	0.5	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.3	0.0	11.0	0.3	11.8	1.1	1.9	0.0	4.8	1.2	0.0	3.5	
LnGrp Delay(d),s/veh	31.2	0.0	21.8	47.7	25.6	12.4	35.9	0.0	29.6	29.7	0.0	26.4
LnGrp LOS	C		C	D	C	B	D		C	C		C
Approach Vol, veh/h		663			723			344			334	
Approach Delay, s/veh		22.3			24.3			31.3			27.7	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s5.3	34.8	9.1	17.5	7.1	33.0	9.7	16.9					
Change Period (Y+Rc), s4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6					
Max Green Setting (Gmax), s6	32.2	* 6	27.3	* 6	32.2	* 6.3	27.0					
Max Q Clear Time (g_c+1), s12.4	22.0	5.3	9.1	2.7	22.8	4.5	11.0					
Green Ext Time (p_c), s	0.0	4.6	0.0	1.0	0.0	4.7	0.0	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay			25.4									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Cumulative No Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	666	32	36	480	50	41	94	57	80	81	105
Future Volume (veh/h)	79	666	32	36	480	50	41	94	57	80	81	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	86	724	35	39	522	54	45	102	62	87	88	114
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	184	1093	53	89	854	88	286	239	145	321	165	213
Arrive On Green	0.10	0.32	0.32	0.05	0.27	0.27	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1810	3395	164	1757	3151	325	1170	1087	661	1222	749	970
Grp Volume(v), veh/h	86	373	386	39	285	291	45	0	164	87	0	202
Grp Sat Flow(s),veh/h/ln	1810	1750	1808	1757	1722	1754	1170	0	1748	1222	0	1719
Q Serve(g_s), s	2.1	8.8	8.8	1.0	6.9	7.0	1.7	0.0	3.9	3.2	0.0	5.0
Cycle Q Clear(g_c), s	2.1	8.8	8.8	1.0	6.9	7.0	6.7	0.0	3.9	7.0	0.0	5.0
Prop In Lane	1.00		0.09	1.00		0.19	1.00		0.38	1.00		0.56
Lane Grp Cap(c), veh/h	184	564	582	89	467	476	286	0	384	321	0	378
V/C Ratio(X)	0.47	0.66	0.66	0.44	0.61	0.61	0.16	0.00	0.43	0.27	0.00	0.53
Avail Cap(c_a), veh/h	246	822	850	220	791	806	567	0	803	613	0	790
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	14.0	14.0	22.1	15.2	15.2	19.5	0.0	16.1	19.1	0.0	16.5
Incr Delay (d2), s/veh	1.8	1.9	1.8	3.4	1.8	1.8	0.3	0.0	0.8	0.5	0.0	1.2
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	1.2	4.5	4.7	0.6	3.5	3.6	0.6	0.0	1.9	1.1	0.0	2.5
LnGrp Delay(d),s/veh	22.1	15.9	15.8	25.4	17.1	17.1	19.7	0.0	16.8	19.5	0.0	17.7
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		845			615			209			289	
Approach Delay, s/veh		16.5			17.6			17.4			18.2	
Approach LOS		B			B			B			B	
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	21.9		17.0	11.4	19.5		17.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.5	22.5		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1), s	10.8	10.8		9.0	4.1	9.0		8.7				
Green Ext Time (p_c), s	0.0	4.6		1.2	0.0	3.8		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay				17.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Cumulative No Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	109	486	17	81	301	76	31	153	159	118	97	31
Future Volume (veh/h)	109	486	17	81	301	76	31	153	159	118	97	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1818	1900	1792	1827	1845	1900	1827	1900	1900	1863	1776
Adj Flow Rate, veh/h	118	528	18	88	327	83	34	166	173	128	105	34
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
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, %	0	4	4	6	4	3	0	4	4	0	2	7
Cap, veh/h	151	835	28	119	754	336	75	226	235	162	603	480
Arrive On Green	0.08	0.25	0.25	0.07	0.22	0.22	0.04	0.28	0.28	0.09	0.32	0.32
Sat Flow, veh/h	1810	3405	116	1707	3471	1545	1810	820	855	1810	1863	1483
Grp Volume(v), veh/h	118	267	279	88	327	83	34	0	339	128	105	34
Grp Sat Flow(s),veh/h/ln	1810	1727	1795	1707	1736	1545	1810	0	1675	1810	1863	1483
Q Serve(g_s), s	4.5	9.8	9.8	3.6	5.8	3.1	1.3	0.0	13.0	4.9	2.9	1.1
Cycle Q Clear(g_c), s	4.5	9.8	9.8	3.6	5.8	3.1	1.3	0.0	13.0	4.9	2.9	1.1
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	151	423	440	119	754	336	75	0	461	162	603	480
V/C Ratio(X)	0.78	0.63	0.63	0.74	0.43	0.25	0.45	0.00	0.74	0.79	0.17	0.07
Avail Cap(c_a), veh/h	205	802	833	217	1612	717	177	0	806	169	889	708
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	23.8	23.8	32.2	23.9	22.9	33.1	0.0	23.3	31.5	17.1	16.5
Incr Delay (d2), s/veh	12.6	3.3	3.2	8.6	0.8	0.8	4.3	0.0	4.8	21.0	0.3	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	2.8	5.1	5.3	2.0	2.8	1.4	0.7	0.0	6.5	3.4	1.5	0.5
LnGrp Delay(d),s/veh	44.3	27.1	27.0	40.8	24.7	23.7	37.3	0.0	28.1	52.5	17.4	16.7
LnGrp LOS	D	C	C	D	C	C	D		C	D	B	B
Approach Vol, veh/h		664			498			373			267	
Approach Delay, s/veh		30.1			27.4			28.9			34.1	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	23.3	7.5	28.9	12.9	21.4	10.9	25.5				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	32.8	6.9	33.7	8.0	32.8	6.6	34.0					
Max Q Clear Time (g_c+1), s	11.8	3.3	4.9	6.5	7.8	6.9	15.0					
Green Ext Time (p_c), s	0.0	5.5	0.0	1.3	0.0	4.3	0.0	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			29.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

2040 Cumulative No Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	243	25	6	189	14	67	100	19	4	44	129
Future Volume (veh/h)	179	243	25	6	189	14	67	100	19	4	44	129
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	0.99		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	195	264	27	7	205	15	73	109	21	4	48	140
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	659	1357	138	667	754	690	274	254	41	131	103	287
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1154	3165	321	1103	1759	1609	432	1060	172	13	431	1197
Grp Volume(v), veh/h	195	143	148	7	205	15	203	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	1154	1727	1760	1103	1759	1609	1664	0	0	1641	0	0
Q Serve(g_s), s	3.8	1.5	1.5	0.1	2.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.9	1.5	1.5	1.6	2.2	0.2	2.7	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.18	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	659	740	755	667	754	690	570	0	0	521	0	0
V/C Ratio(X)	0.30	0.19	0.20	0.01	0.27	0.02	0.36	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	1187	1531	1560	1172	1560	1427	1546	0	0	1560	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	5.1	5.1	5.6	5.3	4.7	9.3	0.0	0.0	9.4	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.0	0.4	0.0	0.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.7	0.8	0.0	1.1	0.1	1.4	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	7.7	5.4	5.4	5.6	5.7	4.7	9.7	0.0	0.0	9.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A			A		
Approach Vol, veh/h		486			227			203			192	
Approach Delay, s/veh		6.3			5.6			9.7			9.8	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.9		11.8		16.9		11.8				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		25.4		25.1		25.4		25.1				
Max Q Clear Time (g_c+I1), s		7.9		4.7		4.2		4.9				
Green Ext Time (p_c), s		4.2		1.2		2.1		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				7.4								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	77											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	106	124	47	23	84	32	89	277	37	32	293	263
Future Vol, veh/h	106	124	47	23	84	32	89	277	37	32	293	263
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	4	0	14	9	8	4	6	12	0	12	10
Mvmt Flow	115	135	51	25	91	35	97	301	40	35	318	286






















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	967	923	318	996	903	322	318	0	0	341	0	0
Stage 1	388	388	-	515	515	-	-	-	-	-	-	-
Stage 2	579	535	-	481	388	-	-	-	-	-	-	-
Critical Hdwy	7.2	6.54	6.2	7.24	6.59	6.28	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.59	4.036	3.3	3.626	4.081	3.372	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	226	268	727	212	270	705	1231	-	-	1229	-	0
Stage 1	620	605	-	521	523	-	-	-	-	-	-	0
Stage 2	487	521	-	544	597	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	136	233	727	97	235	704	1231	-	-	1229	-	-
Mov Cap-2 Maneuver	136	233	-	97	235	-	-	-	-	-	-	-
Stage 1	559	584	-	470	472	-	-	-	-	-	-	-
Stage 2	336	470	-	375	576	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	291.9		45.2		1.8		0.8	
HCM LOS	F		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1231	-	-	201	180	704	1229	-
HCM Lane V/C Ratio	0.079	-	-	1.498	0.646	0.049	0.028	-
HCM Control Delay (s)	8.2	0	-	291.9	55.6	10.4	8	0
HCM Lane LOS	A	A	-	F	F	B	A	A
HCM 95th %tile Q(veh)	0.3	-	-	18.6	3.7	0.2	0.1	-

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

2040 Cumulative No Project
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	173	69	165	147	22	56	141	102	64	493	84
Future Volume (veh/h)	30	173	69	165	147	22	56	141	102	64	493	84
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	33	188	75	179	160	24	61	153	111	70	536	91
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	304	217	87	226	202	30	87	376	273	89	561	95
Arrive On Green	0.17	0.17	0.17	0.13	0.13	0.13	0.06	0.42	0.42	0.06	0.42	0.42
Sat Flow, veh/h	1774	1268	506	1774	1583	238	1587	899	652	1521	1331	226
Grp Volume(v), veh/h	33	0	263	179	0	184	61	0	264	70	0	627
Grp Sat Flow(s),veh/h/ln	1774	0	1773	1774	0	1821	1587	0	1552	1521	0	1557
Q Serve(g_s), s	1.3	0.0	11.8	8.0	0.0	8.0	3.1	0.0	9.7	3.7	0.0	31.8
Cycle Q Clear(g_c), s	1.3	0.0	11.8	8.0	0.0	8.0	3.1	0.0	9.7	3.7	0.0	31.8
Prop In Lane	1.00		0.29	1.00		0.13	1.00		0.42	1.00		0.15
Lane Grp Cap(c), veh/h	304	0	304	226	0	232	87	0	648	89	0	656
V/C Ratio(X)	0.11	0.00	0.86	0.79	0.00	0.79	0.70	0.00	0.41	0.79	0.00	0.96
Avail Cap(c_a), veh/h	379	0	379	631	0	648	117	0	748	205	0	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	32.8	34.5	0.0	34.5	37.8	0.0	16.6	37.9	0.0	22.8
Incr Delay (d2), s/veh	0.1	0.0	13.5	2.4	0.0	2.3	5.5	0.0	0.2	5.6	0.0	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	6.9	4.1	0.0	4.2	1.5	0.0	4.2	1.7	0.0	16.7
LnGrp Delay(d),s/veh	28.5	0.0	46.3	36.9	0.0	36.8	43.3	0.0	16.8	43.5	0.0	39.7
LnGrp LOS	C		D	D		D	D		B	D		D
Approach Vol, veh/h		296			363			325			697	
Approach Delay, s/veh		44.4			36.9			21.8			40.0	
Approach LOS		D			D			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.2	8.8	39.0		15.6	8.5	39.2				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 17	11.0	39.3		29.0	6.0	44.3				
Max Q Clear Time (g_c+I1), s		13.8	5.7	11.7		10.0	5.1	33.8				
Green Ext Time (p_c), s		0.2	0.0	0.2		0.4	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			36.6									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Cumulative No Project
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	279	6	196	400	145	2	275	301	133	225	3
Future Volume (veh/h)	24	279	6	196	400	145	2	275	301	133	225	3
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.97	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	1777	1900	1845	1743	1900	1827	1713	1900	1743	1881	1900
Adj Flow Rate, veh/h	26	303	7	213	435	158	2	299	327	145	245	3
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	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, %	0	7	7	3	9	0	4	1	1	9	1	1
Cap, veh/h	267	430	10	415	581	525	411	422	377	294	1233	15
Arrive On Green	0.03	0.25	0.25	0.11	0.33	0.33	0.00	0.26	0.26	0.08	0.34	0.34
Sat Flow, veh/h	1810	1729	40	1757	1743	1573	1740	1627	1453	1660	3614	44
Grp Volume(v), veh/h	26	0	310	213	435	158	2	299	327	145	121	127
Grp Sat Flow(s),veh/h/ln	1810	0	1769	1757	1743	1573	1740	1627	1453	1660	1786	1872
Q Serve(g_s), s	0.6	0.0	9.5	5.0	13.2	4.4	0.1	10.0	12.8	3.6	2.9	2.9
Cycle Q Clear(g_c), s	0.6	0.0	9.5	5.0	13.2	4.4	0.1	10.0	12.8	3.6	2.9	2.9
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	267	0	440	415	581	525	411	422	377	294	610	639
V/C Ratio(X)	0.10	0.00	0.70	0.51	0.75	0.30	0.00	0.71	0.87	0.49	0.20	0.20
Avail Cap(c_a), veh/h	381	0	827	759	1194	1078	640	630	562	376	691	724
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	20.4	13.8	17.7	14.7	16.3	20.1	21.1	14.9	13.9	13.9
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.4	0.7	0.1	0.0	0.8	6.5	0.5	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	0.3	0.0	4.7	2.4	6.4	1.9	0.0	4.6	5.8	1.6	1.4	1.5
LnGrp Delay(d),s/veh	16.4	0.0	21.2	14.1	18.4	14.9	16.3	20.9	27.7	15.4	14.0	14.0
LnGrp LOS	B		C	B	B	B	B	C	C	B	B	B
Approach Vol, veh/h		336			806			628			393	
Approach Delay, s/veh		20.8			16.6			24.4			14.5	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	24.5	9.1	20.4	10.8	19.5	4.2	25.3				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	40.9	8.0	23.1	18.5	27.9	8.0	23.1				
Max Q Clear Time (g_c+1), s	12.6	15.2	5.6	14.8	7.0	11.5	2.1	4.9				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.5	0.0	0.3	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			19.1									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕			↕			↕	↕
Traffic Vol, veh/h	14	37	26	15	53	138	25	225	7	101	482	10
Future Vol, veh/h	14	37	26	15	53	138	25	225	7	101	482	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	14	14	14	19	19	19
Mvmt Flow	15	40	28	16	58	150	27	245	8	110	524	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1151	1051	524	1087	1058	249	535	0	0	253	0	0
Stage 1	744	744	-	303	303	-	-	-	-	-	-	-
Stage 2	407	307	-	784	755	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.24	-	-	4.29	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.326	-	-	2.371	-	-
Pot Cap-1 Maneuver	175	227	553	194	225	790	975	-	-	1219	-	-
Stage 1	407	421	-	706	664	-	-	-	-	-	-	-
Stage 2	621	661	-	386	417	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	96	191	553	136	190	790	975	-	-	1219	-	-
Mov Cap-2 Maneuver	96	191	-	136	190	-	-	-	-	-	-	-
Stage 1	394	367	-	683	643	-	-	-	-	-	-	-
Stage 2	443	640	-	284	363	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	32.1		29.3		0.9		1.4	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	975	-	-	150	553	365	1219	-	-
HCM Lane V/C Ratio	0.028	-	-	0.37	0.051	0.613	0.09	-	-
HCM Control Delay (s)	8.8	0	-	42.4	11.9	29.3	8.2	0	-
HCM Lane LOS	A	A	-	E	B	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	0.2	3.9	0.3	-	-

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔			↔	
Traffic Vol, veh/h	2	23	29	8	55	5	21	1	5	2	1	0
Future Vol, veh/h	2	23	29	8	55	5	21	1	5	2	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	20	20	10	0	20	0	20	0	20	0
Mvmt Flow	2	25	32	9	60	5	23	1	5	2	1	0

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	65	0	0	57	0	0	126	128	42	130	142	63
Stage 1	-	-	-	-	-	-	45	45	-	81	81	-
Stage 2	-	-	-	-	-	-	81	83	-	49	61	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.3	6.5	6.4	7.1	6.7	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.7	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.68	4	3.48	3.5	4.18	3.3
Pot Cap-1 Maneuver	1550	-	-	1440	-	-	808	766	980	847	717	1007
Stage 1	-	-	-	-	-	-	925	861	-	932	794	-
Stage 2	-	-	-	-	-	-	885	830	-	969	810	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1550	-	-	1440	-	-	802	761	979	836	712	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	802	761	-	836	712	-
Stage 1	-	-	-	-	-	-	924	860	-	931	789	-
Stage 2	-	-	-	-	-	-	878	825	-	960	809	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.3		0.9		9.4		9.6	
HCM LOS					A		A	

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	802	934	1550	-	-	1440	-	-	790
HCM Lane V/C Ratio	0.028	0.007	0.001	-	-	0.006	-	-	0.004
HCM Control Delay (s)	9.6	8.9	7.3	-	-	7.5	-	-	9.6
HCM Lane LOS	A	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕		↕		↕	↕	↕	↕	↕
Traffic Vol, veh/h	23	35	43	16	14	14	19	47	28	32	37	7
Future Vol, veh/h	23	35	43	16	14	14	19	47	28	32	37	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	0	14	0	2	20	9	7	0
Mvmt Flow	25	38	47	17	15	15	21	51	30	35	40	8

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	237	237	44	250	211	51	48	0	0	81	0	0
Stage 1	114	114	-	93	93	-	-	-	-	-	-	-
Stage 2	123	123	-	157	118	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.3	6.5	6.34	4.1	-	-	4.19	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.68	4	3.426	2.2	-	-	2.281	-	-
Pot Cap-1 Maneuver	717	664	1026	668	690	984	1572	-	-	1473	-	-
Stage 1	891	801	-	871	822	-	-	-	-	-	-	-
Stage 2	881	794	-	804	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	674	639	1026	591	664	984	1572	-	-	1473	-	-
Mov Cap-2 Maneuver	674	639	-	591	664	-	-	-	-	-	-	-
Stage 1	879	782	-	859	810	-	-	-	-	-	-	-
Stage 2	839	783	-	713	783	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.4		10.1		1.5		3.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	772	591	984	1473	-	-
HCM Lane V/C Ratio	0.013	-	-	0.142	0.029	0.015	0.024	-	-
HCM Control Delay (s)	7.3	0	-	10.4	11.3	8.7	7.5	-	-
HCM Lane LOS	A	A	-	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	0.1	-	-

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	37	1	10	3	10	0	46	18	16	87	7
Future Vol, veh/h	15	37	1	10	3	10	0	46	18	16	87	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	2	2	2	19	19	19	16	16	16
Mvmt Flow	16	40	1	11	3	11	0	50	20	17	95	8

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	200	203	99	214	197	60	103	0	0	70	0	0
Stage 1	133	133	-	60	60	-	-	-	-	-	-	-
Stage 2	67	70	-	154	137	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.12	6.52	6.22	4.29	-	-	4.26	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.518	4.018	3.318	2.371	-	-	2.344	-	-
Pot Cap-1 Maneuver	752	688	949	743	699	1005	1389	-	-	1446	-	-
Stage 1	863	781	-	951	845	-	-	-	-	-	-	-
Stage 2	936	831	-	848	783	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	735	680	949	702	691	1005	1389	-	-	1446	-	-
Mov Cap-2 Maneuver	735	680	-	702	691	-	-	-	-	-	-	-
Stage 1	863	772	-	951	845	-	-	-	-	-	-	-
Stage 2	922	831	-	793	774	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	9.6	0	1.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1389	-	-	699	806	1446	-	-
HCM Lane V/C Ratio	-	-	-	0.082	0.031	0.012	-	-
HCM Control Delay (s)	0	-	-	10.6	9.6	7.5	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	20	9	27	39	4	188	87	38	2	43	10
Future Vol, veh/h	2	20	9	27	39	4	188	87	38	2	43	10
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
Heavy Vehicles, %	5	5	5	2	2	2	5	5	5	18	18	18
Mvmt Flow	2	22	10	29	42	4	204	95	41	2	47	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.5	10.5	8.2
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	6%	39%	4%
Vol Thru, %	28%	65%	56%	78%
Vol Right, %	12%	29%	6%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	313	31	70	55
LT Vol	188	2	27	2
Through Vol	87	20	39	43
RT Vol	38	9	4	10
Lane Flow Rate	340	34	76	60
Geometry Grp	1	1	1	1
Degree of Util (X)	0.414	0.045	0.104	0.079
Departure Headway (Hd)	4.376	4.849	4.943	4.744
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	823	738	725	756
Service Time	2.393	2.879	2.97	2.768
HCM Lane V/C Ratio	0.413	0.046	0.105	0.079
HCM Control Delay	10.5	8.1	8.5	8.2
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2	0.1	0.3	0.3

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	49	107	291	543	4
Future Vol, veh/h	0	49	107	291	543	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	0	53	116	316	590	4

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1140	592	594	0	-	0
Stage 1	592	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	219	501	917	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	185	501	917	-	-	-
Mov Cap-2 Maneuver	185	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	573	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	917	-	501	-	-
HCM Lane V/C Ratio	0.127	-	0.106	-	-
HCM Control Delay (s)	9.5	0	13	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.4	-	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	77	7	3	271	490	202
Future Vol, veh/h	77	7	3	271	490	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	14	14	19	19
Mvmt Flow	84	8	3	295	533	220

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	944	643	753	0	-	0
Stage 1	643	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.24	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.326	-	-	-
Pot Cap-1 Maneuver	284	463	805	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	737	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	463	805	-	-	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	805	-	292	-	-
HCM Lane V/C Ratio	0.004	-	0.313	-	-
HCM Control Delay (s)	9.5	0	22.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.3	-	-

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	72	82	303	15	19	566
Future Vol, veh/h	72	82	303	15	19	566
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	20	16	16	17	17
Mvmt Flow	78	89	329	16	21	615

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	994	337	0	0	345
Stage 1	337	-	-	-	-
Stage 2	657	-	-	-	-
Critical Hdwy	6.6	6.4	-	-	4.27
Critical Hdwy Stg 1	5.6	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-
Follow-up Hdwy	3.68	3.48	-	-	2.353
Pot Cap-1 Maneuver	252	666	-	-	1135
Stage 1	685	-	-	-	-
Stage 2	483	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	245	666	-	-	1135
Mov Cap-2 Maneuver	245	-	-	-	-
Stage 1	685	-	-	-	-
Stage 2	469	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	369	1135
HCM Lane V/C Ratio	-	-	0.454	0.018
HCM Control Delay (s)	-	-	22.6	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.3	0.1

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	87	2	2	628	459	83
Future Vol, veh/h	87	2	2	628	459	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	95	2	2	683	499	90

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1231	544	589	0	-	0
Stage 1	544	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	193	533	921	-	-	-
Stage 1	576	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	192	533	921	-	-	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	494	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.4	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	921	-	195	-	-
HCM Lane V/C Ratio	0.002	-	0.496	-	-
HCM Control Delay (s)	8.9	0	40.4	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	2.5	-	-

Intersection						
Int Delay, s/veh	40.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	382	97	6	395	287	40
Future Vol, veh/h	382	97	6	395	287	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	17	17	16	16	19	19
Mvmt Flow	415	105	7	429	312	43

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	520	0	911 468
Stage 1	-	-	-	-	468 -
Stage 2	-	-	-	-	443 -
Critical Hdwy	-	-	4.26	-	6.59 6.39
Critical Hdwy Stg 1	-	-	-	-	5.59 -
Critical Hdwy Stg 2	-	-	-	-	5.59 -
Follow-up Hdwy	-	-	2.344	-	3.671 3.471
Pot Cap-1 Maneuver	-	-	978	-	~ 284 562
Stage 1	-	-	-	-	596 -
Stage 2	-	-	-	-	613 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	978	-	~ 281 562
Mov Cap-2 Maneuver	-	-	-	-	~ 281 -
Stage 1	-	-	-	-	596 -
Stage 2	-	-	-	-	607 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	150.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	299	-	-	978	-
HCM Lane V/C Ratio	1.189	-	-	0.007	-
HCM Control Delay (s)	150.3	-	-	8.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	15.6	-	-	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	42	30	0	131	7	74	285	0	0	255	21
Future Vol, veh/h	17	42	30	0	131	7	74	285	0	0	255	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	20	20	20	20	20	2	2	2	2	2	2
Mvmt Flow	18	46	33	0	142	8	80	310	0	0	277	23

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	834	759	289	798	770	310	300	0	0	310	0	0
Stage 1	289	289	-	470	470	-	-	-	-	-	-	-
Stage 2	545	470	-	328	300	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	268	316	709	284	311	690	1261	-	-	1250	-	-
Stage 1	681	642	-	541	531	-	-	-	-	-	-	-
Stage 2	492	531	-	649	634	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	153	292	709	225	287	690	1261	-	-	1250	-	-
Mov Cap-2 Maneuver	153	292	-	225	287	-	-	-	-	-	-	-
Stage 1	629	642	-	499	490	-	-	-	-	-	-	-
Stage 2	319	490	-	575	634	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.7	29	1.7	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1261	-	-	299	296	1250	-	-
HCM Lane V/C Ratio	0.064	-	-	0.324	0.507	-	-	-
HCM Control Delay (s)	8	0	-	22.7	29	0	-	-
HCM Lane LOS	A	A	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	2.7	0	-	-

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	8	70	1	4	0	108	215	8	1	20	1
Future Vol, veh/h	8	8	70	1	4	0	108	215	8	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	20	20	20	20	20	2	2	2	2	2	2
Mvmt Flow	9	9	76	1	4	0	117	234	9	1	22	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	500	502	23	540	498	239	23	0	0	243	0	0
Stage 1	25	25	-	473	473	-	-	-	-	-	-	-
Stage 2	475	477	-	67	25	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	453	446	1004	426	449	758	1592	-	-	1323	-	-
Stage 1	948	840	-	539	529	-	-	-	-	-	-	-
Stage 2	538	527	-	900	840	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	420	408	1004	362	410	758	1592	-	-	1323	-	-
Mov Cap-2 Maneuver	420	408	-	362	410	-	-	-	-	-	-	-
Stage 1	867	839	-	493	484	-	-	-	-	-	-	-
Stage 2	488	482	-	822	839	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.1		14.1		2.4		0.4	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	794	399	1323	-	-
HCM Lane V/C Ratio	0.074	-	-	0.118	0.014	0.001	-	-
HCM Control Delay (s)	7.4	0	-	10.1	14.1	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

2040 Cumulative No Project
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	528	8	11	403	44	12	120	216	41	27	11
Future Volume (veh/h)	14	528	8	11	403	44	12	120	216	41	27	11
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	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	574	9	12	438	48	13	130	235	45	29	12
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	31	642	10	23	534	59	29	154	279	77	358	148
Arrive On Green	0.02	0.37	0.37	0.02	0.37	0.37	0.02	0.26	0.26	0.04	0.29	0.29
Sat Flow, veh/h	1675	1727	27	1560	1451	159	1774	596	1077	1774	1253	518
Grp Volume(v), veh/h	15	0	583	12	0	486	13	0	365	45	0	41
Grp Sat Flow(s),veh/h/ln	1675	0	1754	1560	0	1610	1774	0	1673	1774	0	1771
Q Serve(g_s), s	0.6	0.0	19.7	0.5	0.0	17.2	0.5	0.0	13.0	1.6	0.0	1.1
Cycle Q Clear(g_c), s	0.6	0.0	19.7	0.5	0.0	17.2	0.5	0.0	13.0	1.6	0.0	1.1
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.64	1.00		0.29
Lane Grp Cap(c), veh/h	31	0	652	23	0	593	29	0	433	77	0	506
V/C Ratio(X)	0.49	0.00	0.89	0.51	0.00	0.82	0.45	0.00	0.84	0.59	0.00	0.08
Avail Cap(c_a), veh/h	133	0	764	124	0	701	141	0	611	141	0	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	0.0	18.6	30.8	0.0	18.0	30.7	0.0	22.1	29.6	0.0	16.4
Incr Delay (d2), s/veh	11.5	0.0	11.8	16.2	0.0	6.6	10.8	0.0	7.5	6.9	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	0.4	0.0	11.5	0.3	0.0	8.7	0.3	0.0	6.9	0.9	0.0	0.5
LnGrp Delay(d),s/veh	42.1	0.0	30.4	47.0	0.0	24.6	41.5	0.0	29.6	36.5	0.0	16.5
LnGrp LOS	D		C	D		C	D		C	D		B
Approach Vol, veh/h		598			498			378			86	
Approach Delay, s/veh		30.7			25.2			30.0			27.0	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	22.1	4.9	29.2	5.0	23.8	5.2	29.0				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.0	5.0	27.4	5.0	23.0	5.0	27.4				
Max Q Clear Time (g_c+I1), s	3.6	15.0	2.5	21.7	2.5	3.1	2.6	19.2				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.7	0.0	0.1	0.0	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay			28.5									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

2040 Cumulative No Project
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	440	4	14	472	49	16	16	42	119	12	15
Future Volume (veh/h)	2	440	4	14	472	49	16	16	42	119	12	15
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	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	478	4	15	513	53	17	17	46	129	13	16
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	5	731	6	30	637	66	147	76	147	356	19	23
Arrive On Green	0.00	0.42	0.42	0.02	0.44	0.44	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1675	1742	15	1560	1460	151	215	502	970	1219	129	152
Grp Volume(v), veh/h	2	0	482	15	0	566	80	0	0	158	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1757	1560	0	1611	1686	0	0	1500	0	0
Q Serve(g_s), s	0.0	0.0	8.3	0.4	0.0	11.6	0.0	0.0	0.0	2.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	8.3	0.4	0.0	11.6	1.6	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.21		0.57	0.82		0.10
Lane Grp Cap(c), veh/h	5	0	737	30	0	702	370	0	0	399	0	0
V/C Ratio(X)	0.43	0.00	0.65	0.50	0.00	0.81	0.22	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	220	0	1303	205	0	1195	1013	0	0	963	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.9	0.0	8.8	18.5	0.0	9.3	14.4	0.0	0.0	15.1	0.0	0.0
Incr Delay (d2), s/veh	53.6	0.0	1.0	12.2	0.0	2.2	0.3	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.2	0.3	0.0	5.5	0.8	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	72.5	0.0	9.8	30.7	0.0	11.6	14.7	0.0	0.0	15.8	0.0	0.0
LnGrp LOS	E		A	C		B	B			B		
Approach Vol, veh/h		484			581			80			158	
Approach Delay, s/veh		10.1			12.1			14.7			15.8	
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		11.5	4.7	21.8		11.5	4.1	22.4				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	28.2		21.2	5.0	28.2				
Max Q Clear Time (g_c+1), s		3.6	2.4	10.3		5.6	2.0	13.6				
Green Ext Time (p_c), s		0.3	0.0	2.6		0.6	0.0	3.0				
Intersection Summary												
HCM 2010 Ctrl Delay				11.9								
HCM 2010 LOS				B								

Intersection						
Int Delay, s/veh	52.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	↗
Traffic Vol, veh/h	241	419	352	2	16	728
Future Vol, veh/h	241	419	352	2	16	728
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	14	14	2	2
Mvmt Flow	262	455	383	2	17	791

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	385	0	-	0	1363 384
Stage 1	-	-	-	-	384 -
Stage 2	-	-	-	-	979 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1126	-	-	-	163 ~ 664
Stage 1	-	-	-	-	688 -
Stage 2	-	-	-	-	364 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1126	-	-	-	125 ~ 664
Mov Cap-2 Maneuver	-	-	-	-	125 -
Stage 1	-	-	-	-	528 -
Stage 2	-	-	-	-	364 -

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	120.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1126	-	-	-	125	664
HCM Lane V/C Ratio	0.233	-	-	-	0.139	1.192
HCM Control Delay (s)	9.2	-	-	-	38.4	122.6
HCM Lane LOS	A	-	-	-	E	F
HCM 95th %tile Q(veh)	0.9	-	-	-	0.5	26.9

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	1102.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	111	15	414	148	0	0	0	0	599	20	106
Future Vol, veh/h	0	111	15	414	148	0	0	0	0	599	20	106
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	14	0	0	0	0	0	20	4	2
Mvmt Flow	0	121	16	450	161	0	0	0	0	651	22	115

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	137	0	0		1190	1198	161
Stage 1	-	-	-	-	-	-		1061	1061	-
Stage 2	-	-	-	-	-	-		129	137	-
Critical Hdwy	-	-	-	4.24	-	-		6.6	6.54	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.6	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.6	5.54	-
Follow-up Hdwy	-	-	-	2.326	-	-		3.68	4.036	3.318
Pot Cap-1 Maneuver	0	-	-	1376	-	0		~ 191	184	884
Stage 1	0	-	-	-	-	0		~ 308	298	-
Stage 2	0	-	-	-	-	0		854	779	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	1376	-	-		~ 122	0	884
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 122	0	-
Stage 1	-	-	-	-	-	-		~ 308	0	-
Stage 2	-	-	-	-	-	-		~ 547	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.5	\$ 2144.5
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1376	-	140
HCM Lane V/C Ratio	-	-	0.327	-	5.629
HCM Control Delay (s)	-	-	8.9	\$ 2144.5	
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	1.4	-	84.5

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	34.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	65	645	0	0	552	308	10	3	423	0	0	0
Future Vol, veh/h	65	645	0	0	552	308	10	3	423	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	8	0	0	10	20	0	20	20	0	0	0
Mvmt Flow	71	701	0	0	600	335	11	3	460	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	935	0	- - - 0 1611 1778 701
Stage 1	-	-	- - - 843 843 -
Stage 2	-	-	- - - 768 935 -
Critical Hdwy	4.2	-	- - - 6.4 6.7 6.4
Critical Hdwy Stg 1	-	-	- - - 5.4 5.7 -
Critical Hdwy Stg 2	-	-	- - - 5.4 5.7 -
Follow-up Hdwy	2.29	-	- - - 3.5 4.18 3.48
Pot Cap-1 Maneuver	701	- 0 0	- - - 116 74 ~410
Stage 1	-	- 0 0	- - - 426 355 -
Stage 2	-	- 0 0	- - - 461 321 -
Platoon blocked, %	-	-	- -
Mov Cap-1 Maneuver	701	- - -	- - - 97 0 ~410
Mov Cap-2 Maneuver	-	- - -	- - - 97 0 -
Stage 1	-	- - -	- - - 355 0 -
Stage 2	-	- - -	- - - 461 0 -




























Approach	EB	WB	NB
HCM Control Delay, s	1	0	159.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	382	701	-	-	-
HCM Lane V/C Ratio	1.241	0.101	-	-	-
HCM Control Delay (s)	159.1	10.7	0	-	-
HCM Lane LOS	F	B	A	-	-
HCM 95th %tile Q(veh)	20.3	0.3	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis
3: Sperry Ave & Rogers Rd

2040 Cumulative No Project
Timing Plan: PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 									 	  	
Traffic Volume (vph)	276	525	267	113	400	258	278	8	117	139	0	182	
Future Volume (vph)	276	525	267	113	400	258	278	8	117	139	0	182	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	
Satd. Flow (prot)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	300	571	290	123	435	280	302	9	127	151	0	198	
RTOR Reduction (vph)	0	0	188	0	0	204	0	0	100	0	0	146	
Lane Group Flow (vph)	300	571	102	123	435	76	302	9	27	0	151	53	
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov	
Protected Phases	5	2		1	6		8	8		7	7	5	
Permitted Phases			2			6			8			7	
Actuated Green, G (s)	16.5	32.6	32.6	10.9	25.0	25.0	19.4	19.4	19.4		8.0	24.5	
Effective Green, g (s)	16.5	32.6	32.6	10.9	25.0	25.0	19.4	19.4	19.4		8.0	24.5	
Actuated g/C Ratio	0.18	0.35	0.35	0.12	0.27	0.27	0.21	0.21	0.21		0.09	0.27	
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	295	1157	558	208	435	428	371	391	332		154	661	
v/s Ratio Prot	c0.18	0.17		0.07	c0.27		c0.17	0.00			c0.08	0.01	
v/s Ratio Perm			0.06			0.05			0.02			0.01	
v/c Ratio	1.02	0.49	0.18	0.59	1.00	0.18	0.81	0.02	0.08		0.98	0.08	
Uniform Delay, d1	38.0	23.4	20.7	38.6	33.7	25.8	34.8	29.0	29.3		42.1	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	56.8	0.7	0.3	4.5	43.2	0.2	12.8	0.0	0.1		66.4	0.1	
Delay (s)	94.7	24.1	21.0	43.1	76.9	26.0	47.6	29.0	29.4		108.5	25.5	
Level of Service	F	C	C	D	E	C	D	C	C		F	C	
Approach Delay (s)		41.6			54.9			41.9			61.4		
Approach LOS		D			D			D			E		
Intersection Summary													
HCM 2000 Control Delay			48.1									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.95										
Actuated Cycle Length (s)			92.4									Sum of lost time (s)	23.5
Intersection Capacity Utilization			73.0%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

2040 Cumulative No Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↘		↖↗	↖↗	↖	↖	↘		↖	↘	
Traffic Volume (veh/h)	188	597	45	10	568	70	0	19	17	122	11	246
Future Volume (veh/h)	188	597	45	10	568	70	0	19	17	122	11	246
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1583	1753	1900	1900	1827	1583	1900	1900	1900	1583	1595	1900
Adj Flow Rate, veh/h	204	649	49	11	617	76	0	21	18	133	12	267
Adj No. of Lanes	2	1	0	2	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	292	782	59	59	1396	541	117	245	210	397	15	338
Arrive On Green	0.10	0.49	0.49	0.02	0.40	0.40	0.00	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	2925	1610	122	3510	3471	1346	1118	946	811	1158	59	1306
Grp Volume(v), veh/h	204	0	698	11	617	76	0	0	39	133	0	279
Grp Sat Flow(s),veh/h/ln	1463	0	1732	1755	1736	1346	1118	0	1757	1158	0	1364
Q Serve(g_s), s	4.1	0.0	21.4	0.2	7.9	2.2	0.0	0.0	1.0	6.0	0.0	11.7
Cycle Q Clear(g_c), s	4.1	0.0	21.4	0.2	7.9	2.2	0.0	0.0	1.0	7.1	0.0	11.7
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.46	1.00		0.96
Lane Grp Cap(c), veh/h	292	0	841	59	1396	541	117	0	455	397	0	353
V/C Ratio(X)	0.70	0.00	0.83	0.19	0.44	0.14	0.00	0.00	0.09	0.33	0.00	0.79
Avail Cap(c_a), veh/h	442	0	1050	343	1919	744	500	0	1057	795	0	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	13.6	29.8	13.4	11.6	0.0	0.0	17.3	20.0	0.0	21.2
Incr Delay (d2), s/veh	3.0	0.0	6.2	1.5	0.5	0.3	0.0	0.0	0.1	0.5	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	11.5	0.1	3.9	0.8	0.0	0.0	0.5	2.0	0.0	4.8
LnGrp Delay(d),s/veh	29.8	0.0	19.8	31.3	13.8	11.9	0.0	0.0	17.4	20.5	0.0	25.2
LnGrp LOS	C		B	C	B	B			B	C		C
Approach Vol, veh/h		902			704			39			412	
Approach Delay, s/veh		22.1			13.9			17.4			23.7	
Approach LOS		C			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	35.6		20.4	10.6	30.4		20.4				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	9.3	34.0		37.0				
Max Q Clear Time (g_c+1/2), s	12.2	23.4		13.7	6.1	9.9		3.0				
Green Ext Time (p_c), s	0.0	6.5		2.2	0.2	7.9		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			19.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 5: Baldwin Rd & Sperry Ave

2040 Cumulative No Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	98	551	143	11	571	57	88	15	12	73	173	56
Future Volume (veh/h)	98	551	143	11	571	57	88	15	12	73	173	56
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		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	1856	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	107	599	155	12	621	62	96	16	13	79	188	61
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	251	695	180	29	793	701	126	172	140	226	239	77
Arrive On Green	0.07	0.49	0.49	0.02	0.43	0.43	0.07	0.18	0.18	0.07	0.17	0.17
Sat Flow, veh/h	3476	1423	368	1660	1827	1615	1810	965	784	3476	1375	446
Grp Volume(v), veh/h	107	0	754	12	621	62	96	0	29	79	0	249
Grp Sat Flow(s),veh/h/ln	1738	0	1791	1660	1827	1615	1810	0	1749	1738	0	1821
Q Serve(g_s), s	2.2	0.0	27.5	0.5	21.5	1.7	3.9	0.0	1.0	1.6	0.0	9.7
Cycle Q Clear(g_c), s	2.2	0.0	27.5	0.5	21.5	1.7	3.9	0.0	1.0	1.6	0.0	9.7
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.45	1.00		0.24
Lane Grp Cap(c), veh/h	251	0	875	29	793	701	126	0	312	226	0	316
V/C Ratio(X)	0.43	0.00	0.86	0.41	0.78	0.09	0.76	0.00	0.09	0.35	0.00	0.79
Avail Cap(c_a), veh/h	282	0	1019	135	1040	919	157	0	641	296	0	665
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	16.7	35.9	17.9	12.3	33.8	0.0	25.4	33.1	0.0	29.2
Incr Delay (d2), s/veh	0.4	0.0	8.2	18.2	4.4	0.1	11.7	0.0	0.1	0.3	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	15.4	0.4	11.7	0.8	2.3	0.0	0.5	0.8	0.0	5.2
LnGrp Delay(d),s/veh	33.3	0.0	24.9	54.2	22.4	12.4	45.5	0.0	25.5	33.4	0.0	33.6
LnGrp LOS	C		C	D	C	B	D		C	C		C
Approach Vol, veh/h		861			695			125			328	
Approach Delay, s/veh		25.9			22.0			40.9			33.6	
Approach LOS		C			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	41.6	9.4	17.4	9.5	37.6	9.0	17.8				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	42.1	* 6.4	27.0	* 6	42.1	* 6.3	27.1				
Max Q Clear Time (g_c+1), s	12.5	29.5	5.9	11.7	4.2	23.5	3.6	3.0				
Green Ext Time (p_c), s	0.0	6.6	0.0	1.2	0.0	7.2	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			26.7									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Cumulative No Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	558	34	75	607	80	10	32	22	38	28	35
Future Volume (veh/h)	88	558	34	75	607	80	10	32	22	38	28	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	96	607	37	82	660	87	11	35	24	41	30	38
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	173	1170	71	158	1059	139	264	112	77	273	81	103
Arrive On Green	0.10	0.35	0.35	0.09	0.34	0.34	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	3362	205	1810	3118	410	1348	1050	720	1359	761	964
Grp Volume(v), veh/h	96	317	327	82	371	376	11	0	59	41	0	68
Grp Sat Flow(s),veh/h/ln	1810	1755	1812	1810	1754	1774	1348	0	1769	1359	0	1725
Q Serve(g_s), s	2.2	6.1	6.1	1.8	7.5	7.6	0.3	0.0	1.3	1.2	0.0	1.6
Cycle Q Clear(g_c), s	2.2	6.1	6.1	1.8	7.5	7.6	1.9	0.0	1.3	2.5	0.0	1.6
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	173	611	630	158	596	603	264	0	189	273	0	185
V/C Ratio(X)	0.55	0.52	0.52	0.52	0.62	0.62	0.04	0.00	0.31	0.15	0.00	0.37
Avail Cap(c_a), veh/h	276	820	846	365	906	916	816	0	913	829	0	890
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	11.1	11.1	18.6	11.8	11.8	18.6	0.0	17.6	18.8	0.0	17.7
Incr Delay (d2), s/veh	2.8	1.0	0.9	2.6	1.5	1.5	0.1	0.0	0.9	0.3	0.0	1.2
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	1.2	3.1	3.2	1.0	3.9	3.9	0.1	0.0	0.7	0.5	0.0	0.8
LnGrp Delay(d),s/veh	21.2	12.0	12.0	21.2	13.3	13.3	18.6	0.0	18.5	19.0	0.0	18.9
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		740			829			70			109	
Approach Delay, s/veh		13.2			14.1			18.5			18.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	21.3		11.1	10.6	21.0		11.1				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	19.9	19.9		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1), s	13.8	8.1		4.5	4.2	9.6		3.9				
Green Ext Time (p_c), s	0.1	3.9		0.4	0.0	4.9		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				14.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Cumulative No Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	377	49	243	384	120	29	107	82	154	372	58
Future Volume (veh/h)	142	377	49	243	384	120	29	107	82	154	372	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1841	1900	1881	1845	1900	1845	1873	1900	1881	1900	1900
Adj Flow Rate, veh/h	154	410	53	264	417	130	32	116	89	167	404	63
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
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	3	3	1	3	0	3	1	1	1	0	0
Cap, veh/h	190	606	78	312	871	399	69	222	170	179	546	451
Arrive On Green	0.11	0.19	0.19	0.17	0.25	0.25	0.04	0.23	0.23	0.10	0.29	0.29
Sat Flow, veh/h	1774	3111	400	1792	3505	1605	1757	978	750	1792	1900	1570
Grp Volume(v), veh/h	154	229	234	264	417	130	32	0	205	167	404	63
Grp Sat Flow(s),veh/h/ln	1774	1749	1762	1792	1752	1605	1757	0	1728	1792	1900	1570
Q Serve(g_s), s	6.3	9.0	9.1	10.6	7.5	4.9	1.3	0.0	7.7	6.9	14.3	2.2
Cycle Q Clear(g_c), s	6.3	9.0	9.1	10.6	7.5	4.9	1.3	0.0	7.7	6.9	14.3	2.2
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	190	341	343	312	871	399	69	0	392	179	546	451
V/C Ratio(X)	0.81	0.67	0.68	0.85	0.48	0.33	0.47	0.00	0.52	0.94	0.74	0.14
Avail Cap(c_a), veh/h	191	518	522	458	1510	692	144	0	791	179	903	746
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	27.7	27.8	29.7	23.8	22.8	34.9	0.0	25.2	33.2	23.9	19.6
Incr Delay (d2), s/veh	22.3	4.9	5.0	9.3	0.9	1.0	4.9	0.0	2.3	48.9	4.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	4.8	4.9	6.0	3.8	2.3	0.7	0.0	4.0	5.8	8.2	1.0
LnGrp Delay(d),s/veh	54.7	32.6	32.7	39.0	24.7	23.8	39.8	0.0	27.5	82.1	28.1	19.9
LnGrp LOS	D	C	C	D	C	C	D		C	F	C	B
Approach Vol, veh/h		617		811			237			634		
Approach Delay, s/veh		38.2		29.2			29.1			41.5		
Approach LOS		D		C			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.9	20.5	7.5	27.4	15.0	24.5	12.0	22.9				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	19.6	22.0	6.1	35.3	8.0	32.0	7.4	34.0				
Max Q Clear Time (g_c+1/2g), s	11.1	11.1	3.3	16.3	8.3	9.5	8.9	9.7				
Green Ext Time (p_c), s	0.4	3.2	0.0	4.7	0.0	5.6	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			35.0									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 8: Del Puerto Ave & Sperry Ave

2040 Cumulative No Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	281	63	23	364	15	39	38	6	3	59	148
Future Volume (veh/h)	157	281	63	23	364	15	39	38	6	3	59	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	171	305	68	25	396	16	42	41	7	3	64	161
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	565	1370	301	657	892	787	280	223	29	114	106	260
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	988	2805	616	1024	1827	1612	535	1019	131	8	487	1189
Grp Volume(v), veh/h	171	185	188	25	396	16	90	0	0	228	0	0
Grp Sat Flow(s),veh/h/ln	988	1721	1701	1024	1827	1612	1685	0	0	1684	0	0
Q Serve(g_s), s	4.4	2.0	2.1	0.5	4.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.0	2.0	2.1	2.5	4.6	0.2	1.3	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.36	1.00		1.00	0.47		0.08	0.01		0.71
Lane Grp Cap(c), veh/h	565	840	831	657	892	787	531	0	0	480	0	0
V/C Ratio(X)	0.30	0.22	0.23	0.04	0.44	0.02	0.17	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	887	1401	1385	991	1488	1313	1296	0	0	1362	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	4.8	4.8	5.5	5.4	4.3	10.4	0.0	0.0	11.4	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.3	0.3	0.1	0.7	0.0	0.1	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.0	1.0	0.1	2.4	0.1	0.7	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	9.0	5.0	5.1	5.5	6.2	4.3	10.5	0.0	0.0	12.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		544			437			90			228	
Approach Delay, s/veh		6.3			6.1			10.5			12.2	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.4		12.0		20.4		12.0				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.4		24.1		26.4		24.1				
Max Q Clear Time (g_c+1), s		11.0		3.3		6.6		6.0				
Green Ext Time (p_c), s		4.8		0.4		4.5		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.5								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	108.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	158	109	127	15	54	6	111	269	48	19	238	175
Future Vol, veh/h	158	109	127	15	54	6	111	269	48	19	238	175
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	4	6	0	2	0	6	3	7	16	5	4
Mvmt Flow	172	118	138	16	59	7	121	292	52	21	259	190

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	894	887	259	989	861	318	259	0	0	344	0	0
Stage 1	301	301	-	560	560	-	-	-	-	-	-	-
Stage 2	593	586	-	429	301	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.54	6.26	7.1	6.52	6.2	4.16	-	-	4.26	-	-
Critical Hdwy Stg 1	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.036	3.354	3.5	4.018	3.3	2.254	-	-	2.344	-	-
Pot Cap-1 Maneuver	258	281	770	228	293	727	1283	-	-	1141	-	0
Stage 1	700	661	-	516	511	-	-	-	-	-	-	0
Stage 2	485	494	-	608	665	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	189	243	770	104	253	727	1283	-	-	1141	-	-
Mov Cap-2 Maneuver	189	243	-	104	253	-	-	-	-	-	-	-
Stage 1	618	647	-	456	451	-	-	-	-	-	-	-
Stage 2	369	436	-	399	651	-	-	-	-	-	-	-





















Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 309	33	2.1	0.6
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1283	-	-	272	193	727	1141	-
HCM Lane V/C Ratio	0.094	-	-	1.574	0.389	0.009	0.018	-
HCM Control Delay (s)	8.1	0	-	\$ 309	35	10	8.2	0
HCM Lane LOS	A	A	-	F	E	B	A	A
HCM 95th %tile Q(veh)	0.3	-	-	25.8	1.7	0	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

2040 Cumulative No Project
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	93	61	74	83	12	28	189	62	57	291	13
Future Volume (veh/h)	13	93	61	74	83	12	28	189	62	57	291	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1583	1583	1900	1583	1583	1900
Adj Flow Rate, veh/h	14	101	66	80	90	13	30	205	67	62	316	14
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	278	165	108	279	251	36	63	247	81	108	370	16
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.22	0.22	0.07	0.25	0.25
Sat Flow, veh/h	1774	1053	688	1774	1592	230	1508	1144	374	1508	1505	67
Grp Volume(v), veh/h	14	0	167	80	0	103	30	0	272	62	0	330
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1774	0	1822	1508	0	1517	1508	0	1572
Q Serve(g_s), s	0.3	0.0	4.1	1.8	0.0	2.3	0.9	0.0	7.9	1.8	0.0	9.2
Cycle Q Clear(g_c), s	0.3	0.0	4.1	1.8	0.0	2.3	0.9	0.0	7.9	1.8	0.0	9.2
Prop In Lane	1.00		0.40	1.00		0.13	1.00		0.25	1.00		0.04
Lane Grp Cap(c), veh/h	278	0	273	279	0	287	63	0	327	108	0	386
V/C Ratio(X)	0.05	0.00	0.61	0.29	0.00	0.36	0.48	0.00	0.83	0.58	0.00	0.85
Avail Cap(c_a), veh/h	649	0	637	1194	0	1226	197	0	754	204	0	787
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	18.0	17.1	0.0	17.3	21.5	0.0	17.2	20.6	0.0	16.5
Incr Delay (d2), s/veh	0.0	0.0	0.8	0.2	0.0	0.3	2.1	0.0	2.1	1.8	0.0	2.1
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	0.2	0.0	2.0	0.9	0.0	1.2	0.4	0.0	3.4	0.8	0.0	4.2
LnGrp Delay(d),s/veh	16.5	0.0	18.9	17.3	0.0	17.6	23.6	0.0	19.3	22.4	0.0	18.7
LnGrp LOS	B		B	B		B	C		B	C		B
Approach Vol, veh/h		181			183			302			392	
Approach Delay, s/veh		18.7			17.4			19.7			19.3	
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		11.4	7.3	14.8		12.4	5.9	16.2				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 17	6.2	22.8		30.9	6.0	23.0				
Max Q Clear Time (g_c+I1), s		6.1	3.8	9.9		4.3	2.9	11.2				
Green Ext Time (p_c), s		0.3	0.0	0.2		0.2	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			19.0									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Cumulative No Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	328	11	281	446	96	18	184	245	116	234	3
Future Volume (veh/h)	25	328	11	281	446	96	18	184	245	116	234	3
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	0.99		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1870	1900	1810	1900	1900	1900	1845	1900	1881	1811	1900
Adj Flow Rate, veh/h	27	357	12	305	485	104	20	200	266	126	254	3
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	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, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	311	471	16	460	730	607	402	381	337	306	935	11
Arrive On Green	0.03	0.26	0.26	0.15	0.38	0.38	0.02	0.22	0.22	0.08	0.27	0.27
Sat Flow, veh/h	1723	1797	60	1723	1900	1579	1810	1752	1550	1792	3481	41
Grp Volume(v), veh/h	27	0	369	305	485	104	20	200	266	126	125	132
Grp Sat Flow(s),veh/h/ln	1723	0	1857	1723	1900	1579	1810	1752	1550	1792	1720	1802
Q Serve(g_s), s	0.7	0.0	10.9	7.1	12.6	2.6	0.5	6.0	9.7	3.1	3.4	3.4
Cycle Q Clear(g_c), s	0.7	0.0	10.9	7.1	12.6	2.6	0.5	6.0	9.7	3.1	3.4	3.4
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	311	0	487	460	730	607	402	381	337	306	462	484
V/C Ratio(X)	0.09	0.00	0.76	0.66	0.66	0.17	0.05	0.53	0.79	0.41	0.27	0.27
Avail Cap(c_a), veh/h	417	0	933	732	1369	1138	602	675	597	352	605	634
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	0.00	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	15.4	0.0	20.3	13.1	15.2	12.1	17.4	20.6	22.1	16.4	17.2	17.2
Incr Delay (d2), s/veh	0.0	0.0	0.9	0.6	0.4	0.0	0.0	0.4	1.6	0.3	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	0.3	0.0	5.7	3.4	6.7	1.1	0.2	2.9	4.3	1.5	1.7	1.7
LnGrp Delay(d),s/veh	15.5	0.0	21.2	13.7	15.6	12.2	17.4	21.1	23.7	16.7	17.3	17.3
LnGrp LOS	B		C	B	B	B	B	C	C	B	B	B
Approach Vol, veh/h		396			894			486			383	
Approach Delay, s/veh		20.8			14.5			22.3			17.1	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	27.5	8.5	17.9	13.1	20.3	5.4	20.9				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	43.0	6.0	23.0	18.5	30.0	8.0	21.0				
Max Q Clear Time (g_c+1/2), s	12.7	14.6	5.1	11.7	9.1	12.9	2.5	5.4				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.4	0.1	0.4	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			17.9									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕			↕			↖	↗
Traffic Vol, veh/h	6	20	20	13	57	66	51	235	6	46	328	12
Future Vol, veh/h	6	20	20	13	57	66	51	235	6	46	328	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	20	20	20	20	20	20
Mvmt Flow	7	22	22	14	62	72	55	255	7	50	357	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	893	829	357	855	839	259	370	0	0	262	0	0
Stage 1	457	457	-	369	369	-	-	-	-	-	-	-
Stage 2	436	372	-	486	470	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.38	-	-	2.38	-	-
Pot Cap-1 Maneuver	262	306	687	278	302	780	1096	-	-	1205	-	-
Stage 1	583	568	-	651	621	-	-	-	-	-	-	-
Stage 2	599	619	-	563	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	180	273	687	232	269	780	1096	-	-	1205	-	-
Mov Cap-2 Maneuver	180	273	-	232	269	-	-	-	-	-	-	-
Stage 1	549	538	-	613	584	-	-	-	-	-	-	-
Stage 2	458	582	-	496	531	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	20	1.5	1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1096	-	-	244	687	386	1205	-	-
HCM Lane V/C Ratio	0.051	-	-	0.116	0.032	0.383	0.041	-	-
HCM Control Delay (s)	8.5	0	-	21.7	10.4	20	8.1	0	-
HCM Lane LOS	A	A	-	C	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.1	1.8	0.1	-	-

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	1	110	50	29	68	1	67	2	37	0	3	1
Future Vol, veh/h	1	110	50	29	68	1	67	2	37	0	3	1
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	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	4	8	0	15	0	3	20	3	0	20	20
Mvmt Flow	1	120	54	32	74	1	73	2	40	0	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	174	0	0	290	288	147	309	315	75
Stage 1	-	-	-	-	-	-	149	149	-	139	139	-
Stage 2	-	-	-	-	-	-	141	139	-	170	176	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.13	6.7	6.23	7.1	6.7	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.7	-	6.1	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.7	-	6.1	5.7	-
Follow-up Hdwy	2.38	-	-	2.2	-	-	3.527	4.18	3.327	3.5	4.18	3.48
Pot Cap-1 Maneuver	1418	-	-	1415	-	-	660	593	897	647	572	939
Stage 1	-	-	-	-	-	-	851	741	-	869	748	-
Stage 2	-	-	-	-	-	-	860	748	-	837	721	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1418	-	-	1415	-	-	645	579	897	606	558	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	645	579	-	606	558	-
Stage 1	-	-	-	-	-	-	850	740	-	868	731	-
Stage 2	-	-	-	-	-	-	836	731	-	797	720	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.2			10.6			10.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	645	872	1418	-	-	1415	-	-	621
HCM Lane V/C Ratio	0.113	0.049	0.001	-	-	0.022	-	-	0.007
HCM Control Delay (s)	11.3	9.3	7.5	-	-	7.6	-	-	10.8
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.2	0	-	-	0.1	-	-	0

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔		↕		↕		↕↔	↕	↕	↕	↕
Traffic Vol, veh/h	0	0	0	29	58	68	2	46	33	55	46	38
Future Vol, veh/h	0	0	0	29	58	68	2	46	33	55	46	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	0	4	0	20	20	4	13	0
Mvmt Flow	0	0	0	32	63	74	2	50	36	60	50	41

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	332	281	71	245	265	50	91	0	0	86	0	0
Stage 1	191	191	-	54	54	-	-	-	-	-	-	-
Stage 2	141	90	-	191	211	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.3	6.5	6.24	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.68	4	3.336	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	621	627	991	673	644	1013	1517	-	-	1498	-	-
Stage 1	811	742	-	915	854	-	-	-	-	-	-	-
Stage 2	862	820	-	771	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	514	601	991	652	618	1013	1517	-	-	1498	-	-
Mov Cap-2 Maneuver	514	601	-	652	618	-	-	-	-	-	-	-
Stage 1	810	712	-	914	853	-	-	-	-	-	-	-
Stage 2	739	819	-	740	702	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.4	0.2	3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1517	-	-	-	652	1013	1498	-	-
HCM Lane V/C Ratio	0.001	-	-	-	0.048	0.073	0.04	-	-
HCM Control Delay (s)	7.4	0	-	0	10.8	8.8	7.5	-	-
HCM Lane LOS	A	A	-	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2	0.1	-	-

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	0	1	0	10	14	16	1	118	43	16	47	12
Future Vol, veh/h	0	1	0	10	14	16	1	118	43	16	47	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	8	8	8	18	18	18	16	16	16
Mvmt Flow	0	1	0	11	15	17	1	128	47	17	51	13

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	262	269	58	246	252	152	64	0	0	175	0	0
Stage 1	92	92	-	154	154	-	-	-	-	-	-	-
Stage 2	170	177	-	92	98	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.18	6.58	6.28	4.28	-	-	4.26	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.572	4.072	3.372	2.362	-	-	2.344	-	-
Pot Cap-1 Maneuver	691	637	1008	695	641	879	1442	-	-	1321	-	-
Stage 1	915	819	-	834	759	-	-	-	-	-	-	-
Stage 2	832	753	-	900	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	658	628	1008	687	632	879	1442	-	-	1321	-	-
Mov Cap-2 Maneuver	658	628	-	687	632	-	-	-	-	-	-	-
Stage 1	914	808	-	833	758	-	-	-	-	-	-	-
Stage 2	798	752	-	887	792	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		10.3		0		1.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1442	-	-	628	728	1321	-	-
HCM Lane V/C Ratio	0.001	-	-	0.002	0.06	0.013	-	-
HCM Control Delay (s)	7.5	0	-	10.7	10.3	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	37	8	17	22	8	5	48	28	17	101	3
Future Vol, veh/h	2	37	8	17	22	8	5	48	28	17	101	3
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
Heavy Vehicles, %	2	2	2	8	8	8	9	9	9	14	14	14
Mvmt Flow	2	40	9	18	24	9	5	52	30	18	110	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.9	7.7	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	4%	36%	14%
Vol Thru, %	59%	79%	47%	83%
Vol Right, %	35%	17%	17%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	47	47	121
LT Vol	5	2	17	17
Through Vol	48	37	22	101
RT Vol	28	8	8	3
Lane Flow Rate	88	51	51	132
Geometry Grp	1	1	1	1
Degree of Util (X)	0.104	0.062	0.065	0.161
Departure Headway (Hd)	4.239	4.403	4.567	4.395
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	849	817	788	804
Service Time	2.247	2.411	2.574	2.491
HCM Lane V/C Ratio	0.104	0.062	0.065	0.164
HCM Control Delay	7.7	7.7	7.9	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.2	0.6

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	3	65	85	255	508	6
Future Vol, veh/h	3	65	85	255	508	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	11	14	14
Mvmt Flow	3	71	92	277	552	7

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1017	556	559	0	-	0
Stage 1	556	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	263	531	1017	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	635	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	235	531	1017	-	-	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	513	-	-	-	-	-
Stage 2	635	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	2.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1017	-	503	-	-
HCM Lane V/C Ratio	0.091	-	0.147	-	-
HCM Control Delay (s)	8.9	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.5	-	-

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	92	5	6	280	374	132
Future Vol, veh/h	92	5	6	280	374	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	20	20	20	20
Mvmt Flow	100	5	7	304	407	143

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	797	479	550	0	-	0
Stage 1	479	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.3	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.38	-	-	-
Pot Cap-1 Maneuver	346	573	935	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	573	935	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.7	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	935	-	350	-	-
HCM Lane V/C Ratio	0.007	-	0.301	-	-
HCM Control Delay (s)	8.9	0	19.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.2	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	13	9	287	20	42	490
Future Vol, veh/h	13	9	287	20	42	490
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	11	11	14	14
Mvmt Flow	14	10	312	22	46	533

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	948	323	0	0	334
Stage 1	323	-	-	-	-
Stage 2	625	-	-	-	-
Critical Hdwy	6.49	6.29	-	-	4.24
Critical Hdwy Stg 1	5.49	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-
Follow-up Hdwy	3.581	3.381	-	-	2.326
Pot Cap-1 Maneuver	281	702	-	-	1161
Stage 1	718	-	-	-	-
Stage 2	520	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	265	702	-	-	1161
Mov Cap-2 Maneuver	265	-	-	-	-
Stage 1	718	-	-	-	-
Stage 2	491	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	356	1161
HCM Lane V/C Ratio	-	-	0.067	0.039
HCM Control Delay (s)	-	-	15.8	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	43	4	0	401	486	55
Future Vol, veh/h	43	4	0	401	486	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	1	11	14	14
Mvmt Flow	47	4	0	436	528	60

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	994	558	588	0	-	0
Stage 1	558	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.11	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.209	-	-	-
Pot Cap-1 Maneuver	264	516	992	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	264	516	992	-	-	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	992	-	275	-	-
HCM Lane V/C Ratio	-	-	0.186	-	-
HCM Control Delay (s)	0	-	21.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection						
Int Delay, s/veh	7.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	522	53	5	284	173	15
Future Vol, veh/h	522	53	5	284	173	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	14	14	18	18
Mvmt Flow	567	58	5	309	188	16

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	625	0	915 596
Stage 1	-	-	-	-	596 -
Stage 2	-	-	-	-	319 -
Critical Hdwy	-	-	4.24	-	6.58 6.38
Critical Hdwy Stg 1	-	-	-	-	5.58 -
Critical Hdwy Stg 2	-	-	-	-	5.58 -
Follow-up Hdwy	-	-	2.326	-	3.662 3.462
Pot Cap-1 Maneuver	-	-	901	-	284 475
Stage 1	-	-	-	-	520 -
Stage 2	-	-	-	-	702 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	901	-	282 475
Mov Cap-2 Maneuver	-	-	-	-	282 -
Stage 1	-	-	-	-	520 -
Stage 2	-	-	-	-	697 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	42
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	291	-	-	901	-
HCM Lane V/C Ratio	0.702	-	-	0.006	-
HCM Control Delay (s)	42	-	-	9	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	4.9	-	-	0	-

Intersection												
Int Delay, s/veh	13.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	211	29	0	66	5	1	19	2	51	409	22
Future Vol, veh/h	34	211	29	0	66	5	1	19	2	51	409	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	37	229	32	0	72	5	1	21	2	55	445	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	630	592	457	722	603	22	469	0	0	23	0	0
Stage 1	567	567	-	24	24	-	-	-	-	-	-	-
Stage 2	63	25	-	698	579	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	386	411	591	333	404	1035	1093	-	-	1592	-	-
Stage 1	498	497	-	976	861	-	-	-	-	-	-	-
Stage 2	933	863	-	420	490	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	317	391	591	163	385	1035	1093	-	-	1592	-	-
Mov Cap-2 Maneuver	317	391	-	163	385	-	-	-	-	-	-	-
Stage 1	498	474	-	975	860	-	-	-	-	-	-	-
Stage 2	850	862	-	196	467	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	37.5		16		0.4		0.8	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1093	-	-	394	403	1592	-	-
HCM Lane V/C Ratio	0.001	-	-	0.756	0.191	0.035	-	-
HCM Control Delay (s)	8.3	0	-	37.5	16	7.3	0	-
HCM Lane LOS	A	A	-	E	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	6.1	0.7	0.1	-	-

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	25	309	2	4	1	21	45	21	7	112	2
Future Vol, veh/h	25	25	309	2	4	1	21	45	21	7	112	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	27	27	336	2	4	1	23	49	23	8	122	2






















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	248	257	123	428	247	61	124	0	0	72	0	0
Stage 1	139	139	-	107	107	-	-	-	-	-	-	-
Stage 2	109	118	-	321	140	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	693	637	912	525	644	985	1463	-	-	1528	-	-
Stage 1	850	770	-	882	793	-	-	-	-	-	-	-
Stage 2	882	787	-	676	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	677	623	912	316	630	985	1463	-	-	1528	-	-
Mov Cap-2 Maneuver	677	623	-	316	630	-	-	-	-	-	-	-
Stage 1	836	765	-	868	780	-	-	-	-	-	-	-
Stage 2	862	774	-	409	763	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	12.2	1.8	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1463	-	-	863	511	1528	-	-
HCM Lane V/C Ratio	0.016	-	-	0.452	0.015	0.005	-	-
HCM Control Delay (s)	7.5	0	-	12.6	12.2	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.4	0	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

2040 Cumulative No Project
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	565	10	29	446	36	5	26	50	54	26	12
Future Volume (veh/h)	10	565	10	29	446	36	5	26	50	54	26	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	614	11	32	485	39	5	28	54	59	28	13
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	23	727	13	60	744	60	12	55	107	98	175	81
Arrive On Green	0.01	0.44	0.44	0.04	0.46	0.46	0.01	0.10	0.10	0.06	0.15	0.15
Sat Flow, veh/h	1616	1661	30	1691	1622	130	1774	570	1099	1774	1205	559
Grp Volume(v), veh/h	11	0	625	32	0	524	5	0	82	59	0	41
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1669	1774	0	1764
Q Serve(g_s), s	0.4	0.0	17.2	1.0	0.0	12.1	0.1	0.0	2.4	1.7	0.0	1.1
Cycle Q Clear(g_c), s	0.4	0.0	17.2	1.0	0.0	12.1	0.1	0.0	2.4	1.7	0.0	1.1
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.32
Lane Grp Cap(c), veh/h	23	0	740	60	0	804	12	0	162	98	0	256
V/C Ratio(X)	0.48	0.00	0.84	0.53	0.00	0.65	0.42	0.00	0.51	0.60	0.00	0.16
Avail Cap(c_a), veh/h	155	0	1204	162	0	1248	170	0	741	170	0	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	13.1	24.8	0.0	10.9	25.9	0.0	22.4	24.1	0.0	19.5
Incr Delay (d2), s/veh	14.9	0.0	3.1	7.1	0.0	0.9	21.9	0.0	2.4	5.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	8.6	0.6	0.0	5.9	0.1	0.0	1.2	1.0	0.0	0.5
LnGrp Delay(d),s/veh	40.5	0.0	16.2	31.9	0.0	11.8	47.8	0.0	24.9	30.0	0.0	19.8
LnGrp LOS	D		B	C		B	D		C	C		B
Approach Vol, veh/h		636			556			87			100	
Approach Delay, s/veh		16.7			13.0			26.2			25.8	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	10.9	5.9	28.7	4.4	13.4	4.7	29.8				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.2	5.0	37.2	5.0	23.2	5.0	37.2				
Max Q Clear Time (g_c+I1), s	3.7	4.4	3.0	19.2	2.1	3.1	2.4	14.1				
Green Ext Time (p_c), s	0.0	0.3	0.0	3.6	0.0	0.1	0.0	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay			16.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

2040 Cumulative No Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	472	7	29	466	30	9	12	20	162	43	21
Future Volume (veh/h)	4	472	7	29	466	30	9	12	20	162	43	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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	4	513	8	32	507	33	10	13	22	176	47	23
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	9	655	10	62	700	46	139	147	178	360	71	30
Arrive On Green	0.01	0.39	0.39	0.04	0.42	0.42	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1616	1666	26	1691	1649	107	181	689	833	1023	332	140
Grp Volume(v), veh/h	4	0	521	32	0	540	45	0	0	246	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1703	0	0	1495	0	0
Q Serve(g_s), s	0.1	0.0	11.8	0.8	0.0	11.2	0.0	0.0	0.0	5.8	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	11.8	0.8	0.0	11.2	0.9	0.0	0.0	6.7	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	9	0	665	62	0	746	464	0	0	460	0	0
V/C Ratio(X)	0.46	0.00	0.78	0.51	0.00	0.72	0.10	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	185	0	2675	193	0	2777	857	0	0	823	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.7	0.0	11.6	20.7	0.0	10.5	13.9	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	32.9	0.0	2.1	6.4	0.0	1.4	0.1	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.7	0.5	0.0	5.5	0.4	0.0	0.0	2.9	0.0	0.0
LnGrp Delay(d),s/veh	54.6	0.0	13.7	27.1	0.0	11.8	14.0	0.0	0.0	17.1	0.0	0.0
LnGrp LOS	D		B	C		B	B			B		
Approach Vol, veh/h		525			572			45			246	
Approach Delay, s/veh		14.0			12.7			14.0			17.1	
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		15.1	5.6	23.0		15.1	4.2	24.4				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		20.2	5.0	69.2		20.2	5.0	69.2				
Max Q Clear Time (g_c+1), s		2.9	2.8	13.8		8.7	2.1	13.2				
Green Ext Time (p_c), s		0.1	0.0	3.4		0.9	0.0	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay				14.0								
HCM 2010 LOS				B								

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	197	700	487	0	3	217
Future Vol, veh/h	197	700	487	0	3	217
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	5	5	2	2
Mvmt Flow	214	761	529	0	3	236























Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	529	0	-	0	1718 529
Stage 1	-	-	-	-	529 -
Stage 2	-	-	-	-	1189 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	994	-	-	-	99 550
Stage 1	-	-	-	-	591 -
Stage 2	-	-	-	-	289 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	994	-	-	-	78 550
Mov Cap-2 Maneuver	-	-	-	-	78 -
Stage 1	-	-	-	-	464 -
Stage 2	-	-	-	-	289 -

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	994	-	-	-	78	550
HCM Lane V/C Ratio	0.215	-	-	-	0.042	0.429
HCM Control Delay (s)	9.6	-	-	-	53.2	16.4
HCM Lane LOS	A	-	-	-	F	C
HCM 95th %tile Q(veh)	0.8	-	-	-	0.1	2.1

HCM Signalized Intersection Capacity Analysis
 1: I-5 SB Ramps & Sperry Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 					 	 	
Traffic Volume (vph)	0	125	4	234	706	0	0	0	0	338	1	183
Future Volume (vph)	0	125	4	234	706	0	0	0	0	338	1	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		1.00		1.00	1.00					1.00	0.89	
Flt Protected		1.00		0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3538		1429	1539					1429	1346	
Flt Permitted		1.00		0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3538		1429	1539					1429	1346	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	136	4	254	767	0	0	0	0	367	1	199
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	101	0
Lane Group Flow (vph)	0	138	0	229	792	0	0	0	0	297	169	0
Confl. Peds. (#/hr)						1						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	1%	20%	20%	17%	0%	0%	0%	0%	20%	20%	17%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		12.0		52.0	52.0					21.8	21.8	
Effective Green, g (s)		12.0		52.0	52.0					21.8	21.8	
Actuated g/C Ratio		0.12		0.52	0.52					0.22	0.22	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		424		743	800					311	293	
v/s Ratio Prot		c0.04		0.16	c0.51					c0.21	0.13	
v/s Ratio Perm												
v/c Ratio		0.33		0.31	0.99					0.95	0.58	
Uniform Delay, d1		40.3		13.7	23.7					38.6	35.0	
Progression Factor		1.00		0.13	0.58					1.00	1.00	
Incremental Delay, d2		0.5		0.2	23.8					40.8	8.0	
Delay (s)		40.7		1.9	37.5					79.4	43.0	
Level of Service		D		A	D					E	D	
Approach Delay (s)		40.7			29.5			0.0			62.1	
Approach LOS		D			C			A			E	
Intersection Summary												
HCM 2000 Control Delay			41.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			14.2			
Intersection Capacity Utilization			74.0%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗		↕	↗↗			
Traffic Volume (vph)	60	403	0	0	917	545	23	7	90	0	0	0
Future Volume (vph)	60	403	0	0	917	545	23	7	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.99			1.00	1.00		0.96	1.00			
Satd. Flow (prot)		3148			3008	1468		1831	2450			
Flt Permitted		0.99			1.00	1.00		0.96	1.00			
Satd. Flow (perm)		3148			3008	1468		1831	2450			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	438	0	0	997	592	25	8	98	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	133	0	0	51	0	0	0
Lane Group Flow (vph)	0	503	0	0	997	459	0	33	47	0	0	0
Heavy Vehicles (%)	0%	16%	0%	0%	20%	10%	0%	0%	16%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2!	4	4	6			
Permitted Phases						6			4			
Actuated Green, G (s)		36.8			40.7	77.5		7.2	47.9			
Effective Green, g (s)		36.8			40.7	77.5		7.2	47.9			
Actuated g/C Ratio		0.37			0.41	0.78		0.07	0.48			
Clearance Time (s)		5.1			5.1	5.1		5.1	5.1			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		1158			1224	1212		131	1298			
v/s Ratio Prot		c0.16			c0.33	0.14		c0.02	0.01			
v/s Ratio Perm						0.17			0.00			
v/c Ratio		0.43			0.81	0.38		0.25	0.04			
Uniform Delay, d1		23.8			26.3	3.6		43.9	13.8			
Progression Factor		0.14			0.66	0.01		1.00	1.00			
Incremental Delay, d2		0.8			3.5	0.2		1.0	0.0			
Delay (s)		4.0			20.8	0.2		44.9	13.8			
Level of Service		A			C	A		D	B			
Approach Delay (s)		4.0			13.1			21.6			0.0	
Approach LOS		A			B			C			A	

Intersection Summary





























HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Sperry Ave & Rogers Rd

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	 			 						 		
Traffic Volume (vph)	106	173	214	76	1029	150	188	3	60	90	0	245	
Future Volume (vph)	106	173	214	76	1029	150	188	3	60	90	0	245	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3213	3008	1583	1770	3139	1547	1770	1863	1583	1649	1377	1421	
Flt Permitted	0.95	1.00	1.00	0.63	1.00	1.00	0.62	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3213	3008	1583	1180	3139	1547	1153	1863	1583	1649	1377	1421	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	115	188	233	83	1118	163	204	3	65	98	0	266	
RTOR Reduction (vph)	0	0	76	0	0	76	0	0	51	0	102	110	
Lane Group Flow (vph)	115	188	157	83	1118	87	204	3	14	88	36	28	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	9%	20%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%	
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Split	NA	Prot	
Protected Phases	5	2			6			8!		4!	4	4	
Permitted Phases			2	6		6	8		8				
Actuated Green, G (s)	7.6	67.5	67.5	53.4	53.4	53.4	21.5	21.5	21.5	20.0	20.0	20.0	
Effective Green, g (s)	7.6	67.5	67.5	53.4	53.4	53.4	21.5	21.5	21.5	20.0	20.0	20.0	
Actuated g/C Ratio	0.08	0.68	0.68	0.53	0.53	0.53	0.22	0.22	0.22	0.20	0.20	0.20	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	244	2030	1068	630	1676	826	247	400	340	329	275	284	
v/s Ratio Prot	c0.04	0.06			c0.36			0.00		0.05	0.03	0.02	
v/s Ratio Perm			0.10	0.07		0.06	c0.18		0.01				
v/c Ratio	0.47	0.09	0.15	0.13	0.67	0.11	0.83	0.01	0.04	0.27	0.13	0.10	
Uniform Delay, d1	44.3	5.6	5.9	11.7	16.9	11.5	37.5	30.9	31.1	33.8	32.9	32.6	
Progression Factor	0.87	0.17	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.1	0.3	0.4	2.1	0.3	19.7	0.0	0.0	0.4	0.2	0.2	
Delay (s)	39.9	1.1	0.3	12.1	19.0	11.8	57.1	30.9	31.1	34.2	33.1	32.8	
Level of Service	D	A	A	B	B	B	E	C	C	C	C	C	
Approach Delay (s)		9.0			17.7			50.6			33.2		
Approach LOS		A			B			D			C		
Intersection Summary													
HCM 2000 Control Delay			21.6		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			100.0		Sum of lost time (s)					19.0			
Intersection Capacity Utilization			65.1%		ICU Level of Service					C			
Analysis Period (min)			15										
! Phase conflict between lane groups.													
c Critical Lane Group													

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↔		↔	↑↑	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	66	532	0	7	545	15	60	7	25	24	11	292
Future Volume (veh/h)	66	532	0	7	545	15	60	7	25	24	11	292
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1583	1743	1900	1900	1827	1583	1900	1900	1900	1583	1593	1900
Adj Flow Rate, veh/h	72	578	0	8	592	16	65	8	27	26	12	317
Adj No. of Lanes	2	2	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	219	1269	0	23	1114	426	250	122	413	495	16	420
Arrive On Green	0.07	0.38	0.00	0.01	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	2925	3399	0	1810	3471	1329	1068	382	1290	1163	50	1312
Grp Volume(v), veh/h	72	578	0	8	592	16	65	0	35	26	0	329
Grp Sat Flow(s),veh/h/ln	1463	1656	0	1810	1736	1329	1068	0	1672	1163	0	1362
Q Serve(g_s), s	1.2	6.8	0.0	0.2	7.2	0.4	3.0	0.0	0.8	0.8	0.0	11.2
Cycle Q Clear(g_c), s	1.2	6.8	0.0	0.2	7.2	0.4	14.2	0.0	0.8	1.6	0.0	11.2
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.77	1.00		0.96
Lane Grp Cap(c), veh/h	219	1269	0	23	1114	426	250	0	536	495	0	436
V/C Ratio(X)	0.33	0.46	0.00	0.35	0.53	0.04	0.26	0.00	0.07	0.05	0.00	0.75
Avail Cap(c_a), veh/h	367	2354	0	210	2434	932	681	0	1211	964	0	986
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.7	11.9	0.0	25.3	14.4	12.1	22.1	0.0	12.2	12.8	0.0	15.8
Incr Delay (d2), s/veh	0.9	0.5	0.0	9.0	0.8	0.1	0.5	0.0	0.1	0.0	0.0	2.7
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	0.5	3.1	0.0	0.2	3.6	0.2	0.9	0.0	0.3	0.3	0.0	4.5
LnGrp Delay(d),s/veh	23.6	12.5	0.0	34.3	15.2	12.2	22.7	0.0	12.3	12.8	0.0	18.4
LnGrp LOS	C	B		C	B	B	C		B	B		B
Approach Vol, veh/h		650			616			100			355	
Approach Delay, s/veh		13.7			15.4			19.0			18.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	25.5		21.1	8.4	22.3		21.1				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	36.8	36.8		37.5	6.5	36.3		37.5				
Max Q Clear Time (g_c+I), s	11.2	8.8		13.2	3.2	9.2		16.2				
Green Ext Time (p_c), s	0.0	7.2		2.2	0.0	7.4		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				15.5								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	533	45	10	572	83	85	212	20	121	93	93
Future Volume (veh/h)	32	533	45	10	572	83	85	212	20	121	93	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1832	1900	1900	1792	1863	1900	1810	1900	1827	1900	1863
Adj Flow Rate, veh/h	35	579	49	11	622	90	92	230	22	132	101	101
Adj No. of Lanes	1	2	0	1	1	1	2	1	0	1	1	1
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, %	6	4	4	0	6	2	0	5	5	4	0	2
Cap, veh/h	73	1399	118	30	726	641	256	299	29	166	391	326
Arrive On Green	0.04	0.43	0.43	0.02	0.41	0.41	0.07	0.18	0.18	0.10	0.21	0.21
Sat Flow, veh/h	1707	3244	274	1810	1792	1583	3510	1626	156	1740	1900	1583
Grp Volume(v), veh/h	35	310	318	11	622	90	92	0	252	132	101	101
Grp Sat Flow(s),veh/h/ln	1707	1741	1777	1810	1792	1583	1755	0	1782	1740	1900	1583
Q Serve(g_s), s	1.4	8.3	8.4	0.4	21.4	2.4	1.7	0.0	9.1	5.0	3.0	3.7
Cycle Q Clear(g_c), s	1.4	8.3	8.4	0.4	21.4	2.4	1.7	0.0	9.1	5.0	3.0	3.7
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	73	751	766	30	726	641	256	0	327	166	391	326
V/C Ratio(X)	0.48	0.41	0.41	0.37	0.86	0.14	0.36	0.00	0.77	0.80	0.26	0.31
Avail Cap(c_a), veh/h	151	798	814	160	821	725	311	0	711	193	800	667
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	13.3	13.3	32.9	18.3	12.7	29.9	0.0	26.3	30.0	22.5	22.8
Incr Delay (d2), s/veh	1.8	0.8	0.8	15.3	9.5	0.2	0.3	0.0	3.8	15.3	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	4.1	4.2	0.3	12.5	1.1	0.8	0.0	4.8	3.1	1.6	1.6
LnGrp Delay(d),s/veh	33.5	14.1	14.1	48.2	27.9	12.9	30.2	0.0	30.1	45.3	22.9	23.3
LnGrp LOS	C	B	B	D	C	B	C		C	D	C	C
Approach Vol, veh/h		663			723			344			334	
Approach Delay, s/veh		15.1			26.3			30.1			31.9	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	34.7	9.1	18.5	7.1	32.9	10.6	17.0				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	31.0	* 6	28.5	* 6	31.0	* 7.5	27.0				
Max Q Clear Time (g_c+1), s	12.4	10.4	3.7	5.7	3.4	23.4	7.0	11.1				
Green Ext Time (p_c), s	0.0	6.4	0.0	0.8	0.0	4.0	0.0	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				24.3								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	79	666	32	36	480	50	41	94	57	80	81	105
Future Volume (veh/h)	79	666	32	36	480	50	41	94	57	80	81	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	86	724	35	39	522	54	45	102	62	87	88	114
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	184	1093	53	89	854	88	286	239	145	321	165	213
Arrive On Green	0.10	0.32	0.32	0.05	0.27	0.27	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1810	3395	164	1757	3151	325	1170	1087	661	1222	749	970
Grp Volume(v), veh/h	86	373	386	39	285	291	45	0	164	87	0	202
Grp Sat Flow(s),veh/h/ln	1810	1750	1808	1757	1722	1754	1170	0	1748	1222	0	1719
Q Serve(g_s), s	2.1	8.8	8.8	1.0	6.9	7.0	1.7	0.0	3.9	3.2	0.0	5.0
Cycle Q Clear(g_c), s	2.1	8.8	8.8	1.0	6.9	7.0	6.7	0.0	3.9	7.0	0.0	5.0
Prop In Lane	1.00		0.09	1.00		0.19	1.00		0.38	1.00		0.56
Lane Grp Cap(c), veh/h	184	564	582	89	467	476	286	0	384	321	0	378
V/C Ratio(X)	0.47	0.66	0.66	0.44	0.61	0.61	0.16	0.00	0.43	0.27	0.00	0.53
Avail Cap(c_a), veh/h	246	822	850	220	791	806	567	0	803	613	0	790
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	14.0	14.0	22.1	15.2	15.2	19.5	0.0	16.1	19.1	0.0	16.5
Incr Delay (d2), s/veh	1.8	1.9	1.8	3.4	1.8	1.8	0.3	0.0	0.8	0.5	0.0	1.2
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	1.2	4.5	4.7	0.6	3.5	3.6	0.6	0.0	1.9	1.1	0.0	2.5
LnGrp Delay(d),s/veh	22.1	15.9	15.8	25.4	17.1	17.1	19.7	0.0	16.8	19.5	0.0	17.7
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		845			615			209			289	
Approach Delay, s/veh		16.5			17.6			17.4			18.2	
Approach LOS		B			B			B			B	
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	21.9		17.0	11.4	19.5		17.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.5	22.5		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1), s	10.8	10.8		9.0	4.1	9.0		8.7				
Green Ext Time (p_c), s	0.0	4.6		1.2	0.0	3.8		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay				17.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↗	↖	↗	↖
Traffic Volume (veh/h)	109	486	17	81	301	76	31	153	159	118	97	31
Future Volume (veh/h)	109	486	17	81	301	76	31	153	159	118	97	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1818	1900	1792	1830	1900	1900	1827	1827	1900	1863	1776
Adj Flow Rate, veh/h	118	528	18	88	327	83	34	166	173	128	105	34
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
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, %	0	4	4	6	4	4	0	4	4	0	2	7
Cap, veh/h	173	976	33	143	702	175	436	505	429	357	515	410
Arrive On Green	0.10	0.29	0.29	0.08	0.26	0.26	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	3406	116	1707	2750	687	1264	1827	1551	1057	1863	1482
Grp Volume(v), veh/h	118	267	279	88	205	205	34	166	173	128	105	34
Grp Sat Flow(s),veh/h/ln	1810	1727	1795	1707	1739	1698	1264	1827	1551	1057	1863	1482
Q Serve(g_s), s	3.2	6.7	6.7	2.5	5.1	5.2	1.1	3.7	4.6	5.6	2.2	0.9
Cycle Q Clear(g_c), s	3.2	6.7	6.7	2.5	5.1	5.2	3.3	3.7	4.6	9.3	2.2	0.9
Prop In Lane	1.00		0.06	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	495	515	143	444	434	436	505	429	357	515	410
V/C Ratio(X)	0.68	0.54	0.54	0.61	0.46	0.47	0.08	0.33	0.40	0.36	0.20	0.08
Avail Cap(c_a), veh/h	355	1118	1162	335	1092	1066	930	1218	1035	770	1242	988
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	22.3	15.3	15.4	22.6	16.0	16.1	15.4	14.7	15.0	18.4	14.1	13.7
Incr Delay (d2), s/veh	4.7	2.0	1.9	4.2	1.6	1.7	0.2	0.8	1.3	1.3	0.4	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	1.8	3.4	3.5	1.4	2.6	2.7	0.4	2.0	2.1	1.8	1.2	0.4
LnGrp Delay(d),s/veh	27.0	17.3	17.2	26.8	17.6	17.8	15.6	15.5	16.3	19.7	14.6	13.8
LnGrp LOS	C	B	B	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		664			498			373			267	
Approach Delay, s/veh		19.0			19.3			15.9			16.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	20.6		20.1	11.9	19.0		20.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	33.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+I), s	11.5	8.7		11.3	5.2	7.2		6.6				
Green Ext Time (p_c), s	0.1	5.9		2.4	0.1	4.3		3.5				
Intersection Summary												
HCM 2010 Ctrl Delay			18.1									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave






















2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	243	25	6	189	14	67	100	19	4	44	129
Future Volume (veh/h)	179	243	25	6	189	14	67	100	19	4	44	129
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	0.99		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	195	264	27	7	205	15	73	109	21	4	48	140
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	659	1357	138	667	754	690	274	254	41	131	103	287
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1154	3165	321	1103	1759	1609	432	1060	172	13	431	1197
Grp Volume(v), veh/h	195	143	148	7	205	15	203	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	1154	1727	1760	1103	1759	1609	1664	0	0	1641	0	0
Q Serve(g_s), s	3.8	1.5	1.5	0.1	2.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.9	1.5	1.5	1.6	2.2	0.2	2.7	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.18	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	659	740	755	667	754	690	570	0	0	521	0	0
V/C Ratio(X)	0.30	0.19	0.20	0.01	0.27	0.02	0.36	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	1187	1531	1560	1172	1560	1427	1546	0	0	1560	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	5.1	5.1	5.6	5.3	4.7	9.3	0.0	0.0	9.4	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.0	0.4	0.0	0.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.7	0.8	0.0	1.1	0.1	1.4	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	7.7	5.4	5.4	5.6	5.7	4.7	9.7	0.0	0.0	9.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A			A		
Approach Vol, veh/h		486			227			203			192	
Approach Delay, s/veh		6.3			5.6			9.7			9.8	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.9		11.8		16.9		11.8				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		25.4		25.1		25.4		25.1				
Max Q Clear Time (g_c+1), s		7.9		4.7		4.2		4.9				
Green Ext Time (p_c), s		4.2		1.2		2.1		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				7.4								
HCM 2010 LOS				A								

HCM Signalized Intersection Capacity Analysis
9: SR-33 & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	124	47	23	84	32	89	277	37	32	293	263
Future Volume (vph)	106	124	47	23	84	32	89	277	37	32	293	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1641	1770		1583	1662		1736	1749		1805	1696	1468
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1641	1770		1583	1662		1736	1749		1805	1696	1468
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	135	51	25	91	35	97	301	40	35	318	286
RTOR Reduction (vph)	0	22	0	0	20	0	0	6	0	0	0	181
Lane Group Flow (vph)	115	164	0	25	106	0	97	335	0	35	318	105
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	10%	4%	0%	14%	9%	8%	4%	6%	12%	0%	12%	10%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	11.0	11.0		4.7	4.7		3.7	24.5		1.8	22.6	22.6
Effective Green, g (s)	11.0	11.0		4.7	4.7		3.7	24.5		1.8	22.6	22.6
Actuated g/C Ratio	0.18	0.18		0.08	0.08		0.06	0.40		0.03	0.37	0.37
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	293	316		120	127		104	696		52	623	539
v/s Ratio Prot	0.07	c0.09		0.02	c0.06		c0.06	c0.19		0.02	0.19	
v/s Ratio Perm												0.07
v/c Ratio	0.39	0.52		0.21	0.83		0.93	0.48		0.67	0.51	0.19
Uniform Delay, d1	22.3	22.9		26.7	28.0		28.8	13.8		29.6	15.1	13.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	1.4		0.9	35.0		66.6	2.4		29.2	3.0	0.8
Delay (s)	23.2	24.3		27.5	63.0		95.4	16.1		58.8	18.1	14.1
Level of Service	C	C		C	E		F	B		E	B	B
Approach Delay (s)		23.9			57.1			33.7			18.5	
Approach LOS		C			E			C			B	
Intersection Summary												
HCM 2000 Control Delay			27.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			61.5				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			51.6%				ICU Level of Service			A		
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖↗	↖		↖	↑	↗	↖	↖↗	
Traffic Volume (veh/h)	30	173	69	165	147	22	56	141	102	64	493	84
Future Volume (veh/h)	30	173	69	165	147	22	56	141	102	64	493	84
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1667	1597	1597	1900
Adj Flow Rate, veh/h	33	188	75	179	160	24	61	153	111	70	536	91
Adj No. of Lanes	1	1	0	2	1	0	1	1	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, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	78	220	88	504	443	66	288	401	548	113	641	108
Arrive On Green	0.04	0.17	0.17	0.15	0.28	0.28	0.07	0.24	0.24	0.07	0.25	0.25
Sat Flow, veh/h	1774	1268	506	3442	1583	238	1587	1667	1417	1521	2597	439
Grp Volume(v), veh/h	33	0	263	179	0	184	61	153	111	70	312	315
Grp Sat Flow(s),veh/h/ln	1774	0	1773	1721	0	1821	1587	1667	1417	1521	1517	1519
Q Serve(g_s), s	0.9	0.0	7.2	2.3	0.0	4.1	1.4	3.8	0.7	2.2	9.8	9.9
Cycle Q Clear(g_c), s	0.9	0.0	7.2	2.3	0.0	4.1	1.4	3.8	0.7	2.2	9.8	9.9
Prop In Lane	1.00		0.29	1.00		0.13	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	78	0	308	504	0	509	288	401	548	113	374	375
V/C Ratio(X)	0.42	0.00	0.85	0.36	0.00	0.36	0.21	0.38	0.20	0.62	0.83	0.84
Avail Cap(c_a), veh/h	212	0	308	1990	0	1158	369	632	744	303	696	697
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	23.3	0.0	20.1	19.3	0.0	14.5	13.4	15.9	2.4	22.5	17.9	17.9
Incr Delay (d2), s/veh	1.3	0.0	19.4	0.2	0.0	0.2	0.1	0.2	0.1	2.0	1.9	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	5.2	1.1	0.0	2.1	0.6	1.8	0.5	1.0	4.3	4.3
LnGrp Delay(d),s/veh	24.7	0.0	39.5	19.4	0.0	14.6	13.6	16.1	2.5	24.5	19.8	19.9
LnGrp LOS	C		D	B		B	B	B	A	C	B	B
Approach Vol, veh/h		296			363			325			697	
Approach Delay, s/veh		37.9			17.0			11.0			20.3	
Approach LOS		D			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	12.9	7.7	17.0	6.2	19.2	7.4	17.3				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 8.7	10.0	19.0	6.0	* 32	6.0	23.0				
Max Q Clear Time (g_c+14), s	14.3	9.2	4.2	5.8	2.9	6.1	3.4	11.9				
Green Ext Time (p_c), s	0.1	0.0	0.0	0.1	0.0	0.4	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			20.9									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	279	6	196	400	145	2	275	301	133	225	3
Future Volume (veh/h)	24	279	6	196	400	145	2	275	301	133	225	3
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.97	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	1777	1900	1845	1743	1900	1827	1881	1583	1743	1881	1900
Adj Flow Rate, veh/h	26	303	7	213	435	158	2	299	327	145	245	3
Adj No. of Lanes	1	1	0	1	1	1	1	1	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	7	7	3	9	0	4	1	20	9	1	1
Cap, veh/h	265	429	10	412	580	524	395	512	366	677	640	8
Arrive On Green	0.03	0.25	0.25	0.11	0.33	0.33	0.00	0.27	0.27	0.08	0.35	0.35
Sat Flow, veh/h	1810	1729	40	1757	1743	1573	1740	1881	1344	3221	1853	23
Grp Volume(v), veh/h	26	0	310	213	435	158	2	299	327	145	0	248
Grp Sat Flow(s),veh/h/ln	1810	0	1769	1757	1743	1573	1740	1881	1344	1610	0	1876
Q Serve(g_s), s	0.6	0.0	9.6	5.0	13.4	4.5	0.1	8.3	14.1	1.8	0.0	6.0
Cycle Q Clear(g_c), s	0.6	0.0	9.6	5.0	13.4	4.5	0.1	8.3	14.1	1.8	0.0	6.0
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	265	0	439	412	580	524	395	512	366	677	0	647
V/C Ratio(X)	0.10	0.00	0.71	0.52	0.75	0.30	0.01	0.58	0.89	0.21	0.00	0.38
Avail Cap(c_a), veh/h	377	0	830	751	1193	1077	621	783	559	732	0	706
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	20.7	14.0	17.9	14.9	15.9	19.0	21.1	13.1	0.0	14.9
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.4	0.7	0.1	0.0	0.4	8.3	0.1	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	0.3	0.0	4.7	2.4	6.5	2.0	0.0	4.4	6.0	0.8	0.0	3.1
LnGrp Delay(d),s/veh	16.6	0.0	21.5	14.3	18.6	15.0	15.9	19.4	29.4	13.1	0.0	15.0
LnGrp LOS	B		C	B	B	B	B	B	C	B		B
Approach Vol, veh/h		336			806			628			393	
Approach Delay, s/veh		21.1			16.8			24.6			14.3	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	24.7	8.6	21.3	10.9	19.6	4.2	25.7				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	41.3	5.6	25.1	18.5	28.3	8.0	22.7				
Max Q Clear Time (g_c+1), s	12.6	15.4	3.8	16.1	7.0	11.6	2.1	8.0				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.2	0.0	0.3	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			19.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (veh/h)	14	37	26	15	53	138	25	225	7	101	482	10
Future Volume (veh/h)	14	37	26	15	53	138	25	225	7	101	482	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	15	40	28	16	58	150	27	245	8	110	524	11
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	138	192	113	110	95	215	52	558	18	136	630	13
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.03	0.35	0.35	0.09	0.40	0.40
Sat Flow, veh/h	151	984	578	59	484	1101	1587	1605	52	1521	1558	33
Grp Volume(v), veh/h	83	0	0	224	0	0	27	0	253	110	0	535
Grp Sat Flow(s),veh/h/ln	1714	0	0	1645	0	0	1587	0	1657	1521	0	1591
Q Serve(g_s), s	0.0	0.0	0.0	1.2	0.0	0.0	0.7	0.0	4.6	2.8	0.0	11.8
Cycle Q Clear(g_c), s	1.6	0.0	0.0	4.9	0.0	0.0	0.7	0.0	4.6	2.8	0.0	11.8
Prop In Lane	0.18		0.34	0.07		0.67	1.00		0.03	1.00		0.02
Lane Grp Cap(c), veh/h	443	0	0	420	0	0	52	0	576	136	0	643
V/C Ratio(X)	0.19	0.00	0.00	0.53	0.00	0.00	0.52	0.00	0.44	0.81	0.00	0.83
Avail Cap(c_a), veh/h	866	0	0	849	0	0	223	0	855	287	0	898
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	14.6	0.0	0.0	18.6	0.0	9.8	17.5	0.0	10.5
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.1	0.0	0.0	8.0	0.0	0.5	11.0	0.0	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	2.4	0.0	0.0	0.4	0.0	2.2	1.6	0.0	5.9
LnGrp Delay(d),s/veh	13.5	0.0	0.0	15.7	0.0	0.0	26.6	0.0	10.4	28.5	0.0	15.2
LnGrp LOS	B			B			C		B	C		B
Approach Vol, veh/h		83			224			280			645	
Approach Delay, s/veh		13.5			15.7			11.9			17.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	19.4		12.2	5.3	21.6		12.2				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	7.5	20.2		18.0	5.5	22.1		18.0				
Max Q Clear Time (g_c+1), s	14.8	6.6		3.6	2.7	13.8		6.9				
Green Ext Time (p_c), s	0.1	1.0		0.3	0.0	2.0		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				15.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	23	29	8	55	5	21	1	5	2	1	0
Future Volume (veh/h)	2	23	29	8	55	5	21	1	5	2	1	0
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		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1583	1583	1739	1900	1583	1629	1900	1900	1781	1900
Adj Flow Rate, veh/h	2	25	32	9	60	5	23	1	5	2	1	0
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	20	20	10	10	20	0	0	20	20	20
Cap, veh/h	7	549	438	18	472	39	127	10	51	6	3	0
Arrive On Green	0.00	0.29	0.29	0.01	0.30	0.30	0.04	0.04	0.04	0.00	0.00	0.00
Sat Flow, veh/h	1810	1900	1314	1508	1581	132	2925	236	1181	1149	575	0
Grp Volume(v), veh/h	2	25	32	9	0	65	23	0	6	3	0	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1314	1508	0	1713	1463	0	1417	1724	0	0
Q Serve(g_s), s	0.0	0.3	0.5	0.2	0.0	0.8	0.2	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.3	0.5	0.2	0.0	0.8	0.2	0.0	0.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.83	0.67		0.00
Lane Grp Cap(c), veh/h	7	549	438	18	0	511	127	0	61	9	0	0
V/C Ratio(X)	0.31	0.05	0.07	0.49	0.00	0.13	0.18	0.00	0.10	0.35	0.00	0.00
Avail Cap(c_a), veh/h	327	549	438	300	0	526	793	0	384	374	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.8	7.1	6.3	13.6	0.0	7.1	12.8	0.0	12.7	13.7	0.0	0.0
Incr Delay (d2), s/veh	24.3	0.0	0.1	19.2	0.0	0.1	0.7	0.0	0.7	23.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.2	0.0	0.4	0.1	0.0	0.1	0.1	0.0	0.0
LnGrp Delay(d),s/veh	38.1	7.1	6.4	32.8	0.0	7.2	13.4	0.0	13.4	36.7	0.0	0.0
LnGrp LOS	D	A	A	C		A	B		B	D		
Approach Vol, veh/h		59			74			29			3	
Approach Delay, s/veh		7.8			10.3			13.4			36.7	
Approach LOS		A			B			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		5.7	4.8	12.5		4.6	4.6	12.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		7.5	5.5	8.0		6.0	5.0	8.5				
Max Q Clear Time (g_c+I1), s		2.2	2.2	2.5		2.0	2.0	2.8				
Green Ext Time (p_c), s		0.0	0.0	0.1		0.0	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			10.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	35	43	16	14	14	19	47	28	32	37	7
Future Volume (veh/h)	23	35	43	16	14	14	19	47	28	32	37	7
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	1583	1776	1900	1900	1863	1583	1743	1795	1900
Adj Flow Rate, veh/h	25	38	47	17	15	15	21	51	30	35	40	8
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	20	0	0	0	2	20	9	7	7
Cap, veh/h	55	134	165	64	136	136	48	828	344	133	362	72
Arrive On Green	0.03	0.18	0.18	0.02	0.17	0.17	0.03	0.23	0.23	0.04	0.25	0.25
Sat Flow, veh/h	1774	759	938	2925	816	816	1810	3539	1346	3221	1453	291
Grp Volume(v), veh/h	25	0	85	17	0	30	21	51	30	35	0	48
Grp Sat Flow(s),veh/h/ln	1774	0	1697	1463	0	1632	1810	1770	1346	1610	0	1744
Q Serve(g_s), s	0.5	0.0	1.5	0.2	0.0	0.5	0.4	0.4	0.6	0.4	0.0	0.7
Cycle Q Clear(g_c), s	0.5	0.0	1.5	0.2	0.0	0.5	0.4	0.4	0.6	0.4	0.0	0.7
Prop In Lane	1.00		0.55	1.00		0.50	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	55	0	299	64	0	273	48	828	344	133	0	434
V/C Ratio(X)	0.46	0.00	0.28	0.27	0.00	0.11	0.44	0.06	0.09	0.26	0.00	0.11
Avail Cap(c_a), veh/h	259	0	963	428	0	912	265	2371	931	471	0	1194
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	12.2	16.5	0.0	12.1	16.4	10.2	9.7	15.9	0.0	9.9
Incr Delay (d2), s/veh	5.8	0.0	0.5	2.2	0.0	0.2	6.2	0.0	0.1	1.0	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	0.3	0.0	0.7	0.1	0.0	0.3	0.3	0.2	0.2	0.2	0.0	0.4
LnGrp Delay(d),s/veh	22.1	0.0	12.7	18.7	0.0	12.3	22.6	10.2	9.8	16.9	0.0	10.0
LnGrp LOS	C		B	B		B	C	B	A	B		B
Approach Vol, veh/h		110			47			102			83	
Approach Delay, s/veh		14.9			14.6			12.6			12.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	13.1	4.7	10.9	4.9	13.6	5.1	10.6				
Change Period (Y+Rc), s	4.0	5.1	4.0	* 4.9	4.0	* 5.1	4.0	4.9				
Max Green Setting (Gmax), s	5.0	22.9	5.0	* 19	5.0	* 23	5.0	19.1				
Max Q Clear Time (g_c+1), s	12.4	2.6	2.2	3.5	2.4	2.7	2.5	2.5				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.3	0.0	0.2	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			13.7									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	37	1	10	3	10	0	46	18	16	87	7
Future Volume (veh/h)	15	37	1	10	3	10	0	46	18	16	87	7
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	1810	1810	1810	1863	1863	1863	1597	1597	1597	1638	1638	1900
Adj Flow Rate, veh/h	16	40	1	11	3	11	0	50	20	17	95	8
Adj No. of Lanes	1	2	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, %	5	5	5	2	2	2	19	19	19	16	16	16
Cap, veh/h	127	253	113	128	69	93	4	716	320	34	1094	91
Arrive On Green	0.07	0.07	0.07	0.04	0.04	0.04	0.00	0.24	0.24	0.02	0.38	0.38
Sat Flow, veh/h	1723	3438	1538	3442	1863	1583	1521	3034	1357	1560	2909	242
Grp Volume(v), veh/h	16	40	1	11	3	11	0	50	20	17	50	53
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1721	1863	1583	1521	1517	1357	1560	1556	1595
Q Serve(g_s), s	0.3	0.4	0.0	0.1	0.1	0.2	0.0	0.4	0.4	0.4	0.7	0.7
Cycle Q Clear(g_c), s	0.3	0.4	0.0	0.1	0.1	0.2	0.0	0.4	0.4	0.4	0.7	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	127	253	113	128	69	93	4	716	320	34	585	600
V/C Ratio(X)	0.13	0.16	0.01	0.09	0.04	0.12	0.00	0.07	0.06	0.50	0.09	0.09
Avail Cap(c_a), veh/h	315	629	281	630	341	324	247	913	408	276	585	600
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	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	14.7	14.6	15.8	15.7	15.1	0.0	10.1	10.0	16.4	6.8	6.8
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.3	0.3	0.6	0.0	0.0	0.1	10.9	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	0.2	0.2	0.0	0.1	0.0	0.1	0.0	0.2	0.2	0.3	0.3	0.3
LnGrp Delay(d),s/veh	15.1	15.0	14.6	16.0	16.0	15.7	0.0	10.1	10.1	27.3	6.9	6.9
LnGrp LOS	B	B	B	B	B	B		B	B	C	A	A
Approach Vol, veh/h		57			25			70			120	
Approach Delay, s/veh		15.0			15.9			10.1			9.8	
Approach LOS		B			B			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	13.8		8.3	0.0	18.5		7.1				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	10.2	10.2		6.2	5.5	10.7		6.2				
Max Q Clear Time (g_c+I), s	12.4	2.4		2.4	0.0	2.7		2.2				
Green Ext Time (p_c), s	0.0	0.1		0.0	0.0	0.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				11.5								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 16: Baldwin Rd & Zacharias Rd

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	20	9	27	39	4	188	87	38	2	43	10
Future Volume (veh/h)	2	20	9	27	39	4	188	87	38	2	43	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1863	1863	1863	1810	1810	1900	1610	1610	1900
Adj Flow Rate, veh/h	2	22	10	29	42	4	204	95	41	2	47	11
Adj No. of Lanes	1	1	1	2	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	5	5	5	18	18	18
Cap, veh/h	80	84	72	381	206	175	260	404	174	4	238	56
Arrive On Green	0.05	0.05	0.05	0.11	0.11	0.11	0.15	0.34	0.34	0.00	0.19	0.19
Sat Flow, veh/h	1723	1810	1538	3442	1863	1583	1723	1200	518	1533	1263	295
Grp Volume(v), veh/h	2	22	10	29	42	4	204	0	136	2	0	58
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1721	1863	1583	1723	0	1718	1533	0	1558
Q Serve(g_s), s	0.0	0.5	0.3	0.3	0.9	0.1	4.8	0.0	2.4	0.1	0.0	1.3
Cycle Q Clear(g_c), s	0.0	0.5	0.3	0.3	0.9	0.1	4.8	0.0	2.4	0.1	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.19
Lane Grp Cap(c), veh/h	80	84	72	381	206	175	260	0	578	4	0	293
V/C Ratio(X)	0.02	0.26	0.14	0.08	0.20	0.02	0.78	0.00	0.24	0.48	0.00	0.20
Avail Cap(c_a), veh/h	243	256	217	648	351	298	446	0	578	198	0	315
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	19.5	19.4	17.0	17.2	16.8	17.4	0.0	10.2	21.2	0.0	14.5
Incr Delay (d2), s/veh	0.1	1.6	0.9	0.1	0.5	0.1	5.2	0.0	0.2	65.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.1	0.2	0.5	0.0	2.6	0.0	1.2	0.1	0.0	0.6
LnGrp Delay(d),s/veh	19.5	21.2	20.3	17.0	17.7	16.9	22.5	0.0	10.4	86.6	0.0	14.9
LnGrp LOS	B	C	C	B	B	B	C		B	F		B
Approach Vol, veh/h		34			75			340			60	
Approach Delay, s/veh		20.8			17.4			17.7			17.3	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	20.1		7.8	10.4	13.8		10.5				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	14.1		6.0	11.0	8.6		8.0				
Max Q Clear Time (g_c+I), s	11.5	4.4		2.5	6.8	3.3		2.9				
Green Ext Time (p_c), s	0.0	0.4		0.0	0.2	0.1		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	49	107	291	543	4		
Future Volume (veh/h)	0	49	107	291	543	4		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1638	1638	1624	1900		
Adj Flow Rate, veh/h	0	53	116	316	590	4		
Adj No. of Lanes	1	2	1	2	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	5	5	16	16	17	17		
Cap, veh/h	124	195	163	1640	892	6		
Arrive On Green	0.00	0.07	0.10	0.53	0.28	0.28		
Sat Flow, veh/h	1723	2707	1560	3194	3223	21		
Grp Volume(v), veh/h	0	53	116	316	290	304		
Grp Sat Flow(s),veh/h/ln	1723	1354	1560	1556	1543	1620		
Q Serve(g_s), s	0.0	0.5	2.1	1.5	4.8	4.8		
Cycle Q Clear(g_c), s	0.0	0.5	2.1	1.5	4.8	4.8		
Prop In Lane	1.00	1.00	1.00			0.01		
Lane Grp Cap(c), veh/h	124	195	163	1640	438	460		
V/C Ratio(X)	0.00	0.27	0.71	0.19	0.66	0.66		
Avail Cap(c_a), veh/h	357	561	367	2410	619	650		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	12.7	12.5	3.6	9.1	9.1		
Incr Delay (d2), s/veh	0.0	0.7	5.6	0.1	1.7	1.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.1	0.7	2.2	2.3		
LnGrp Delay(d),s/veh	0.0	13.5	18.1	3.7	10.8	10.8		
LnGrp LOS		B	B	A	B	B		
Approach Vol, veh/h	53			432	594			
Approach Delay, s/veh	13.5			7.5	10.8			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		21.0		7.9	7.0	14.0		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		22.4		6.0	6.8	11.6		
Max Q Clear Time (g_c+I1), s		3.5		2.5	4.1	6.8		
Green Ext Time (p_c), s		1.7		0.0	0.1	1.4		
Intersection Summary								
HCM 2010 Ctrl Delay			9.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
18: SR-33 & Ward Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	77	7	3	271	490	202		
Future Volume (veh/h)	77	7	3	271	490	202		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1759	1759	1667	1667	1597	1597		
Adj Flow Rate, veh/h	84	8	3	295	533	220		
Adj No. of Lanes	1	1	1	1	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	8	8	14	14	19	19		
Cap, veh/h	247	220	7	753	911	407		
Arrive On Green	0.15	0.15	0.00	0.45	0.30	0.30		
Sat Flow, veh/h	1675	1495	1587	1667	3113	1357		
Grp Volume(v), veh/h	84	8	3	295	533	220		
Grp Sat Flow(s),veh/h/ln	1675	1495	1587	1667	1517	1357		
Q Serve(g_s), s	1.2	0.1	0.1	3.2	4.1	3.7		
Cycle Q Clear(g_c), s	1.2	0.1	0.1	3.2	4.1	3.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	247	220	7	753	911	407		
V/C Ratio(X)	0.34	0.04	0.46	0.39	0.59	0.54		
Avail Cap(c_a), veh/h	493	440	292	1294	1351	604		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.4	9.9	13.5	5.0	8.1	7.9		
Incr Delay (d2), s/veh	0.8	0.1	42.9	0.3	0.6	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.1	1.5	1.7	1.5		
LnGrp Delay(d),s/veh	11.2	10.0	56.4	5.3	8.7	9.1		
LnGrp LOS	B	A	E	A	A	A		
Approach Vol, veh/h	92			298	753			
Approach Delay, s/veh	11.1			5.8	8.8			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		18.1		9.1	4.1	14.0		
Change Period (Y+Rc), s		5.8		5.1	4.0	5.8		
Max Green Setting (Gmax), s		21.1		8.0	5.0	12.1		
Max Q Clear Time (g_c+I1), s		5.2		3.2	2.1	6.1		
Green Ext Time (p_c), s		1.3		0.1	0.0	2.1		
Intersection Summary								
HCM 2010 Ctrl Delay			8.2					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	Y		↑↑		Y	↑↑		
Traffic Volume (veh/h)	72	82	303	15	19	566		
Future Volume (veh/h)	72	82	303	15	19	566		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1583	1900	1638	1900	1624	1624		
Adj Flow Rate, veh/h	78	89	329	16	21	615		
Adj No. of Lanes	0	0	2	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	0	16	16	17	17		
Cap, veh/h	131	150	793	38	41	1297		
Arrive On Green	0.20	0.20	0.26	0.26	0.03	0.42		
Sat Flow, veh/h	658	751	3104	146	1547	3167		
Grp Volume(v), veh/h	168	0	169	176	21	615		
Grp Sat Flow(s),veh/h/ln	1418	0	1556	1612	1547	1543		
Q Serve(g_s), s	3.3	0.0	2.7	2.8	0.4	4.4		
Cycle Q Clear(g_c), s	3.3	0.0	2.7	2.8	0.4	4.4		
Prop In Lane	0.46	0.53		0.09	1.00			
Lane Grp Cap(c), veh/h	282	0	408	423	41	1297		
V/C Ratio(X)	0.59	0.00	0.41	0.42	0.51	0.47		
Avail Cap(c_a), veh/h	428	0	521	539	254	1943		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	11.1	0.0	9.3	9.3	14.6	6.4		
Incr Delay (d2), s/veh	2.0	0.0	0.7	0.7	9.3	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4	0.0	1.2	1.3	0.3	1.8		
LnGrp Delay(d),s/veh	13.1	0.0	10.0	10.0	24.0	6.7		
LnGrp LOS	B		A	A	C	A		
Approach Vol, veh/h	168		345			636		
Approach Delay, s/veh	13.1		10.0			7.2		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	4.8	13.8				18.6		11.9
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	5.0	10.2				19.2		9.2
Max Q Clear Time (g_c+I), s	12.4	4.8				6.4		5.3
Green Ext Time (p_c), s	0.0	0.8				3.1		0.2
Intersection Summary								
HCM 2010 Ctrl Delay			8.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
20: SR-33 & Baldwin Rd

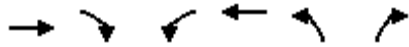
2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	87	2	2	628	459	83		
Future Volume (veh/h)	87	2	2	628	459	83		
Number	5	12	3	8	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1638	1638	1624	1900		
Adj Flow Rate, veh/h	95	2	2	683	499	90		
Adj No. of Lanes	1	1	1	1	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	5	5	16	16	17	17		
Cap, veh/h	243	217	5	850	1043	187		
Arrive On Green	0.14	0.14	0.00	0.52	0.40	0.40		
Sat Flow, veh/h	1723	1538	1560	1638	2696	469		
Grp Volume(v), veh/h	95	2	2	683	293	296		
Grp Sat Flow(s),veh/h/ln	1723	1538	1560	1638	1543	1541		
Q Serve(g_s), s	1.7	0.0	0.0	11.7	4.8	4.9		
Cycle Q Clear(g_c), s	1.7	0.0	0.0	11.7	4.8	4.9		
Prop In Lane	1.00	1.00	1.00			0.30		
Lane Grp Cap(c), veh/h	243	217	5	850	615	615		
V/C Ratio(X)	0.39	0.01	0.44	0.80	0.48	0.48		
Avail Cap(c_a), veh/h	414	370	252	1451	937	936		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.3	12.6	17.0	6.8	7.6	7.6		
Incr Delay (d2), s/veh	1.0	0.0	54.4	1.8	0.6	0.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.1	5.6	2.1	2.2		
LnGrp Delay(d),s/veh	14.3	12.6	71.3	8.6	8.2	8.2		
LnGrp LOS	B	B	E	A	A	A		
Approach Vol, veh/h	97			685	589			
Approach Delay, s/veh	14.3			8.8	8.2			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		10.6	4.1	19.4				23.5
Change Period (Y+Rc), s		5.8	4.0	5.8				5.8
Max Green Setting (Gmax), s		8.2	5.5	20.7				30.2
Max Q Clear Time (g_c+I1), s		3.7	2.0	6.9				13.7
Green Ext Time (p_c), s		0.1	0.0	2.8				4.0
Intersection Summary								
HCM 2010 Ctrl Delay			8.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
 21: Rogers Rd & SR-33

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↵	↑	↵			
Traffic Volume (veh/h)	382	97	6	395	287	40		
Future Volume (veh/h)	382	97	6	395	287	40		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1624	1900	1638	1638	1597	1900		
Adj Flow Rate, veh/h	415	105	7	429	312	43		
Adj No. of Lanes	2	0	1	1	0	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	17	17	16	16	0	0		
Cap, veh/h	593	149	15	607	376	52		
Arrive On Green	0.24	0.24	0.01	0.37	0.29	0.29		
Sat Flow, veh/h	2527	613	1560	1638	1314	181		
Grp Volume(v), veh/h	260	260	7	429	356	0		
Grp Sat Flow(s),veh/h/ln	1543	1516	1560	1638	1499	0		
Q Serve(g_s), s	5.2	5.3	0.2	7.6	7.5	0.0		
Cycle Q Clear(g_c), s	5.2	5.3	0.2	7.6	7.5	0.0		
Prop In Lane		0.40	1.00		0.88	0.12		
Lane Grp Cap(c), veh/h	374	368	15	607	429	0		
V/C Ratio(X)	0.70	0.71	0.48	0.71	0.83	0.00		
Avail Cap(c_a), veh/h	465	457	231	930	630	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	11.7	11.7	16.7	9.1	11.3	0.0		
Incr Delay (d2), s/veh	3.3	3.7	22.1	1.5	6.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	2.5	0.2	3.6	3.8	0.0		
LnGrp Delay(d),s/veh	15.0	15.4	38.7	10.6	17.3	0.0		
LnGrp LOS	B	B	D	B	B			
Approach Vol, veh/h	520			436	356			
Approach Delay, s/veh	15.2			11.1	17.3			
Approach LOS	B			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		15.5	4.3	14.0				18.3
Change Period (Y+Rc), s		5.8	4.0	5.8				5.8
Max Green Setting (Gmax), s		14.2	5.0	10.2				19.2
Max Q Clear Time (g_c+1), s		9.5	2.2	7.3				9.6
Green Ext Time (p_c), s		0.5	0.0	0.9				1.9
Intersection Summary								
HCM 2010 Ctrl Delay			14.4					
HCM 2010 LOS			B					

Intersection												
Intersection Delay, s/veh	13											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	42	30	0	131	7	74	285	0	0	255	21
Future Vol, veh/h	17	42	30	0	131	7	74	285	0	0	255	21
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
Heavy Vehicles, %	20	20	20	20	20	20	2	2	2	2	2	2
Mvmt Flow	18	46	33	0	142	8	80	310	0	0	277	23
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	11.4	14.8	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	19%	0%	0%
Vol Thru, %	79%	47%	95%	92%
Vol Right, %	0%	34%	5%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	359	89	138	276
LT Vol	74	17	0	0
Through Vol	285	42	131	255
RT Vol	0	30	7	21
Lane Flow Rate	390	97	150	300
Geometry Grp	1	1	1	1
Degree of Util (X)	0.564	0.167	0.259	0.437
Departure Headway (Hd)	5.204	6.203	6.205	5.246
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	691	577	578	684
Service Time	3.244	4.261	4.259	3.291
HCM Lane V/C Ratio	0.564	0.168	0.26	0.439
HCM Control Delay	14.8	10.5	11.4	12.3
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	3.5	0.6	1	2.2

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	8	70	1	4	0	108	215	8	1	20	1
Future Vol, veh/h	8	8	70	1	4	0	108	215	8	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	20	20	20	20	20	2	2	2	2	2	2
Mvmt Flow	9	9	76	1	4	0	117	234	9	1	22	1






















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	500	502	23	540	498	239	23	0	0	243	0	0
Stage 1	25	25	-	473	473	-	-	-	-	-	-	-
Stage 2	475	477	-	67	25	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	453	446	1004	426	449	758	1592	-	-	1323	-	-
Stage 1	948	840	-	539	529	-	-	-	-	-	-	-
Stage 2	538	527	-	900	840	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	420	408	1004	362	410	758	1592	-	-	1323	-	-
Mov Cap-2 Maneuver	420	408	-	362	410	-	-	-	-	-	-	-
Stage 1	867	839	-	493	484	-	-	-	-	-	-	-
Stage 2	488	482	-	822	839	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.1		14.1		2.4		0.4	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	794	399	1323	-	-
HCM Lane V/C Ratio	0.074	-	-	0.118	0.014	0.001	-	-
HCM Control Delay (s)	7.4	0	-	10.1	14.1	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0	-	-

HCM 2010 Signalized Intersection Summary
24: Sycamore Ave & Las Palmas Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	528	8	11	403	44	12	120	216	41	27	11
Future Volume (veh/h)	14	528	8	11	403	44	12	120	216	41	27	11
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	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	574	9	12	438	48	13	130	235	45	29	12
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	30	628	10	23	523	57	437	147	265	123	87	36
Arrive On Green	0.02	0.36	0.36	0.01	0.36	0.36	0.25	0.25	0.25	0.07	0.07	0.07
Sat Flow, veh/h	1675	1727	27	1560	1451	159	1774	596	1077	1774	1253	518
Grp Volume(v), veh/h	15	0	583	12	0	486	13	0	365	45	0	41
Grp Sat Flow(s),veh/h/ln	1675	0	1754	1560	0	1610	1774	0	1673	1774	0	1771
Q Serve(g_s), s	0.6	0.0	22.2	0.5	0.0	19.4	0.4	0.0	14.7	1.7	0.0	1.5
Cycle Q Clear(g_c), s	0.6	0.0	22.2	0.5	0.0	19.4	0.4	0.0	14.7	1.7	0.0	1.5
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.64	1.00		0.29
Lane Grp Cap(c), veh/h	30	0	638	23	0	580	437	0	412	123	0	123
V/C Ratio(X)	0.50	0.00	0.91	0.52	0.00	0.84	0.03	0.00	0.89	0.36	0.00	0.33
Avail Cap(c_a), veh/h	120	0	706	111	0	648	489	0	461	154	0	154
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	21.2	34.3	0.0	20.5	20.0	0.0	25.4	31.1	0.0	31.0
Incr Delay (d2), s/veh	12.0	0.0	15.5	16.7	0.0	8.7	0.0	0.0	17.1	1.8	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	13.4	0.3	0.0	9.9	0.2	0.0	8.8	0.9	0.0	0.8
LnGrp Delay(d),s/veh	46.1	0.0	36.7	51.0	0.0	29.2	20.1	0.0	42.6	32.9	0.0	32.6
LnGrp LOS	D		D	D		C	C		D	C		C
Approach Vol, veh/h		598			498			378			86	
Approach Delay, s/veh		37.0			29.7			41.8			32.8	
Approach LOS		D			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.1	5.0	31.3		10.7	5.3	31.1				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		19.3	5.0	28.2		6.1	5.0	28.2				
Max Q Clear Time (g_c+I1), s		16.7	2.5	24.2		3.7	2.6	21.4				
Green Ext Time (p_c), s		0.5	0.0	1.3		0.0	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			35.6									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

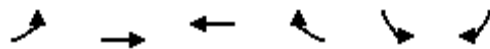
2040 Cumulative No Project (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	440	4	14	472	49	16	16	42	119	12	15
Future Volume (veh/h)	2	440	4	14	472	49	16	16	42	119	12	15
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	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	478	4	15	513	53	17	17	46	129	13	16
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	5	720	6	30	628	65	150	74	144	357	18	22
Arrive On Green	0.00	0.41	0.41	0.02	0.43	0.43	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1675	1742	15	1560	1460	151	221	498	973	1227	124	152
Grp Volume(v), veh/h	2	0	482	15	0	566	80	0	0	158	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1757	1560	0	1611	1693	0	0	1503	0	0
Q Serve(g_s), s	0.0	0.0	8.2	0.4	0.0	11.5	0.0	0.0	0.0	2.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	8.2	0.4	0.0	11.5	1.6	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.21		0.57	0.82		0.10
Lane Grp Cap(c), veh/h	5	0	726	30	0	693	367	0	0	398	0	0
V/C Ratio(X)	0.43	0.00	0.66	0.50	0.00	0.82	0.22	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	225	0	1134	210	0	1040	577	0	0	581	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	0.0	8.8	18.0	0.0	9.3	14.2	0.0	0.0	14.9	0.0	0.0
Incr Delay (d2), s/veh	53.5	0.0	1.0	12.2	0.0	3.2	0.3	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.1	0.3	0.0	5.6	0.8	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	72.0	0.0	9.9	30.2	0.0	12.5	14.5	0.0	0.0	15.6	0.0	0.0
LnGrp LOS	E		A	C		B	B			B		
Approach Vol, veh/h		484			581			80			158	
Approach Delay, s/veh		10.1			12.9			14.5			15.6	
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		11.3	4.7	21.2		11.3	4.1	21.8				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		10.4	5.0	24.0		10.4	5.0	24.0				
Max Q Clear Time (g_c+1), s		3.6	2.4	10.2		5.6	2.0	13.5				
Green Ext Time (p_c), s		0.1	0.0	2.3		0.3	0.0	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay			12.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 26: Las Palmas Ave/W Main Ave & Jennings Rd

2040 Cumulative No Project (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	241	419	352	2	16	728		
Future Volume (veh/h)	241	419	352	2	16	728		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1712	1712	1667	1900	1863	1863		
Adj Flow Rate, veh/h	262	455	383	2	17	791		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	11	11	14	14	2	2		
Cap, veh/h	308	833	396	2	607	841		
Arrive On Green	0.19	0.49	0.24	0.24	0.34	0.34		
Sat Flow, veh/h	1630	1712	1656	9	1774	1583		
Grp Volume(v), veh/h	262	455	0	385	17	791		
Grp Sat Flow(s),veh/h/ln	1630	1712	0	1665	1774	1583		
Q Serve(g_s), s	10.5	12.6	0.0	15.5	0.4	23.2		
Cycle Q Clear(g_c), s	10.5	12.6	0.0	15.5	0.4	23.2		
Prop In Lane	1.00			0.01	1.00	1.00		
Lane Grp Cap(c), veh/h	308	833	0	398	607	841		
V/C Ratio(X)	0.85	0.55	0.00	0.97	0.03	0.94		
Avail Cap(c_a), veh/h	433	964	0	398	607	841		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	26.6	12.2	0.0	25.5	14.8	14.9		
Incr Delay (d2), s/veh	11.0	0.6	0.0	36.6	0.0	18.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.7	6.1	0.0	11.1	0.2	26.0		
LnGrp Delay(d),s/veh	37.6	12.7	0.0	62.1	14.8	33.2		
LnGrp LOS	D	B		E	B	C		
Approach Vol, veh/h		717	385		808			
Approach Delay, s/veh		21.8	62.1		32.8			
Approach LOS		C	E		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				38.8		29.0	16.8	22.0
Change Period (Y+Rc), s				5.8		5.8	4.0	5.8
Max Green Setting (Gmax), s				38.2		23.2	18.0	16.2
Max Q Clear Time (g_c+I1), s				14.6		25.2	12.5	17.5
Green Ext Time (p_c), s				2.6		0.0	0.4	0.0
Intersection Summary								
HCM 2010 Ctrl Delay			34.6					
HCM 2010 LOS			C					

HCM Signalized Intersection Capacity Analysis
1: I-5 SB Ramps & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak
























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↗					↖	↗	
Traffic Volume (vph)	0	111	15	414	148	0	0	0	0	599	20	106
Future Volume (vph)	0	111	15	414	148	0	0	0	0	599	20	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		0.98		1.00	1.00					1.00	0.96	
Flt Protected		1.00		0.95	0.98					0.95	0.97	
Satd. Flow (prot)		3419		1504	1652					1429	1469	
Flt Permitted		1.00		0.95	0.98					0.95	0.97	
Satd. Flow (perm)		3419		1504	1652					1429	1469	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	121	16	450	161	0	0	0	0	651	22	115
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	126	0	301	310	0	0	0	0	404	368	0
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	4%	0%	14%	0%	0%	0%	0%	0%	20%	4%	2%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		12.0		22.5	22.5					41.3	41.3	
Effective Green, g (s)		12.0		22.5	22.5					41.3	41.3	
Actuated g/C Ratio		0.13		0.25	0.25					0.46	0.46	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		455		376	413					655	674	
v/s Ratio Prot		c0.04		c0.20	0.19					c0.28	0.25	
v/s Ratio Perm												
v/c Ratio		0.28		0.80	0.75					0.62	0.55	
Uniform Delay, d1		35.1		31.6	31.2					18.4	17.6	
Progression Factor		1.00		0.08	0.07					1.00	1.00	
Incremental Delay, d2		0.3		9.7	6.2					4.3	3.2	
Delay (s)		35.4		12.2	8.3					22.7	20.8	
Level of Service		D		B	A					C	C	
Approach Delay (s)		35.4			10.2			0.0			21.7	
Approach LOS		D			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			18.4			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)				14.2		
Intersection Capacity Utilization			57.5%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				  			
Traffic Volume (vph)	65	645	0	0	552	308	10	3	423	0	0	0
Future Volume (vph)	65	645	0	0	552	308	10	3	423	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		1.00			1.00	1.00		0.96	1.00			
Satd. Flow (prot)		3322			3282	1346		1753	2369			
Flt Permitted		1.00			1.00	1.00		0.96	1.00			
Satd. Flow (perm)		3322			3282	1346		1753	2369			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	701	0	0	600	335	11	3	460	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	105	0	0	0
Lane Group Flow (vph)	0	772	0	0	600	335	0	14	355	0	0	0
Heavy Vehicles (%)	10%	8%	0%	0%	10%	20%	0%	20%	20%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2 4!	4	4!	6			
Permitted Phases						6			4			
Actuated Green, G (s)		39.2			23.5	79.8		12.0	35.5			
Effective Green, g (s)		39.2			23.5	79.8		12.0	35.5			
Actuated g/C Ratio		0.44			0.26	0.89		0.13	0.39			
Clearance Time (s)		5.1			5.1			5.1	5.1			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		1446			856	1346		233	1068			
v/s Ratio Prot		c0.23			c0.18	0.16		0.01	c0.09			
v/s Ratio Perm						0.09			0.06			
v/c Ratio		0.53			0.70	0.25		0.06	0.33			
Uniform Delay, d1		18.7			30.1	0.7		34.1	19.0			
Progression Factor		0.37			0.45	1.00		1.00	1.00			
Incremental Delay, d2		1.2			2.3	0.1		0.1	0.2			
Delay (s)		8.1			15.9	0.8		34.2	19.2			
Level of Service		A			B	A		C	B			
Approach Delay (s)		8.1			10.5			19.6			0.0	
Approach LOS		A			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		





























! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Sperry Ave & Rogers Rd

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	 			 						 		
Traffic Volume (vph)	276	525	267	113	400	258	278	8	117	139	0	182	
Future Volume (vph)	276	525	267	113	400	258	278	8	117	139	0	182	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (prot)	3213	3282	1583	1770	3059	1583	1770	1863	1583	1698	1372	1346	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (perm)	3213	3282	1583	1770	3059	1583	1770	1863	1583	1698	1372	1346	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	300	571	290	123	435	280	302	9	127	151	0	198	
RTOR Reduction (vph)	0	0	195	0	0	208	0	0	100	0	104	83	
Lane Group Flow (vph)	300	571	95	123	435	72	302	9	27	121	12	30	
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov	
Protected Phases	5	2		1	6		8	8		7	7	5	
Permitted Phases			2			6			8			7	
Actuated Green, G (s)	15.0	29.5	29.5	10.8	23.3	23.3	19.2	19.2	19.2	9.0	9.0	24.0	
Effective Green, g (s)	15.0	29.5	29.5	10.8	23.3	23.3	19.2	19.2	19.2	9.0	9.0	24.0	
Actuated g/C Ratio	0.17	0.33	0.33	0.12	0.26	0.26	0.21	0.21	0.21	0.10	0.10	0.27	
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	535	1075	518	212	791	409	377	397	337	169	137	456	
v/s Ratio Prot	0.09	c0.17		0.07	c0.14		c0.17	0.00		c0.07	0.01	0.01	
v/s Ratio Perm			0.06			0.05			0.02			0.01	
v/c Ratio	0.56	0.53	0.18	0.58	0.55	0.18	0.80	0.02	0.08	0.72	0.08	0.07	
Uniform Delay, d1	34.5	24.6	21.6	37.5	28.8	25.9	33.6	28.0	28.3	39.3	36.8	24.6	
Progression Factor	0.78	0.71	1.44	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	1.7	0.7	4.0	2.7	0.9	11.6	0.0	0.1	13.5	0.3	0.1	
Delay (s)	28.2	19.3	31.9	41.5	31.6	26.9	45.2	28.0	28.4	52.7	37.0	24.7	
Level of Service	C	B	C	D	C	C	D	C	C	D	D	C	
Approach Delay (s)		24.7			31.4			40.0			38.5		
Approach LOS		C			C			D			D		
Intersection Summary													
HCM 2000 Control Delay			30.9		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.67										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						23.5		
Intersection Capacity Utilization			55.8%		ICU Level of Service						B		
Analysis Period (min)			15										
c Critical Lane Group													

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔	↕↕	↔	↔	↕		↔	↕	
Traffic Volume (veh/h)	188	597	45	10	568	70	0	19	17	122	11	246
Future Volume (veh/h)	188	597	45	10	568	70	0	19	17	122	11	246
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		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	1583	1753	1900	1900	1827	1583	1900	1900	1900	1583	1595	1900
Adj Flow Rate, veh/h	204	649	49	11	617	76	0	21	18	133	12	267
Adj No. of Lanes	2	2	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	322	1346	102	31	1167	447	139	255	218	432	16	352
Arrive On Green	0.11	0.43	0.43	0.02	0.34	0.34	0.00	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	2925	3137	237	1810	3471	1329	1118	946	811	1158	59	1306
Grp Volume(v), veh/h	204	344	354	11	617	76	0	0	39	133	0	279
Grp Sat Flow(s),veh/h/ln	1463	1666	1708	1810	1736	1329	1118	0	1757	1158	0	1364
Q Serve(g_s), s	3.4	7.7	7.7	0.3	7.4	2.1	0.0	0.0	0.9	5.0	0.0	9.7
Cycle Q Clear(g_c), s	3.4	7.7	7.7	0.3	7.4	2.1	0.0	0.0	0.9	5.9	0.0	9.7
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.46	1.00		0.96
Lane Grp Cap(c), veh/h	322	715	733	31	1167	447	139	0	473	432	0	368
V/C Ratio(X)	0.63	0.48	0.48	0.36	0.53	0.17	0.00	0.00	0.08	0.31	0.00	0.76
Avail Cap(c_a), veh/h	527	1203	1233	210	2285	875	639	0	1259	950	0	977
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	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.0	10.6	10.6	25.1	13.8	12.1	0.0	0.0	14.1	16.3	0.0	17.3
Incr Delay (d2), s/veh	2.1	1.1	1.1	6.9	0.8	0.4	0.0	0.0	0.1	0.4	0.0	3.2
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	1.5	3.7	3.8	0.2	3.6	0.8	0.0	0.0	0.4	1.6	0.0	4.0
LnGrp Delay(d),s/veh	24.1	11.7	11.7	32.0	14.6	12.5	0.0	0.0	14.2	16.7	0.0	20.6
LnGrp LOS	C	B	B	C	B	B			B	B		C
Approach Vol, veh/h		902			704			39				412
Approach Delay, s/veh		14.5			14.7			14.2				19.3
Approach LOS		B			B			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	27.9		18.4	10.2	23.1		18.4				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	9.3	34.0		37.0				
Max Q Clear Time (g_c+I), s	9.7	9.7		11.7	5.4	9.4		2.9				
Green Ext Time (p_c), s	0.0	8.3		2.3	0.2	7.9		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			15.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 5: Baldwin Rd & Sperry Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	98	551	143	11	571	57	88	15	12	73	173	56
Future Volume (veh/h)	98	551	143	11	571	57	88	15	12	73	173	56
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1856	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	107	599	155	12	621	62	96	16	13	79	188	61
Adj No. of Lanes	1	2	0	1	1	1	2	1	0	1	1	1
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	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	144	1294	334	30	741	655	272	145	118	128	272	231
Arrive On Green	0.08	0.47	0.47	0.02	0.41	0.41	0.08	0.15	0.15	0.07	0.14	0.14
Sat Flow, veh/h	1792	2762	713	1660	1827	1615	3510	971	789	1792	1900	1615
Grp Volume(v), veh/h	107	382	372	12	621	62	96	0	29	79	188	61
Grp Sat Flow(s),veh/h/ln	1792	1763	1712	1660	1827	1615	1755	0	1761	1792	1900	1615
Q Serve(g_s), s	3.7	9.3	9.3	0.5	19.3	1.5	1.6	0.0	0.9	2.7	5.9	2.1
Cycle Q Clear(g_c), s	3.7	9.3	9.3	0.5	19.3	1.5	1.6	0.0	0.9	2.7	5.9	2.1
Prop In Lane	1.00		0.42	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	144	826	802	30	741	655	272	0	263	128	272	231
V/C Ratio(X)	0.74	0.46	0.46	0.40	0.84	0.09	0.35	0.00	0.11	0.62	0.69	0.26
Avail Cap(c_a), veh/h	221	886	860	158	866	765	334	0	753	193	837	711
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	11.4	11.4	30.6	16.9	11.6	27.6	0.0	23.2	28.5	25.7	24.1
Incr Delay (d2), s/veh	2.8	0.9	0.9	17.5	7.9	0.1	0.3	0.0	0.2	1.8	3.1	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	1.9	4.7	4.5	0.4	11.3	0.7	0.8	0.0	0.4	1.4	3.3	1.0
LnGrp Delay(d),s/veh	31.2	12.2	12.3	48.1	24.7	11.7	27.9	0.0	23.4	30.3	28.9	24.7
LnGrp LOS	C	B	B	D	C	B	C		C	C	C	C
Approach Vol, veh/h		861			695			125			328	
Approach Delay, s/veh		14.6			24.0			26.9			28.4	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	35.1	9.1	13.6	9.3	31.1	8.7	14.0				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	31.7	* 6	27.8	* 7.8	29.9	* 6.8	27.0				
Max Q Clear Time (g_c+1), s	12.5	11.3	3.6	7.9	5.7	21.3	4.7	2.9				
Green Ext Time (p_c), s	0.0	7.9	0.0	1.1	0.0	4.3	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				20.9								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	558	34	75	607	80	10	32	22	38	28	35
Future Volume (veh/h)	88	558	34	75	607	80	10	32	22	38	28	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	96	607	37	82	660	87	11	35	24	41	30	38
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	173	1168	71	158	1059	139	263	111	76	272	81	103
Arrive On Green	0.10	0.35	0.35	0.09	0.34	0.34	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	3357	204	1810	3118	410	1345	1039	713	1359	760	962
Grp Volume(v), veh/h	96	317	327	82	371	376	11	0	59	41	0	68
Grp Sat Flow(s),veh/h/ln	1810	1755	1807	1810	1754	1774	1345	0	1752	1359	0	1722
Q Serve(g_s), s	2.2	6.1	6.1	1.8	7.5	7.6	0.3	0.0	1.3	1.2	0.0	1.6
Cycle Q Clear(g_c), s	2.2	6.1	6.1	1.8	7.5	7.6	1.9	0.0	1.3	2.6	0.0	1.6
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	173	611	629	158	596	603	263	0	188	272	0	184
V/C Ratio(X)	0.55	0.52	0.52	0.52	0.62	0.62	0.04	0.00	0.31	0.15	0.00	0.37
Avail Cap(c_a), veh/h	276	820	844	365	906	916	814	0	905	828	0	889
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	11.1	11.1	18.6	11.8	11.8	18.6	0.0	17.6	18.8	0.0	17.7
Incr Delay (d2), s/veh	2.8	1.0	1.0	2.6	1.5	1.5	0.1	0.0	0.9	0.3	0.0	1.2
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	1.2	3.1	3.2	1.0	3.9	3.9	0.1	0.0	0.7	0.5	0.0	0.8
LnGrp Delay(d),s/veh	21.2	12.0	12.0	21.2	13.3	13.3	18.6	0.0	18.5	19.0	0.0	18.9
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		740			829			70			109	
Approach Delay, s/veh		13.2			14.1			18.5			19.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	21.3		11.1	10.6	21.0		11.1				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	19.9	19.9		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1), s	13.8	8.1		4.6	4.2	9.6		3.9				
Green Ext Time (p_c), s	0.1	3.9		0.4	0.0	4.9		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			14.2									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↗	↖	↗	↖
Traffic Volume (veh/h)	142	377	49	243	384	120	29	107	82	154	372	58
Future Volume (veh/h)	142	377	49	243	384	120	29	107	82	154	372	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
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	1863	1841	1900	1881	1858	1900	1845	1881	1863	1881	1900	1900
Adj Flow Rate, veh/h	154	410	53	264	417	130	32	116	89	167	404	63
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
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	3	3	1	3	3	3	1	2	1	0	0
Cap, veh/h	195	679	87	323	722	223	236	601	505	438	607	504
Arrive On Green	0.11	0.22	0.22	0.18	0.27	0.27	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	3112	400	1792	2645	815	909	1881	1582	1183	1900	1577
Grp Volume(v), veh/h	154	229	234	264	277	270	32	116	89	167	404	63
Grp Sat Flow(s),veh/h/ln	1774	1749	1763	1792	1765	1696	909	1881	1582	1183	1900	1577
Q Serve(g_s), s	5.4	7.5	7.6	9.0	8.6	8.8	2.0	2.9	2.6	7.6	11.7	1.8
Cycle Q Clear(g_c), s	5.4	7.5	7.6	9.0	8.6	8.8	13.7	2.9	2.6	10.5	11.7	1.8
Prop In Lane	1.00		0.23	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	381	384	323	482	463	236	601	505	438	607	504
V/C Ratio(X)	0.79	0.60	0.61	0.82	0.57	0.58	0.14	0.19	0.18	0.38	0.67	0.13
Avail Cap(c_a), veh/h	278	548	553	646	885	851	430	1002	843	690	1013	840
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	22.4	22.5	25.1	20.0	20.1	24.7	15.7	15.7	19.5	18.8	15.4
Incr Delay (d2), s/veh	9.6	3.2	3.3	5.1	2.3	2.5	0.6	0.3	0.4	1.2	2.7	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	8.2	4.0	4.1	4.9	4.5	4.5	0.5	1.5	1.2	2.6	6.5	0.8
LnGrp Delay(d),s/veh	37.3	25.7	25.8	30.2	22.3	22.6	25.2	16.1	16.0	20.7	21.4	15.6
LnGrp LOS	D	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		617			811			237			634	
Approach Delay, s/veh		28.6			25.0			17.3			20.7	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	19.9		26.4	14.0	23.4		26.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	23.0	20.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+ll), s	9.6	9.6		13.7	7.4	10.8		15.7				
Green Ext Time (p_c), s	0.6	3.1		6.2	0.1	5.7		1.9				
Intersection Summary												
HCM 2010 Ctrl Delay				24.0								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	281	63	23	364	15	39	38	6	3	59	148
Future Volume (veh/h)	157	281	63	23	364	15	39	38	6	3	59	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	171	305	68	25	396	16	42	41	7	3	64	161
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	565	1370	301	657	892	787	280	222	29	114	106	260
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	988	2805	616	1024	1827	1612	534	1018	131	8	487	1189
Grp Volume(v), veh/h	171	185	188	25	396	16	90	0	0	228	0	0
Grp Sat Flow(s),veh/h/ln	988	1721	1701	1024	1827	1612	1683	0	0	1684	0	0
Q Serve(g_s), s	4.4	2.0	2.1	0.5	4.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.0	2.0	2.1	2.5	4.6	0.2	1.3	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.36	1.00		1.00	0.47		0.08	0.01		0.71
Lane Grp Cap(c), veh/h	565	840	831	657	892	787	531	0	0	480	0	0
V/C Ratio(X)	0.30	0.22	0.23	0.04	0.44	0.02	0.17	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	887	1401	1385	991	1488	1313	1294	0	0	1362	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	4.8	4.8	5.5	5.4	4.3	10.4	0.0	0.0	11.4	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.3	0.3	0.1	0.7	0.0	0.1	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.0	1.0	0.1	2.4	0.1	0.7	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	9.0	5.0	5.1	5.5	6.2	4.3	10.5	0.0	0.0	12.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		544			437			90			228	
Approach Delay, s/veh		6.3			6.1			10.5			12.2	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.4		12.0		20.4		12.0				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.4		24.1		26.4		24.1				
Max Q Clear Time (g_c+1), s		11.0		3.3		6.6		6.0				
Green Ext Time (p_c), s		4.8		0.4		4.5		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.5								
HCM 2010 LOS				A								

HCM Signalized Intersection Capacity Analysis
9: SR-33 & Sperry Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	109	127	15	54	6	111	269	48	19	238	175
Future Volume (vph)	158	109	127	15	54	6	111	269	48	19	238	175
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	1662		1805	1837		1703	1792		1556	1810	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1703	1662		1805	1837		1703	1792		1556	1810	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	118	138	16	59	7	121	292	52	21	259	190
RTOR Reduction (vph)	0	67	0	0	7	0	0	7	0	0	0	121
Lane Group Flow (vph)	172	189	0	16	59	0	121	337	0	21	259	69
Heavy Vehicles (%)	6%	4%	6%	0%	2%	0%	6%	3%	7%	16%	5%	4%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	12.1	12.1		3.2	3.2		6.2	28.8		0.8	23.4	23.4
Effective Green, g (s)	12.1	12.1		3.2	3.2		6.2	28.8		0.8	23.4	23.4
Actuated g/C Ratio	0.19	0.19		0.05	0.05		0.10	0.45		0.01	0.36	0.36
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	319	312		89	91		163	801		19	657	564
v/s Ratio Prot	0.10	c0.11		0.01	c0.03		c0.07	c0.19		0.01	0.14	
v/s Ratio Perm												0.04
v/c Ratio	0.54	0.60		0.18	0.65		0.74	0.42		1.11	0.39	0.12
Uniform Delay, d1	23.6	24.0		29.3	30.1		28.3	12.1		31.8	15.2	13.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	3.3		1.0	15.5		16.6	1.6		242.0	1.8	0.4
Delay (s)	25.4	27.2		30.3	45.6		44.9	13.7		273.8	17.0	14.1
Level of Service	C	C		C	D		D	B		F	B	B
Approach Delay (s)		26.5			42.6			21.9			27.3	
Approach LOS		C			D			C			C	

Intersection Summary

HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	19.5
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	13	93	61	74	83	12	28	189	62	57	291	13
Future Volume (veh/h)	13	93	61	74	83	12	28	189	62	57	291	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1583	1583	1583	1583	1583	1900
Adj Flow Rate, veh/h	14	101	66	80	90	13	30	205	67	62	316	14
Adj No. of Lanes	1	1	0	2	1	0	1	1	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, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	38	176	115	404	427	62	354	298	411	112	647	29
Arrive On Green	0.02	0.17	0.17	0.12	0.27	0.27	0.04	0.19	0.19	0.07	0.22	0.22
Sat Flow, veh/h	1774	1053	688	3442	1592	230	1508	1583	1346	1508	2935	130
Grp Volume(v), veh/h	14	0	167	80	0	103	30	205	67	62	161	169
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1721	0	1822	1508	1583	1346	1508	1504	1560
Q Serve(g_s), s	0.3	0.0	3.6	0.8	0.0	1.8	0.6	4.9	0.4	1.6	3.8	3.8
Cycle Q Clear(g_c), s	0.3	0.0	3.6	0.8	0.0	1.8	0.6	4.9	0.4	1.6	3.8	3.8
Prop In Lane	1.00		0.40	1.00		0.13	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	38	0	292	404	0	489	354	298	411	112	332	344
V/C Ratio(X)	0.37	0.00	0.57	0.20	0.00	0.21	0.08	0.69	0.16	0.55	0.49	0.49
Avail Cap(c_a), veh/h	263	0	1037	2467	0	2131	514	963	976	335	1026	1065
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	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	19.5	0.0	15.5	16.1	0.0	11.5	12.3	15.3	2.2	18.1	13.8	13.8
Incr Delay (d2), s/veh	2.1	0.0	0.7	0.1	0.0	0.1	0.0	1.1	0.1	1.6	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.8	0.4	0.0	0.9	0.3	2.2	0.3	0.7	1.6	1.7
LnGrp Delay(d),s/veh	21.7	0.0	16.2	16.2	0.0	11.6	12.3	16.4	2.3	19.6	14.2	14.2
LnGrp LOS	C		B	B		B	B	B	A	B	B	B
Approach Vol, veh/h		181			183			302			392	
Approach Delay, s/veh		16.6			13.6			12.8			15.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	11.0	7.0	12.5	4.9	16.0	5.7	13.8				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 24	9.0	24.6	6.0	* 47	6.0	27.6				
Max Q Clear Time (g_c+1), s	12.8	5.6	3.6	6.9	2.3	3.8	2.6	5.8				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.1	0.0	0.2	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			14.4									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	328	11	281	446	96	18	184	245	116	234	3
Future Volume (veh/h)	25	328	11	281	446	96	18	184	245	116	234	3
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.99		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1870	1900	1810	1900	1900	1900	1845	1845	1881	1811	1900
Adj Flow Rate, veh/h	27	357	12	305	485	104	20	200	266	126	254	3
Adj No. of Lanes	1	1	0	1	1	1	1	1	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	313	473	16	463	731	608	326	395	332	715	472	6
Arrive On Green	0.03	0.26	0.26	0.15	0.38	0.38	0.02	0.21	0.21	0.07	0.26	0.26
Sat Flow, veh/h	1723	1798	60	1723	1900	1578	1810	1845	1550	3476	1785	21
Grp Volume(v), veh/h	27	0	369	305	485	104	20	200	266	126	0	257
Grp Sat Flow(s),veh/h/ln	1723	0	1858	1723	1900	1578	1810	1845	1550	1738	0	1806
Q Serve(g_s), s	0.7	0.0	10.8	7.0	12.4	2.6	0.5	5.6	9.6	1.5	0.0	7.2
Cycle Q Clear(g_c), s	0.7	0.0	10.8	7.0	12.4	2.6	0.5	5.6	9.6	1.5	0.0	7.2
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	313	0	488	463	731	608	326	395	332	715	0	478
V/C Ratio(X)	0.09	0.00	0.76	0.66	0.66	0.17	0.06	0.51	0.80	0.18	0.00	0.54
Avail Cap(c_a), veh/h	421	0	926	755	1381	1147	529	738	620	782	0	646
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	20.0	12.9	15.0	12.0	17.5	20.4	22.0	15.2	0.0	18.6
Incr Delay (d2), s/veh	0.0	0.0	0.9	0.6	0.4	0.0	0.0	0.4	1.7	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	5.7	3.3	6.5	1.1	0.3	2.9	4.2	0.7	0.0	3.6
LnGrp Delay(d),s/veh	15.3	0.0	20.9	13.5	15.4	12.0	17.5	20.8	23.7	15.2	0.0	19.0
LnGrp LOS	B		C	B	B	B	B	C	C	B		B
Approach Vol, veh/h		396			894			486			383	
Approach Delay, s/veh		20.5			14.3			22.3			17.7	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	27.3	8.4	17.5	13.0	20.1	5.4	20.5				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	42.9	5.5	23.6	19.0	29.4	8.0	21.1				
Max Q Clear Time (g_c+1), s	12.7	14.4	3.5	11.6	9.0	12.8	2.5	9.2				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.1	0.1	0.4	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			17.9									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (veh/h)	6	20	20	13	57	66	51	235	6	46	328	12
Future Volume (veh/h)	6	20	20	13	57	66	51	235	6	46	328	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1583	1583	1900	1583	1583	1900
Adj Flow Rate, veh/h	7	22	22	14	62	72	55	255	7	50	357	13
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	150	132	115	140	121	129	91	503	14	85	492	18
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.06	0.33	0.33	0.06	0.32	0.32
Sat Flow, veh/h	123	837	728	96	768	819	1508	1534	42	1508	1518	55
Grp Volume(v), veh/h	51	0	0	148	0	0	55	0	262	50	0	370
Grp Sat Flow(s),veh/h/ln1687	0	0	1683	0	0	1508	0	1576	1508	0	1574	
Q Serve(g_s), s	0.0	0.0	0.0	0.6	0.0	0.0	1.1	0.0	4.2	1.0	0.0	6.5
Cycle Q Clear(g_c), s	0.8	0.0	0.0	2.5	0.0	0.0	1.1	0.0	4.2	1.0	0.0	6.5
Prop In Lane	0.14		0.43	0.09		0.49	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	396	0	0	390	0	0	91	0	517	85	0	510
V/C Ratio(X)	0.13	0.00	0.00	0.38	0.00	0.00	0.60	0.00	0.51	0.59	0.00	0.73
Avail Cap(c_a), veh/h	1073	0	0	1080	0	0	288	0	1043	326	0	1082
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.5	0.0	0.0	12.2	0.0	0.0	14.4	0.0	8.5	14.5	0.0	9.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.6	0.0	0.0	6.2	0.0	0.8	6.4	0.0	2.0
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/ln0.4	0.0	0.0	1.2	0.0	0.0	0.6	0.0	1.9	0.6	0.0	3.1	
LnGrp Delay(d),s/veh	11.6	0.0	0.0	12.8	0.0	0.0	20.6	0.0	9.3	20.8	0.0	11.4
LnGrp LOS	B			B			C		A	C		B
Approach Vol, veh/h		51			148			317			420	
Approach Delay, s/veh		11.6			12.8			11.2			12.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s5.8	16.1			9.5	5.9	16.0		9.5				
Change Period (Y+Rc), s 4.0	5.8			4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s 20.8	20.8			18.0	6.0	21.6		18.0				
Max Q Clear Time (g_c+1), s 6.2	6.2			2.8	3.1	8.5		4.5				
Green Ext Time (p_c), s 0.0	0.0	1.1		0.2	0.0	1.6		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				12.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	110	50	29	68	1	67	2	37	0	3	1
Future Volume (veh/h)	1	110	50	29	68	1	67	2	37	0	3	1
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		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1583	1827	1759	1900	1655	1900	1845	1830	1900	1900	1583	1900
Adj Flow Rate, veh/h	1	120	54	32	74	1	73	2	40	0	3	1
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	4	8	0	15	15	3	20	20	20	20	20
Cap, veh/h	5	468	559	70	479	6	414	9	181	0	7	2
Arrive On Green	0.00	0.26	0.26	0.04	0.29	0.29	0.12	0.12	0.12	0.00	0.01	0.01
Sat Flow, veh/h	1508	1827	1474	1810	1629	22	3408	75	1492	0	1137	379
Grp Volume(v), veh/h	1	120	54	32	0	75	73	0	42	0	0	4
Grp Sat Flow(s),veh/h/ln	1508	1827	1474	1810	0	1651	1704	0	1567	0	0	1516
Q Serve(g_s), s	0.0	1.6	0.7	0.5	0.0	1.0	0.6	0.0	0.8	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	1.6	0.7	0.5	0.0	1.0	0.6	0.0	0.8	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.95	0.00		0.25
Lane Grp Cap(c), veh/h	5	468	559	70	0	485	414	0	190	0	0	10
V/C Ratio(X)	0.21	0.26	0.10	0.46	0.00	0.15	0.18	0.00	0.22	0.00	0.00	0.40
Avail Cap(c_a), veh/h	242	498	583	290	0	485	819	0	377	0	0	292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	15.5	9.2	6.3	14.7	0.0	8.1	12.3	0.0	12.4	0.0	0.0	15.4
Incr Delay (d2), s/veh	19.9	0.3	0.1	4.5	0.0	0.1	0.2	0.0	0.6	0.0	0.0	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	0.0	0.8	0.4	0.4	0.0	0.5	0.3	0.0	0.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	35.4	9.5	6.3	19.2	0.0	8.3	12.5	0.0	13.0	0.0	0.0	39.6
LnGrp LOS	D	A	A	B		A	B		B			D
Approach Vol, veh/h		175			107			115			4	
Approach Delay, s/veh		8.7			11.6			12.7			39.6	
Approach LOS		A			B			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.3	5.7	12.5		4.7	4.5	13.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		7.5	5.0	8.5		6.0	5.0	8.5				
Max Q Clear Time (g_c+I1), s		2.8	2.5	3.6		2.1	2.0	3.0				
Green Ext Time (p_c), s		0.1	0.0	0.3		0.0	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				10.9								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖↗	↖↗		↖	↑↑	↖	↖↗	↗	
Traffic Volume (veh/h)	0	0	0	29	58	68	2	46	33	55	46	38
Future Volume (veh/h)	0	0	0	29	58	68	2	46	33	55	46	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1583	1860	1900	1900	1583	1583	1827	1773	1900
Adj Flow Rate, veh/h	0	0	0	32	63	74	2	50	36	60	50	41
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	20	0	0	0	20	20	4	13	13
Cap, veh/h	6	49	0	115	164	193	7	650	291	225	253	207
Arrive On Green	0.00	0.00	0.00	0.04	0.21	0.21	0.00	0.22	0.22	0.07	0.28	0.28
Sat Flow, veh/h	1774	1863	0	2925	781	917	1810	3008	1346	3375	903	740
Grp Volume(v), veh/h	0	0	0	32	0	137	2	50	36	60	0	91
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1463	0	1698	1810	1504	1346	1688	0	1643
Q Serve(g_s), s	0.0	0.0	0.0	0.3	0.0	1.9	0.0	0.4	0.6	0.5	0.0	1.2
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.3	0.0	1.9	0.0	0.4	0.6	0.5	0.0	1.2
Prop In Lane	1.00		0.00	1.00		0.54	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	6	49	0	115	0	357	7	650	291	225	0	460
V/C Ratio(X)	0.00	0.00	0.00	0.28	0.00	0.38	0.31	0.08	0.12	0.27	0.00	0.20
Avail Cap(c_a), veh/h	321	1375	0	529	0	1235	327	2384	1067	611	0	1332
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)	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	12.9	0.0	9.4	13.7	8.6	8.7	12.3	0.0	7.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.3	0.0	0.7	24.2	0.0	0.2	0.6	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	0.0	0.0	0.0	0.1	0.0	0.9	0.1	0.2	0.2	0.2	0.0	0.6
LnGrp Delay(d),s/veh	0.0	0.0	0.0	14.2	0.0	10.0	38.0	8.7	8.9	12.9	0.0	7.8
LnGrp LOS				B		B	D	A	A	B		A
Approach Vol, veh/h		0			169			88			151	
Approach Delay, s/veh		0.0			10.8			9.4			9.8	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	11.1	5.1	5.6	4.1	12.8	0.0	10.7				
Change Period (Y+Rc), s	4.0	5.1	4.0	* 4.9	4.0	* 5.1	4.0	4.9				
Max Green Setting (Gmax), s	5.0	21.9	5.0	* 20	5.0	* 22	5.0	20.1				
Max Q Clear Time (g_c+1), s	12.5	2.6	2.3	0.0	2.0	3.2	0.0	3.9				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				10.2								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	0	10	14	16	1	118	43	16	47	12
Future Volume (veh/h)	0	1	0	10	14	16	1	118	43	16	47	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1759	1759	1759	1610	1610	1610	1638	1638	1900
Adj Flow Rate, veh/h	0	1	0	11	15	17	1	128	47	17	51	13
Adj No. of Lanes	1	2	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, %	2	2	2	8	8	8	18	18	18	16	16	16
Cap, veh/h	6	11	5	194	105	122	5	763	341	34	669	164
Arrive On Green	0.00	0.00	0.00	0.06	0.06	0.06	0.00	0.25	0.25	0.02	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	3250	1759	1495	1533	3059	1369	1560	2478	609
Grp Volume(v), veh/h	0	1	0	11	15	17	1	128	47	17	31	33
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1625	1759	1495	1533	1530	1369	1560	1556	1530
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.3	0.3	0.0	1.1	0.9	0.3	0.5	0.5
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.1	0.3	0.3	0.0	1.1	0.9	0.3	0.5	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	6	11	5	194	105	122	5	763	341	34	420	413
V/C Ratio(X)	0.00	0.09	0.00	0.06	0.14	0.14	0.21	0.17	0.14	0.50	0.07	0.08
Avail Cap(c_a), veh/h	343	684	306	628	340	322	287	973	435	292	495	487
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.0	0.0	14.2	14.3	13.7	16.0	9.4	9.4	15.5	8.7	8.7
Incr Delay (d2), s/veh	0.0	3.5	0.0	0.1	0.6	0.5	20.3	0.1	0.2	10.7	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	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.5	0.3	0.2	0.2	0.2
LnGrp Delay(d),s/veh	0.0	19.4	0.0	14.3	14.9	14.2	36.3	9.5	9.5	26.3	8.8	8.8
LnGrp LOS		B		B	B	B	D	A	A	C	A	A
Approach Vol, veh/h		1			43			176			81	
Approach Delay, s/veh		19.4			14.5			9.7			12.5	
Approach LOS		B			B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	13.8		5.9	4.0	14.5		7.7				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	10.2	10.2		6.2	6.0	10.2		6.2				
Max Q Clear Time (g_c+I), s	11.3	3.1		2.0	2.0	2.5		2.3				
Green Ext Time (p_c), s	0.0	0.4		0.0	0.0	0.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				11.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 16: Baldwin Rd & Zacharias Rd

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	37	8	17	22	8	5	48	28	17	101	3
Future Volume (veh/h)	2	37	8	17	22	8	5	48	28	17	101	3
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	1863	1759	1759	1759	1743	1743	1900	1667	1667	1900
Adj Flow Rate, veh/h	2	40	9	18	24	9	5	52	30	18	110	3
Adj No. of Lanes	1	1	1	2	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	8	8	8	9	9	9	14	14	14
Cap, veh/h	118	124	106	289	156	133	11	232	134	36	387	11
Arrive On Green	0.07	0.07	0.07	0.09	0.09	0.09	0.01	0.22	0.22	0.02	0.24	0.24
Sat Flow, veh/h	1774	1863	1583	3250	1759	1495	1660	1038	599	1587	1615	44
Grp Volume(v), veh/h	2	40	9	18	24	9	5	0	82	18	0	113
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1625	1759	1495	1660	0	1637	1587	0	1659
Q Serve(g_s), s	0.0	0.7	0.2	0.2	0.5	0.2	0.1	0.0	1.5	0.4	0.0	2.0
Cycle Q Clear(g_c), s	0.0	0.7	0.2	0.2	0.5	0.2	0.1	0.0	1.5	0.4	0.0	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.03
Lane Grp Cap(c), veh/h	118	124	106	289	156	133	11	0	366	36	0	398
V/C Ratio(X)	0.02	0.32	0.09	0.06	0.15	0.07	0.44	0.00	0.22	0.50	0.00	0.28
Avail Cap(c_a), veh/h	297	312	265	727	393	334	255	0	416	244	0	422
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	15.9	15.7	14.9	15.1	14.9	17.7	0.0	11.4	17.3	0.0	11.1
Incr Delay (d2), s/veh	0.1	1.5	0.3	0.1	0.5	0.2	25.1	0.0	0.3	10.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.1	0.1	0.2	0.1	0.1	0.0	0.7	0.3	0.0	1.0
LnGrp Delay(d),s/veh	15.7	17.4	16.0	15.0	15.5	15.2	42.9	0.0	11.7	27.3	0.0	11.5
LnGrp LOS	B	B	B	B	B	B	D		B	C		B
Approach Vol, veh/h		51			51			87			131	
Approach Delay, s/veh		17.1			15.3			13.5			13.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	13.8		8.2	4.2	14.4		9.0				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	9.1		6.0	5.5	9.1		8.0				
Max Q Clear Time (g_c+I), s	12.4	3.5		2.7	2.1	4.0		2.5				
Green Ext Time (p_c), s	0.0	0.1		0.0	0.0	0.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				14.4								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	3	65	85	255	508	6		
Future Volume (veh/h)	3	65	85	255	508	6		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1881	1712	1667	1900		
Adj Flow Rate, veh/h	3	71	92	277	552	7		
Adj No. of Lanes	1	2	1	2	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	1	11	14	14		
Cap, veh/h	165	259	162	1644	886	11		
Arrive On Green	0.09	0.09	0.09	0.51	0.28	0.28		
Sat Flow, veh/h	1774	2787	1792	3338	3286	41		
Grp Volume(v), veh/h	3	71	92	277	273	286		
Grp Sat Flow(s),veh/h/ln	1774	1393	1792	1626	1583	1660		
Q Serve(g_s), s	0.0	0.7	1.4	1.3	4.4	4.4		
Cycle Q Clear(g_c), s	0.0	0.7	1.4	1.3	4.4	4.4		
Prop In Lane	1.00	1.00	1.00			0.02		
Lane Grp Cap(c), veh/h	165	259	162	1644	438	459		
V/C Ratio(X)	0.02	0.27	0.57	0.17	0.62	0.62		
Avail Cap(c_a), veh/h	368	579	422	2521	636	666		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	11.9	12.2	12.6	3.9	9.1	9.1		
Incr Delay (d2), s/veh	0.0	0.6	3.1	0.0	1.5	1.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.8	0.6	2.1	2.2		
LnGrp Delay(d),s/veh	12.0	12.8	15.7	3.9	10.6	10.5		
LnGrp LOS	B	B	B	A	B	B		
Approach Vol, veh/h	74			369	559			
Approach Delay, s/veh	12.7			6.9	10.5			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		20.4		8.5	6.6	13.8		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		22.4		6.0	6.8	11.6		
Max Q Clear Time (g_c+I1), s		3.3		2.7	3.4	6.4		
Green Ext Time (p_c), s		1.5		0.0	0.0	1.4		
Intersection Summary								
HCM 2010 Ctrl Delay			9.3					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
18: SR-33 & Ward Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	92	5	6	280	374	132		
Future Volume (veh/h)	92	5	6	280	374	132		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1743	1583	1583	1583	1583		
Adj Flow Rate, veh/h	100	5	7	304	407	143		
Adj No. of Lanes	1	1	1	1	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	9	9	20	20	20	20		
Cap, veh/h	266	238	14	703	872	390		
Arrive On Green	0.16	0.16	0.01	0.44	0.29	0.29		
Sat Flow, veh/h	1660	1482	1508	1583	3088	1346		
Grp Volume(v), veh/h	100	5	7	304	407	143		
Grp Sat Flow(s),veh/h/ln	1660	1482	1508	1583	1504	1346		
Q Serve(g_s), s	1.5	0.1	0.1	3.6	3.1	2.3		
Cycle Q Clear(g_c), s	1.5	0.1	0.1	3.6	3.1	2.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	266	238	14	703	872	390		
V/C Ratio(X)	0.38	0.02	0.49	0.43	0.47	0.37		
Avail Cap(c_a), veh/h	482	430	273	1212	1320	591		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.3	9.8	13.6	5.3	8.0	7.8		
Incr Delay (d2), s/veh	0.9	0.0	23.8	0.4	0.4	0.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	0.1	0.1	1.6	1.3	0.9		
LnGrp Delay(d),s/veh	11.2	9.8	37.3	5.7	8.4	8.4		
LnGrp LOS	B	A	D	A	A	A		
Approach Vol, veh/h	105			311	550			
Approach Delay, s/veh	11.2			6.4	8.4			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		18.0		9.5	4.3	13.8		
Change Period (Y+Rc), s		5.8		5.1	4.0	5.8		
Max Green Setting (Gmax), s		21.1		8.0	5.0	12.1		
Max Q Clear Time (g_c+I1), s		5.6		3.5	2.1	5.1		
Green Ext Time (p_c), s		1.4		0.1	0.0	1.7		
Intersection Summary								
HCM 2010 Ctrl Delay			8.1					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	Y		↑↑		Y	↑↑		
Traffic Volume (veh/h)	13	9	287	20	42	490		
Future Volume (veh/h)	13	9	287	20	42	490		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1900	1712	1900	1667	1667		
Adj Flow Rate, veh/h	14	10	312	22	46	533		
Adj No. of Lanes	0	0	2	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	0	11	11	14	14		
Cap, veh/h	45	32	935	66	86	1613		
Arrive On Green	0.05	0.05	0.30	0.30	0.05	0.51		
Sat Flow, veh/h	889	635	3169	216	1587	3250		
Grp Volume(v), veh/h	25	0	164	170	46	533		
Grp Sat Flow(s),veh/h/ln	1587	0	1626	1674	1587	1583		
Q Serve(g_s), s	0.4	0.0	2.1	2.1	0.7	2.6		
Cycle Q Clear(g_c), s	0.4	0.0	2.1	2.1	0.7	2.6		
Prop In Lane	0.56	0.40		0.13	1.00			
Lane Grp Cap(c), veh/h	81	0	493	508	86	1613		
V/C Ratio(X)	0.31	0.00	0.33	0.34	0.53	0.33		
Avail Cap(c_a), veh/h	493	0	691	711	301	2426		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	12.1	0.0	7.1	7.1	12.1	3.8		
Incr Delay (d2), s/veh	2.2	0.0	0.4	0.4	5.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.0	1.0	0.4	1.1		
LnGrp Delay(d),s/veh	14.2	0.0	7.5	7.5	17.2	3.9		
LnGrp LOS	B		A	A	B	A		
Approach Vol, veh/h	25		334			579		
Approach Delay, s/veh	14.2		7.5			5.0		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.4	13.8				19.2		7.1
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	5.0	11.2				20.2		8.2
Max Q Clear Time (g_c+I), s	12.5	4.1				4.6		2.4
Green Ext Time (p_c), s	0.0	1.0				2.9		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			6.1					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
20: SR-33 & Baldwin Rd

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	43	4	0	401	486	55		
Future Volume (veh/h)	43	4	0	401	486	55		
Number	5	12	3	8	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1743	1881	1712	1667	1900		
Adj Flow Rate, veh/h	47	4	0	436	528	60		
Adj No. of Lanes	1	1	1	1	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	9	9	1	11	14	14		
Cap, veh/h	160	143	8	689	1154	131		
Arrive On Green	0.10	0.10	0.00	0.40	0.40	0.40		
Sat Flow, veh/h	1660	1482	1792	1712	2951	325		
Grp Volume(v), veh/h	47	4	0	436	291	297		
Grp Sat Flow(s),veh/h/ln	1660	1482	1792	1712	1583	1609		
Q Serve(g_s), s	0.6	0.1	0.0	4.7	3.1	3.1		
Cycle Q Clear(g_c), s	0.6	0.1	0.0	4.7	3.1	3.1		
Prop In Lane	1.00	1.00	1.00			0.20		
Lane Grp Cap(c), veh/h	160	143	8	689	637	647		
V/C Ratio(X)	0.29	0.03	0.00	0.63	0.46	0.46		
Avail Cap(c_a), veh/h	767	685	426	2787	1929	1960		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	9.7	9.5	0.0	5.5	5.1	5.1		
Incr Delay (d2), s/veh	1.0	0.1	0.0	1.0	0.5	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	2.4	1.4	1.4		
LnGrp Delay(d),s/veh	10.7	9.6	0.0	6.5	5.6	5.6		
LnGrp LOS	B	A		A	A	A		
Approach Vol, veh/h	51			436	588			
Approach Delay, s/veh	10.6			6.5	5.6			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		8.0	0.0	15.1				15.1
Change Period (Y+Rc), s		5.8	4.0	5.8				5.8
Max Green Setting (Gmax), s		10.7	5.5	28.2				37.7
Max Q Clear Time (g_c+I1), s		2.6	0.0	5.1				6.7
Green Ext Time (p_c), s		0.0	0.0	3.3				2.6
Intersection Summary								
HCM 2010 Ctrl Delay			6.2					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
21: Rogers Rd & SR-33

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↵	↑	↵			
Traffic Volume (veh/h)	522	53	5	284	173	15		
Future Volume (veh/h)	522	53	5	284	173	15		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1712	1900	1667	1667	1610	1900		
Adj Flow Rate, veh/h	567	58	5	309	188	16		
Adj No. of Lanes	2	0	1	1	0	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	11	11	14	14	0	0		
Cap, veh/h	923	94	11	747	238	20		
Arrive On Green	0.31	0.31	0.01	0.45	0.17	0.17		
Sat Flow, veh/h	3066	304	1587	1667	1394	119		
Grp Volume(v), veh/h	309	316	5	309	205	0		
Grp Sat Flow(s),veh/h/ln	1626	1658	1587	1667	1520	0		
Q Serve(g_s), s	4.9	4.9	0.1	3.8	3.9	0.0		
Cycle Q Clear(g_c), s	4.9	4.9	0.1	3.8	3.9	0.0		
Prop In Lane		0.18	1.00		0.92	0.08		
Lane Grp Cap(c), veh/h	503	513	11	747	259	0		
V/C Ratio(X)	0.61	0.62	0.46	0.41	0.79	0.00		
Avail Cap(c_a), veh/h	813	829	261	1327	710	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	8.9	9.0	15.0	5.7	12.1	0.0		
Incr Delay (d2), s/veh	1.2	1.2	27.9	0.4	5.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.3	2.4	0.1	1.8	2.0	0.0		
LnGrp Delay(d),s/veh	10.2	10.2	42.9	6.1	17.5	0.0		
LnGrp LOS	B	B	D	A	B			
Approach Vol, veh/h	625			314	205			
Approach Delay, s/veh	10.2			6.6	17.5			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		11.0	4.2	15.2				19.4
Change Period (Y+Rc), s		5.8	4.0	5.8				5.8
Max Green Setting (Gmax), s		14.2	5.0	15.2				24.2
Max Q Clear Time (g_c+1), s		5.9	2.1	6.9				5.8
Green Ext Time (p_c), s		0.4	0.0	2.5				1.7
Intersection Summary								
HCM 2010 Ctrl Delay			10.5					
HCM 2010 LOS			B					

Intersection												
Intersection Delay, s/veh 17.4												
Intersection LOS C												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	211	29	0	66	5	1	19	2	51	409	22
Future Vol, veh/h	34	211	29	0	66	5	1	19	2	51	409	22
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
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	37	229	32	0	72	5	1	21	2	55	445	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.5	10	9.1	21
HCM LOS	B	A	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	12%	0%	11%
Vol Thru, %	86%	77%	93%	85%
Vol Right, %	9%	11%	7%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	274	71	482
LT Vol	1	34	0	51
Through Vol	19	211	66	409
RT Vol	2	29	5	22
Lane Flow Rate	24	298	77	524
Geometry Grp	1	1	1	1
Degree of Util (X)	0.039	0.465	0.129	0.737
Departure Headway (Hd)	5.808	5.619	6.024	5.066
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	615	640	594	713
Service Time	3.858	3.655	4.072	3.096
HCM Lane V/C Ratio	0.039	0.466	0.13	0.735
HCM Control Delay	9.1	13.5	10	21
HCM Lane LOS	A	B	A	C
HCM 95th-tile Q	0.1	2.5	0.4	6.6

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	25	309	2	4	1	21	45	21	7	112	2
Future Vol, veh/h	25	25	309	2	4	1	21	45	21	7	112	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	27	27	336	2	4	1	23	49	23	8	122	2





















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	248	257	123	428	247	61	124	0	0	72	0	0
Stage 1	139	139	-	107	107	-	-	-	-	-	-	-
Stage 2	109	118	-	321	140	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	693	637	912	525	644	985	1463	-	-	1528	-	-
Stage 1	850	770	-	882	793	-	-	-	-	-	-	-
Stage 2	882	787	-	676	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	677	623	912	316	630	985	1463	-	-	1528	-	-
Mov Cap-2 Maneuver	677	623	-	316	630	-	-	-	-	-	-	-
Stage 1	836	765	-	868	780	-	-	-	-	-	-	-
Stage 2	862	774	-	409	763	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.6		12.2		1.8		0.4	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1463	-	-	863	511	1528	-	-
HCM Lane V/C Ratio	0.016	-	-	0.452	0.015	0.005	-	-
HCM Control Delay (s)	7.5	0	-	12.6	12.2	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.4	0	0	-	-

HCM 2010 Signalized Intersection Summary
24: Sycamore Ave & Las Palmas Ave

2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	565	10	29	446	36	5	26	50	54	26	12
Future Volume (veh/h)	10	565	10	29	446	36	5	26	50	54	26	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	614	11	32	485	39	5	28	54	59	28	13
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	23	680	12	59	698	56	142	46	88	152	103	48
Arrive On Green	0.01	0.41	0.41	0.04	0.43	0.43	0.08	0.08	0.08	0.09	0.09	0.09
Sat Flow, veh/h	1616	1661	30	1691	1622	130	1774	570	1099	1774	1205	559
Grp Volume(v), veh/h	11	0	625	32	0	524	5	0	82	59	0	41
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1669	1774	0	1764
Q Serve(g_s), s	0.4	0.0	19.0	1.0	0.0	13.3	0.1	0.0	2.6	1.7	0.0	1.2
Cycle Q Clear(g_c), s	0.4	0.0	19.0	1.0	0.0	13.3	0.1	0.0	2.6	1.7	0.0	1.2
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.32
Lane Grp Cap(c), veh/h	23	0	692	59	0	754	142	0	134	152	0	151
V/C Ratio(X)	0.48	0.00	0.90	0.54	0.00	0.69	0.04	0.00	0.61	0.39	0.00	0.27
Avail Cap(c_a), veh/h	147	0	776	154	0	804	236	0	222	197	0	196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	15.2	26.1	0.0	12.7	23.3	0.0	24.4	23.8	0.0	23.5
Incr Delay (d2), s/veh	15.1	0.0	12.9	7.4	0.0	2.4	0.1	0.0	4.5	1.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	11.2	0.6	0.0	6.9	0.1	0.0	1.4	0.9	0.0	0.6
LnGrp Delay(d),s/veh	42.0	0.0	28.1	33.4	0.0	15.1	23.4	0.0	28.9	25.4	0.0	24.5
LnGrp LOS	D		C	C		B	C		C	C		C
Approach Vol, veh/h		636			556			87			100	
Approach Delay, s/veh		28.4			16.2			28.6			25.0	
Approach LOS		C			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		10.2	5.9	28.3		10.5	4.8	29.4				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		7.3	5.0	25.2		6.1	5.0	25.2				
Max Q Clear Time (g_c+I1), s		4.6	3.0	21.0		3.7	2.4	15.3				
Green Ext Time (p_c), s		0.1	0.0	1.5		0.1	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			23.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

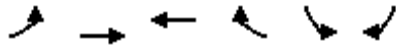
2040 Cumulative No Project (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	472	7	29	466	30	9	12	20	162	43	21
Future Volume (veh/h)	4	472	7	29	466	30	9	12	20	162	43	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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	4	513	8	32	507	33	10	13	22	176	47	23
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	9	630	10	63	677	44	142	146	175	364	69	29
Arrive On Green	0.01	0.38	0.38	0.04	0.41	0.41	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1616	1666	26	1691	1649	107	176	696	834	1028	328	140
Grp Volume(v), veh/h	4	0	521	32	0	540	45	0	0	246	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1705	0	0	1496	0	0
Q Serve(g_s), s	0.1	0.0	11.5	0.8	0.0	10.9	0.0	0.0	0.0	5.5	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	11.5	0.8	0.0	10.9	0.9	0.0	0.0	6.4	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	9	0	640	63	0	721	464	0	0	462	0	0
V/C Ratio(X)	0.46	0.00	0.81	0.51	0.00	0.75	0.10	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	194	0	982	203	0	1020	709	0	0	688	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.7	0.0	11.6	19.7	0.0	10.5	13.4	0.0	0.0	15.5	0.0	0.0
Incr Delay (d2), s/veh	32.8	0.0	3.1	6.3	0.0	1.9	0.1	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.9	0.5	0.0	5.6	0.4	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	53.4	0.0	14.8	25.9	0.0	12.4	13.4	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	D		B	C		B	B			B		
Approach Vol, veh/h		525			572			45			246	
Approach Delay, s/veh		15.0			13.2			13.4			16.4	
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		14.6	5.5	21.6		14.6	4.2	22.9				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		15.2	5.0	24.2		15.2	5.0	24.2				
Max Q Clear Time (g_c+1), s		2.9	2.8	13.5		8.4	2.1	12.9				
Green Ext Time (p_c), s		0.1	0.0	2.2		0.7	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			14.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 26: Las Palmas Ave/W Main Ave & Jennings Rd

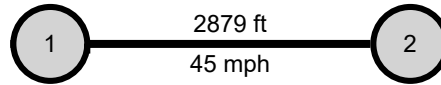
2040 Cumulative No Project (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	197	700	487	0	3	217		
Future Volume (veh/h)	197	700	487	0	3	217		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1712	1712	1810	1900	1863	1863		
Adj Flow Rate, veh/h	214	761	529	0	3	236		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	11	11	5	5	2	2		
Cap, veh/h	265	1022	635	0	284	511		
Arrive On Green	0.16	0.60	0.35	0.00	0.16	0.16		
Sat Flow, veh/h	1630	1712	1810	0	1774	1583		
Grp Volume(v), veh/h	214	761	529	0	3	236		
Grp Sat Flow(s),veh/h/ln	1630	1712	1810	0	1774	1583		
Q Serve(g_s), s	6.1	15.4	12.8	0.0	0.1	5.7		
Cycle Q Clear(g_c), s	6.1	15.4	12.8	0.0	0.1	5.7		
Prop In Lane	1.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	265	1022	635	0	284	511		
V/C Ratio(X)	0.81	0.74	0.83	0.00	0.01	0.46		
Avail Cap(c_a), veh/h	409	1403	878	0	341	562		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	19.3	7.0	14.2	0.0	16.9	12.9		
Incr Delay (d2), s/veh	6.7	1.4	5.0	0.0	0.0	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.2	7.4	7.2	0.0	0.0	5.3		
LnGrp Delay(d),s/veh	26.0	8.4	19.2	0.0	16.9	13.5		
LnGrp LOS	C	A	B		B	B		
Approach Vol, veh/h		975	529		239			
Approach Delay, s/veh		12.3	19.2		13.6			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				34.4		13.5	11.8	22.6
Change Period (Y+Rc), s				5.8		5.8	4.0	5.8
Max Green Setting (Gmax), s				39.2		9.2	12.0	23.2
Max Q Clear Time (g_c+I1), s				17.4		7.7	8.1	14.8
Green Ext Time (p_c), s				5.1		0.1	0.2	2.0
Intersection Summary								
HCM 2010 Ctrl Delay			14.6					
HCM 2010 LOS			B					

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1> 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	never
1	Shared Lane Spillback Time, h	never			never		never
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	45.63			46.06		
1	Running Speed, mph	43.02			42.62		
1	Through Delay, s/veh	11.76			50.05		
1	Travel Time, s	57.39			96.11		
1	Travel Speed, mph	34.20			20.43		
1	Stop Rate, stops/veh	0.64			0.89		
1	Spatial Stop Rate, stops/mi	1.17			1.64		
1	Through vol/cap Ratio	0.45			0.96		
1	Percent of Base FFS	75.58			43.84		
1	Level of Service	B			D		
1	Auto Traveler Perception Score	2.32			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	4.22	D
1	Bicycle Segment LOS Score / LOS	4.87	E	5.60	F
1	Transit Segment LOS Score / LOS	6.58	F	6.64	F

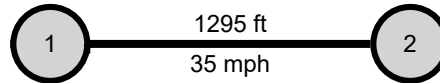
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		57.39		96.11	
Facility Travel Speed, mph		34.20		20.43	
Facility Base Free Flow Speed, mph		45.26		46.59	
Facility Percent of Base FFS		75.58		43.84	
Facility Level of Service		B		D	
Facility Auto Traveler Perception Score		2.32		2.39	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			4.22	D
Bicycle Facility LOS Score / LOS	4.87	E	5.60	F
Transit Facility LOS Score / LOS	6.58	F	6.64	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.13			25.89	
1	Running Speed, mph		33.79			34.11	
1	Through Delay, s/veh		1.43			23.98	
1	Travel Time, s		27.56			49.87	
1	Travel Speed, mph		32.04			17.71	
1	Stop Rate, stops/veh		0.42			0.82	
1	Spatial Stop Rate, stops/mi		1.72			3.35	
1	Through vol/cap Ratio		0.32			0.54	
1	Percent of Base FFS		84.31			46.45	
1	Level of Service		B			D	
1	Auto Traveler Perception Score		2.40			2.67	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.45	C	3.39	C
1	Bicycle Segment LOS Score / LOS	3.78	D	6.90	F
1	Transit Segment LOS Score / LOS	4.44	E	4.34	E

Facility Output Data

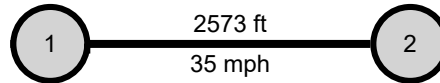
		Northbound		Southbound	
Facility Travel Time, s		27.56		49.87	
Facility Travel Speed, mph		32.04		17.71	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		84.31		46.45	
Facility Level of Service		B		D	
Facility Auto Traveler Perception Score		2.40		2.67	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.45	C	3.39	C
Bicycle Facility LOS Score / LOS	3.78	D	6.90	F
Transit Facility LOS Score / LOS	4.44	E	4.34	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2573	2573	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		40.75			40.62	
1	Running Time, s		47.05			45.17	
1	Running Speed, mph		37.28			38.84	
1	Through Delay, s/veh		1.20			0.27	
1	Travel Time, s		48.25			45.44	
1	Travel Speed, mph		36.36			38.61	
1	Stop Rate, stops/veh		0.02			0.01	
1	Spatial Stop Rate, stops/mi		0.03			0.02	
1	Through vol/cap Ratio		0.53			0.13	
1	Percent of Base FFS		89.22			95.05	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.15			2.14	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.86	D	3.47	C
1	Transit Segment LOS Score / LOS	4.75	E	4.44	E

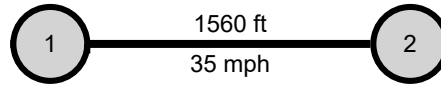
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	48.25		45.44
Facility Travel Speed, mph	36.36		38.61		
Facility Base Free Flow Speed, mph	40.75		40.62		
Facility Percent of Base FFS	89.22		95.05		
Facility Level of Service	A		A		
Facility Auto Traveler Perception Score	2.15		2.14		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.86	D	3.47	C
Transit Facility LOS Score / LOS	4.75	E	4.44	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward Ave	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	27.80			28.24		
1	Running Speed, mph	38.25			37.67		
1	Through Delay, s/veh	1.18			1.51		
1	Travel Time, s	28.98			29.74		
1	Travel Speed, mph	36.70			35.76		
1	Stop Rate, stops/veh	0.42			0.42		
1	Spatial Stop Rate, stops/mi	1.41			1.43		
1	Through vol/cap Ratio	0.05			0.37		
1	Percent of Base FFS	87.84			85.59		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.57			2.58		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.42	E	4.72	E
1	Transit Segment LOS Score / LOS	6.48	F	6.68	F

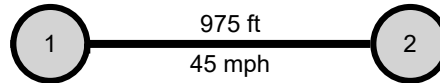
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	28.98	29.74	
Facility Travel Speed, mph	36.70	35.76			
Facility Base Free Flow Speed, mph	41.78	41.78			
Facility Percent of Base FFS	87.84	85.59			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.57	2.58			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.42	E	4.72
Transit Facility LOS Score / LOS	6.48	F	6.68

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	19.06			18.92		
1	Running Speed, mph	34.88			35.14		
1	Through Delay, s/veh	1.50			1.23		
1	Travel Time, s	20.56			20.15		
1	Travel Speed, mph	32.33			32.99		
1	Stop Rate, stops/veh	0.18			0.18		
1	Spatial Stop Rate, stops/mi	0.97			0.96		
1	Through vol/cap Ratio	0.85			0.77		
1	Percent of Base FFS	70.49			71.93		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.50			2.50		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.82	D	3.77	D
1	Transit Segment LOS Score / LOS	6.89	F	6.86	F

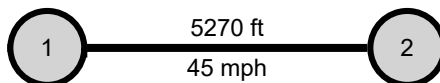
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		20.56		20.15	
Facility Travel Speed, mph		32.33		32.99	
Facility Base Free Flow Speed, mph		45.87		45.87	
Facility Percent of Base FFS		70.49		71.93	
Facility Level of Service		B		B	
Facility Auto Traveler Perception Score		2.50		2.50	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.82	D	3.77	D	
Transit Facility LOS Score / LOS	6.89	F	6.86	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave_AM.xus		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1> 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	84.11			82.33		
1	Running Speed, mph	42.72			43.64		
1	Through Delay, s/veh	19.99			27.06		
1	Travel Time, s	104.10			109.40		
1	Travel Speed, mph	34.52			32.85		
1	Stop Rate, stops/veh	0.56			0.77		
1	Spatial Stop Rate, stops/mi	0.56			0.77		
1	Through vol/cap Ratio	0.95			0.86		
1	Percent of Base FFS	76.45			72.75		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.22			2.25		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.95	D	4.30	E
1	Transit Segment LOS Score / LOS	6.76	F	6.65	F

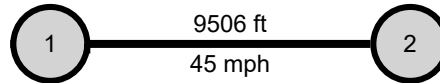
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	104.10		109.40
Facility Travel Speed, mph	34.52		32.85		
Facility Base Free Flow Speed, mph	45.15		45.15		
Facility Percent of Base FFS	76.45		72.75		
Facility Level of Service	B		B		
Facility Auto Traveler Perception Score	2.22		2.25		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.95	D	4.30	E
Transit Facility LOS Score / LOS	6.76	F	6.65	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	145.52			147.11		
1	Running Speed, mph	44.54			44.06		
1	Through Delay, s/veh	8.80			12.11		
1	Travel Time, s	154.31			159.22		
1	Travel Speed, mph	42.00			40.71		
1	Stop Rate, stops/veh	0.33			0.47		
1	Spatial Stop Rate, stops/mi	0.18			0.26		
1	Through vol/cap Ratio	0.36			0.92		
1	Percent of Base FFS	91.30			88.48		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.17			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.90	D	4.03	D
1	Transit Segment LOS Score / LOS	6.67	F	6.74	F

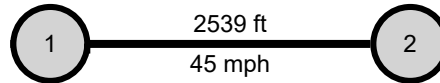
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	154.31	159.22	
Facility Travel Speed, mph	42.00	40.71			
Facility Base Free Flow Speed, mph	46.00	46.01			
Facility Percent of Base FFS	91.30	88.48			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.17	2.39			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.90	D	4.03
Transit Facility LOS Score / LOS	6.67	F	6.74

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_AM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0	

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	39.85			43.08		
1	Running Speed, mph	43.44			40.18		
1	Through Delay, s/veh	31.75			31.98		
1	Travel Time, s	71.61			75.06		
1	Travel Speed, mph	24.18			23.06		
1	Stop Rate, stops/veh	0.64			0.82		
1	Spatial Stop Rate, stops/mi	1.33			1.71		
1	Through vol/cap Ratio	0.34			0.96		
1	Percent of Base FFS	52.68			52.96		
1	Level of Service	C			C		
1	Auto Traveler Perception Score	2.34			2.40		

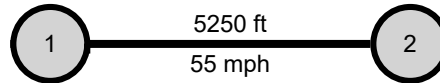
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	4.04	D	E
1	Transit Segment LOS Score / LOS	6.56	F	A

Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		71.61		75.06	
Facility Travel Speed, mph		24.18		23.06	
Facility Base Free Flow Speed, mph		45.89		43.54	
Facility Percent of Base FFS		52.68		52.96	
Facility Level of Service		C		C	
Facility Auto Traveler Perception Score		2.34		2.40	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.04	D	4.78	E
Transit Facility LOS Score / LOS	6.56	F	0.61	A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	72.49			80.39		
1	Running Speed, mph	49.38			44.53		
1	Through Delay, s/veh	8.38			0.00		
1	Travel Time, s	80.87			80.39		
1	Travel Speed, mph	44.26			44.53		
1	Stop Rate, stops/veh	0.51			0.00		
1	Spatial Stop Rate, stops/mi	0.51			0.00		
1	Through vol/cap Ratio	0.05			0.00		
1	Percent of Base FFS	88.48			98.24		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.66	E	6.00	F
1	Transit Segment LOS Score / LOS	6.51	F	0.37	A

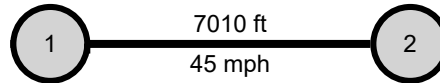
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	80.87	80.39	
Facility Travel Speed, mph	44.26	44.53			
Facility Base Free Flow Speed, mph	50.03	45.33			
Facility Percent of Base FFS	88.48	98.24			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.43	2.34			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.66	E	6.00
Transit Facility LOS Score / LOS	6.51	F	0.37

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR		Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	104.38			104.32		
1	Running Speed, mph	45.79			45.82		
1	Through Delay, s/veh	0.00			5.57		
1	Travel Time, s	104.38			109.89		
1	Travel Speed, mph	45.79			43.49		
1	Stop Rate, stops/veh	0.00			0.62		
1	Spatial Stop Rate, stops/mi	0.00			0.47		
1	Through vol/cap Ratio	0.00			0.13		
1	Percent of Base FFS	99.33			94.34		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.42		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.59	D	4.49	E
1	Transit Segment LOS Score / LOS	6.54	F	6.53	F

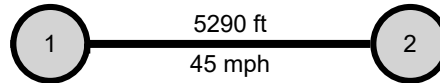
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		104.38		109.89	
Facility Travel Speed, mph		45.79		43.49	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		99.33		94.34	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.34		2.42	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.59	D	4.49	E	
Transit Facility LOS Score / LOS	6.54	F	6.53	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5290	5290	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	78.82			79.48		
1	Running Speed, mph	45.76			45.38		
1	Through Delay, s/veh	9.11			8.26		
1	Travel Time, s	87.93			87.74		
1	Travel Speed, mph	41.02			41.11		
1	Stop Rate, stops/veh	0.78			0.72		
1	Spatial Stop Rate, stops/mi	0.77			0.72		
1	Through vol/cap Ratio	0.19			0.45		
1	Percent of Base FFS	88.64			88.83		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.47			2.46		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.32	C	3.59	D
1	Transit Segment LOS Score / LOS	6.52	F	6.66	F

Facility Output Data

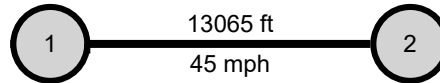
	Eastbound	Westbound
Facility Travel Time, s	87.93	87.74
Facility Travel Speed, mph	41.02	41.11
Facility Base Free Flow Speed, mph	46.28	46.28
Facility Percent of Base FFS	88.64	88.83
Facility Level of Service	A	A
Facility Auto Traveler Perception Score	2.47	2.46

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.32	C	3.59	D
Transit Facility LOS Score / LOS	6.52	F	6.66	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR		Analysis Year	2019	System Cycle Length, s	120
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1> 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.21			46.21		
1	Running Time, s	193.58			199.76		
1	Running Speed, mph	46.02			44.59		
1	Through Delay, s/veh	13.84			13.16		
1	Travel Time, s	207.43			212.93		
1	Travel Speed, mph	42.94			41.84		
1	Stop Rate, stops/veh	0.48			0.54		
1	Spatial Stop Rate, stops/mi	0.19			0.22		
1	Through vol/cap Ratio	0.12			0.80		
1	Percent of Base FFS	92.93			90.53		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.37			2.38		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.54	E	4.56	E
1	Transit Segment LOS Score / LOS	6.54	F	6.82	F

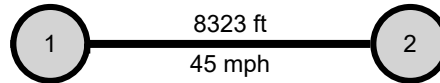
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	207.43	212.93	
Facility Travel Speed, mph	42.94	41.84			
Facility Base Free Flow Speed, mph	46.21	46.21			
Facility Percent of Base FFS	92.93	90.53			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.37	2.38			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.54	E	4.56
Transit Facility LOS Score / LOS	6.54	F	6.82

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

		Northbound			Southbound		
Segment Output Data		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		46.55			46.55	
1	Running Time, s		123.82			124.98	
1	Running Speed, mph		45.83			45.41	
1	Through Delay, s/veh		15.63			14.47	
1	Travel Time, s		139.46			139.45	
1	Travel Speed, mph		40.69			40.69	
1	Stop Rate, stops/veh		0.53			0.62	
1	Spatial Stop Rate, stops/mi		0.33			0.39	
1	Through vol/cap Ratio		0.43			0.71	
1	Percent of Base FFS		87.41			87.42	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.40			2.41	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.23	D	4.23	D
1	Transit Segment LOS Score / LOS	6.61	F	6.65	F

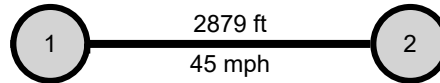
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		139.46		139.45	
Facility Travel Speed, mph		40.69		40.69	
Facility Base Free Flow Speed, mph		46.55		46.55	
Facility Percent of Base FFS		87.41		87.42	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.40		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.23	D	4.23	D	
Transit Facility LOS Score / LOS	6.61	F	6.65	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1> 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	46.90			45.70		
1	Running Speed, mph	41.85			42.95		
1	Through Delay, s/veh	11.75			37.42		
1	Travel Time, s	58.65			83.13		
1	Travel Speed, mph	33.47			23.61		
1	Stop Rate, stops/veh	0.53			0.83		
1	Spatial Stop Rate, stops/mi	0.98			1.53		
1	Through vol/cap Ratio	0.71			0.78		
1	Percent of Base FFS	73.96			50.68		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.29			2.37		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	4.12	D
1	Bicycle Segment LOS Score / LOS	4.99	E	4.98	E
1	Transit Segment LOS Score / LOS	6.74	F	6.61	F

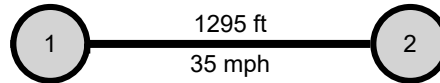
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	58.65		83.13
Facility Travel Speed, mph	33.47		23.61		
Facility Base Free Flow Speed, mph	45.26		46.59		
Facility Percent of Base FFS	73.96		50.68		
Facility Level of Service	B		C		
Facility Auto Traveler Perception Score	2.29		2.37		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			4.12	D
Bicycle Facility LOS Score / LOS	4.99	E	4.98	E
Transit Facility LOS Score / LOS	6.74	F	6.61	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		25.88			26.04	
1	Running Speed, mph		34.12			33.91	
1	Through Delay, s/veh		1.28			33.59	
1	Travel Time, s		27.15			59.62	
1	Travel Speed, mph		32.52			14.81	
1	Stop Rate, stops/veh		0.42			0.86	
1	Spatial Stop Rate, stops/mi		1.72			3.53	
1	Through vol/cap Ratio		0.17			0.81	
1	Percent of Base FFS		85.57			38.85	
1	Level of Service		A			E	
1	Auto Traveler Perception Score		2.40			2.70	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.32	C	3.48	C
1	Bicycle Segment LOS Score / LOS	3.72	D	6.91	F
1	Transit Segment LOS Score / LOS	4.38	E	4.37	E

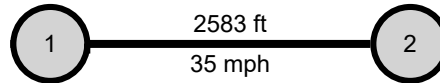
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		27.15		59.62	
Facility Travel Speed, mph		32.52		14.81	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		85.57		38.85	
Facility Level of Service		A		E	
Facility Auto Traveler Perception Score		2.40		2.70	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.32	C	3.48	C
Bicycle Facility LOS Score / LOS	3.72	D	6.91	F
Transit Facility LOS Score / LOS	4.38	E	4.37	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2583	2583	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		40.76			40.62	
1	Running Time, s		45.59			47.55	
1	Running Speed, mph		38.63			37.04	
1	Through Delay, s/veh		0.44			1.21	
1	Travel Time, s		46.03			48.76	
1	Travel Speed, mph		38.26			36.12	
1	Stop Rate, stops/veh		0.01			0.02	
1	Spatial Stop Rate, stops/mi		0.02			0.03	
1	Through vol/cap Ratio		0.23			0.54	
1	Percent of Base FFS		93.89			88.92	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.14			2.15	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.76	D	3.63	D
1	Transit Segment LOS Score / LOS	4.54	E	4.72	E

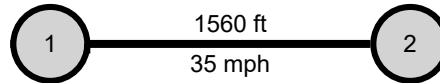
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		46.03		48.76	
Facility Travel Speed, mph		38.26		36.12	
Facility Base Free Flow Speed, mph		40.76		40.62	
Facility Percent of Base FFS		93.89		88.92	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.14		2.15	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.76	D	3.63	D	
Transit Facility LOS Score / LOS	4.54	E	4.72	E	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Cumulative No Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		41.78			41.78	
1	Running Time, s		28.20			27.84	
1	Running Speed, mph		37.72			38.21	
1	Through Delay, s/veh		1.49			1.20	
1	Travel Time, s		29.69			29.03	
1	Travel Speed, mph		35.83			36.63	
1	Stop Rate, stops/veh		0.42			0.42	
1	Spatial Stop Rate, stops/mi		1.43			1.42	
1	Through vol/cap Ratio		0.35			0.07	
1	Percent of Base FFS		85.75			87.69	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.58			2.57	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.79	E	4.41	E
1	Transit Segment LOS Score / LOS	6.68	F	6.50	F

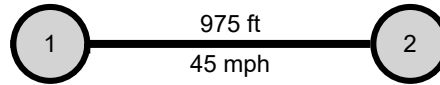
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		29.69		29.03	
Facility Travel Speed, mph		35.83		36.63	
Facility Base Free Flow Speed, mph		41.78		41.78	
Facility Percent of Base FFS		85.75		87.69	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.58		2.57	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.79	E	4.41	E	
Transit Facility LOS Score / LOS	6.68	F	6.50	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_P		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative No project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	18.69			19.10		
1	Running Speed, mph	35.58			34.81		
1	Through Delay, s/veh	0.97			1.57		
1	Travel Time, s	19.66			20.67		
1	Travel Speed, mph	33.82			32.16		
1	Stop Rate, stops/veh	0.18			0.18		
1	Spatial Stop Rate, stops/mi	0.98			0.98		
1	Through vol/cap Ratio	0.65			0.87		
1	Percent of Base FFS	73.73			70.11		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.50			2.50		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.69	D	3.83	D
1	Transit Segment LOS Score / LOS	6.81	F	6.90	F

Facility Output Data

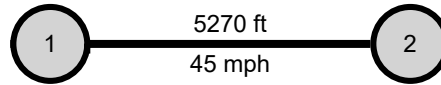
	Northbound	Southbound
Facility Travel Time, s	19.66	20.67
Facility Travel Speed, mph	33.82	32.16
Facility Base Free Flow Speed, mph	45.87	45.87
Facility Percent of Base FFS	73.73	70.11
Facility Level of Service	B	B
Facility Auto Traveler Perception Score	2.50	2.50

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.69	D	3.83	D
Transit Facility LOS Score / LOS	6.81	F	6.90	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave, Sycamore &		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1> 7:00	
Project Description	Cumulative No Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	83.39			82.30		
1	Running Speed, mph	43.09			43.66		
1	Through Delay, s/veh	14.57			11.88		
1	Travel Time, s	97.96			94.18		
1	Travel Speed, mph	36.68			38.15		
1	Stop Rate, stops/veh	0.59			0.56		
1	Spatial Stop Rate, stops/mi	0.59			0.56		
1	Through vol/cap Ratio	0.85			0.67		
1	Percent of Base FFS	81.24			84.50		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.23			2.22		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.94	D	4.30	E
1	Transit Segment LOS Score / LOS	6.72	F	6.65	F

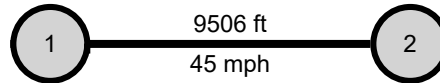
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	97.96		94.18
Facility Travel Speed, mph	36.68		38.15		
Facility Base Free Flow Speed, mph	45.15		45.15		
Facility Percent of Base FFS	81.24		84.50		
Facility Level of Service	B		B		
Facility Auto Traveler Perception Score	2.23		2.22		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.94	D	4.30	E
Transit Facility LOS Score / LOS	6.72	F	6.65	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative No Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	145.98			146.57		
1	Running Speed, mph	44.40			44.22		
1	Through Delay, s/veh	9.84			13.93		
1	Travel Time, s	155.82			160.50		
1	Travel Speed, mph	41.59			40.38		
1	Stop Rate, stops/veh	0.36			0.55		
1	Spatial Stop Rate, stops/mi	0.20			0.31		
1	Through vol/cap Ratio	0.48			0.86		
1	Percent of Base FFS	90.41			87.78		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.17			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.93	D	4.03	D
1	Transit Segment LOS Score / LOS	6.69	F	6.72	F

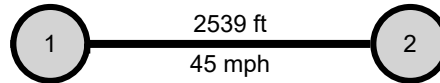
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	155.82	160.50	
Facility Travel Speed, mph	41.59	40.38			
Facility Base Free Flow Speed, mph	46.00	46.01			
Facility Percent of Base FFS	90.41	87.78			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.17	2.39			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.93	D	4.03
Transit Facility LOS Score / LOS	6.69	F	6.72

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_PM.xu		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative No Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	39.90			42.19		
1	Running Speed, mph	43.39			41.03		
1	Through Delay, s/veh	8.60			18.77		
1	Travel Time, s	48.49			60.96		
1	Travel Speed, mph	35.70			28.40		
1	Stop Rate, stops/veh	0.34			0.75		
1	Spatial Stop Rate, stops/mi	0.71			1.57		
1	Through vol/cap Ratio	0.24			0.86		
1	Percent of Base FFS	77.79			65.22		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.46			2.60		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.04	D	4.72	E
1	Transit Segment LOS Score / LOS	6.57	F	0.45	A

Facility Output Data

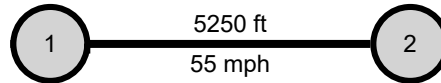
	Northbound	Southbound
Facility Travel Time, s	48.49	60.96
Facility Travel Speed, mph	35.70	28.40
Facility Base Free Flow Speed, mph	45.89	43.54
Facility Percent of Base FFS	77.79	65.22
Facility Level of Service	B	C
Facility Auto Traveler Perception Score	2.46	2.60

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.04	D	4.72	E
Transit Facility LOS Score / LOS	6.57	F	0.45	A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Cumulative No Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	72.58			79.85		
1	Running Speed, mph	49.32			44.83		
1	Through Delay, s/veh	8.55			0.00		
1	Travel Time, s	81.12			79.85		
1	Travel Speed, mph	44.13			44.83		
1	Stop Rate, stops/veh	0.52			0.00		
1	Spatial Stop Rate, stops/mi	0.52			0.00		
1	Through vol/cap Ratio	0.09			0.00		
1	Percent of Base FFS	88.20			98.90		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.79	E	5.79	F
1	Transit Segment LOS Score / LOS	6.54	F	0.24	A

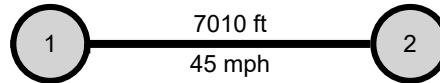
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	81.12	79.85	
Facility Travel Speed, mph	44.13	44.83			
Facility Base Free Flow Speed, mph	50.03	45.33			
Facility Percent of Base FFS	88.20	98.90			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.43	2.34			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.79	E	5.79
Transit Facility LOS Score / LOS	6.54	F	0.24

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	PM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Cumulative No Project Conditions				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	104.20			104.17		
1	Running Speed, mph	45.87			45.88		
1	Through Delay, s/veh	0.00			5.65		
1	Travel Time, s	104.20			109.83		
1	Travel Speed, mph	45.87			43.52		
1	Stop Rate, stops/veh	0.00			0.65		
1	Spatial Stop Rate, stops/mi	0.00			0.49		
1	Through vol/cap Ratio	0.00			0.09		
1	Percent of Base FFS	99.50			94.40		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.42		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.48	C	4.40	E
1	Transit Segment LOS Score / LOS	6.50	F	6.50	F

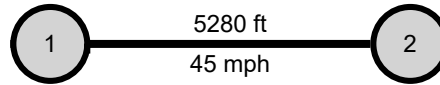
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		104.20		109.83	
Facility Travel Speed, mph		45.87		43.52	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		99.50		94.40	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.34		2.42	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.48	C	4.40	E	
Transit Facility LOS Score / LOS	6.50	F	6.50	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative No Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	78.63			78.51		
1	Running Speed, mph	45.78			45.85		
1	Through Delay, s/veh	7.91			8.77		
1	Travel Time, s	86.54			87.28		
1	Travel Speed, mph	41.60			41.25		
1	Stop Rate, stops/veh	0.78			0.86		
1	Spatial Stop Rate, stops/mi	0.78			0.86		
1	Through vol/cap Ratio	0.16			0.10		
1	Percent of Base FFS	89.89			89.13		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.47			2.48		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.28	C	3.15	C
1	Transit Segment LOS Score / LOS	6.51	F	6.48	F

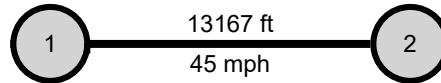
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	86.54	87.28	
Facility Travel Speed, mph	41.60	41.25			
Facility Base Free Flow Speed, mph	46.28	46.28			
Facility Percent of Base FFS	89.89	89.13			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.47	2.48			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.28	C	3.15 C
Transit Facility LOS Score / LOS	6.51	F	6.48 F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR		Analysis Year	2019	System Cycle Length, s	120
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative No Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13167	13167	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.22			46.22		
1	Running Time, s	194.96			198.75		
1	Running Speed, mph	46.05			45.17		
1	Through Delay, s/veh	13.70			9.44		
1	Travel Time, s	208.67			208.19		
1	Travel Speed, mph	43.02			43.12		
1	Stop Rate, stops/veh	0.48			0.63		
1	Spatial Stop Rate, stops/mi	0.19			0.25		
1	Through vol/cap Ratio	0.10			0.66		
1	Percent of Base FFS	93.09			93.30		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.37			2.38		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.53	E	4.53	E
1	Transit Segment LOS Score / LOS	6.52	F	6.75	F

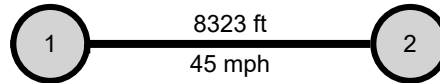
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		208.67		208.19	
Facility Travel Speed, mph		43.02		43.12	
Facility Base Free Flow Speed, mph		46.22		46.22	
Facility Percent of Base FFS		93.09		93.30	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.37		2.38	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.53	E	4.53	E	
Transit Facility LOS Score / LOS	6.52	F	6.75	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative No Project Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	123.63			125.19		
1	Running Speed, mph	45.90			45.33		
1	Through Delay, s/veh	15.31			15.42		
1	Travel Time, s	138.94			140.60		
1	Travel Speed, mph	40.84			40.36		
1	Stop Rate, stops/veh	0.58			0.63		
1	Spatial Stop Rate, stops/mi	0.37			0.40		
1	Through vol/cap Ratio	0.41			0.75		
1	Percent of Base FFS	87.74			86.70		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.40			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.20	D	4.23	D
1	Transit Segment LOS Score / LOS	6.60	F	6.66	F

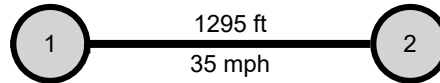
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		138.94		140.60	
Facility Travel Speed, mph		40.84		40.36	
Facility Base Free Flow Speed, mph		46.55		46.55	
Facility Percent of Base FFS		87.74		86.70	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.40		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.20	D	4.23	D	
Transit Facility LOS Score / LOS	6.60	F	6.66	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative No Project Conditions (Mitigated)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		never
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		25.88			26.04	
1	Running Speed, mph		34.12			33.91	
1	Through Delay, s/veh		1.27			31.77	
1	Travel Time, s		27.15			57.81	
1	Travel Speed, mph		32.52			15.27	
1	Stop Rate, stops/veh		0.42			0.86	
1	Spatial Stop Rate, stops/mi		1.72			3.50	
1	Through vol/cap Ratio		0.17			0.71	
1	Percent of Base FFS		85.58			40.07	
1	Level of Service		A			D	
1	Auto Traveler Perception Score		2.40			2.70	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.32	C	3.58	D
1	Bicycle Segment LOS Score / LOS	3.72	D	6.91	F
1	Transit Segment LOS Score / LOS	4.38	E	4.91	E

Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	27.15		57.81
Facility Travel Speed, mph	32.52		15.27		
Facility Base Free Flow Speed, mph	38.00		38.12		
Facility Percent of Base FFS	85.58		40.07		
Facility Level of Service	A		D		
Facility Auto Traveler Perception Score	2.40		2.70		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.32	C	3.58	D
Bicycle Facility LOS Score / LOS	3.72	D	6.91	F
Transit Facility LOS Score / LOS	4.38	E	4.91	E

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040NP
Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	5525	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1469	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	3115	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	3115	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	23.3	mi/h
Number of lanes, N	2	
Density, D	133.7	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040NP
Description: Patterson NW Annex Segment Analysis

-----Flow Inputs and Adjustments-----

Volume, V	4953	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1317	v
Trucks and buses	22	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, fp	1.00	
Flow rate, vp	2924	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2924	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	28.2	mi/h
Number of lanes, N	2	
Density, D	103.8	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040NP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	5117	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1361	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	3008	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	3008	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	28.3	mi/h
Number of lanes, N	2	
Density, D	106.2	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040NP
Description: Patterson NW Annex

Flow Inputs and Adjustments

Volume, V	4512	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1200	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2652	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

LOS and Performance Measures

Flow rate, vp	2652	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	42.8	mi/h
Number of lanes, N	2	
Density, D	62.0	pc/mi/ln
Level of service, LOS	F	

Phone: _____ Fax: _____
 E-mail: _____

----- Operational Analysis -----

Analyst: AMG
 Agency or Company:
 Date Performed: 8/23/2019
 Analysis Time Period: PM Peak Hour
 Freeway/Direction: I-5 Northbound
 From/To: North of Sperry Ave
 Jurisdiction: City of Patterson
 Analysis Year: 2040NP
 Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	4439	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1181	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, fp	1.00	
Flow rate, vp	2562	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2562	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	45.9	mi/h
Number of lanes, N	2	
Density, D	55.9	pc/mi/ln
Level of service, LOS	F	

Phone: _____ Fax: _____
 E-mail: _____

----- Operational Analysis -----

Analyst: AMG
 Agency or Company:
 Date Performed: 8/23/2019
 Analysis Time Period: PM Peak Hour
 Freeway/Direction: I-5 Southbound
 From/To: North of Sperry Ave
 Jurisdiction: City of Patterson
 Analysis Year: 2040NP
 Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	5311	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1413	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	2995	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	55.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	55.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2995	pc/h/ln
Free-flow speed, FFS	55.0	mi/h
Average passenger-car speed, S	19.7	mi/h
Number of lanes, N	2	
Density, D	151.7	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040NP
Description: Patterson NW Annex

----- Flow Inputs and Adjustments -----

Volume, V	4246	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1129	v
Trucks and buses	16	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.926	
Driver population factor, fp	1.00	
Flow rate, vp	2439	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	58.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	58.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2439	pc/h/ln
Free-flow speed, FFS	58.0	mi/h
Average passenger-car speed, S	47.2	mi/h
Number of lanes, N	2	
Density, D	51.7	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040NP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	5060	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1346	v
Trucks and buses	19	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.913	
Driver population factor, fp	1.00	
Flow rate, vp	2947	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2947	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	27.1	mi/h
Number of lanes, N	2	
Density, D	108.9	pc/mi/ln
Level of service, LOS	F	

TRAFFIC IMPACT STUDY FOR PROPOSED ZACHARIAS AND BALDWIN MASTER PLAN IN PATTERSON,
CALIFORNIA

Appendix F Intersection Analysis: 2040 cumulative plus project Conditions LOS Calculation Sheets
February 7, 2020

Appendix F **INTERSECTION ANALYSIS: 2040 CUMULATIVE PLUS
PROJECT CONDITIONS LOS CALCULATION SHEETS**

Intersection

Int Delay, s/veh 428.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	398	19	127	635	0	0	0	0	303	1	286
Future Vol, veh/h	0	398	19	127	635	0	0	0	0	303	1	286
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	14	0	0	0	0	0	20	4	2
Mvmt Flow	0	433	21	138	690	0	0	0	0	329	1	311

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	454	0	0		1410	1420	690
Stage 1	-	-	-	-	-	-		966	966	-
Stage 2	-	-	-	-	-	-		444	454	-
Critical Hdwy	-	-	-	4.24	-	-		6.6	6.54	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.6	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.6	5.54	-
Follow-up Hdwy	-	-	-	2.326	-	-		3.68	4.036	3.318
Pot Cap-1 Maneuver	0	-	-	1046	-	0		~ 139	135	445
Stage 1	0	-	-	-	-	0		343	330	-
Stage 2	0	-	-	-	-	0		610	566	-
Platoon blocked, %		-	-	-	-	-				
Mov Cap-1 Maneuver	-	-	-	1046	-	-		~ 109	0	445
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 109	0	-
Stage 1	-	-	-	-	-	-		343	0	-
Stage 2	-	-	-	-	-	-		479	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.5	\$ 1281.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1046	-	172
HCM Lane V/C Ratio	-	-	0.132	-	3.729
HCM Control Delay (s)	-	-	9	\$ 1281.7	
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.5	-	62.5

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	913.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	191	510	0	0	615	879	147	1	238	0	0	0
Future Vol, veh/h	191	510	0	0	615	879	147	1	238	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	8	0	0	10	20	0	20	20	0	0	0
Mvmt Flow	208	554	0	0	668	955	160	1	259	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	1623	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.2	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.29	-	-
Pot Cap-1 Maneuver	379	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	379	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	6.9	0	\$ 6095
HCM LOS			F
























Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	30	379	-	-	-
HCM Lane V/C Ratio	13.986	0.548	-	-	-
HCM Control Delay (s)	\$ 6095	25.4	0	-	-
HCM Lane LOS	F	D	A	-	-
HCM 95th %tile Q(veh)	51.7	3.2	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis 2040 Cumulative Plus Project (without Zach IC)

3: Sperry Ave & Rogers Rd

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	367	214	76	901	150	188	3	60	90	0	405
Future Volume (vph)	167	367	214	76	901	150	188	3	60	90	0	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	399	233	83	979	163	204	3	65	98	0	440
RTOR Reduction (vph)	0	0	96	0	0	45	0	0	56	0	0	180
Lane Group Flow (vph)	182	399	137	83	979	118	204	3	9	0	98	260
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	14.5	84.3	84.3	11.2	79.0	79.0	19.9	19.9	19.9		6.0	20.5
Effective Green, g (s)	14.5	84.3	84.3	11.2	79.0	79.0	19.9	19.9	19.9		6.0	20.5
Actuated g/C Ratio	0.10	0.59	0.59	0.08	0.55	0.55	0.14	0.14	0.14		0.04	0.14
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	168	1936	933	138	890	875	246	259	220		75	357
v/s Ratio Prot	c0.11	c0.12		0.05	c0.61		c0.12	0.00			c0.05	0.07
v/s Ratio Perm			0.09			0.07			0.01			0.03
v/c Ratio	1.08	0.21	0.15	0.60	1.10	0.14	0.83	0.01	0.04		1.31	0.73
Uniform Delay, d1	64.2	13.7	13.2	63.7	32.0	15.4	59.8	53.0	53.2		68.5	58.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	93.4	0.1	0.2	7.2	61.3	0.1	20.1	0.0	0.1		206.4	7.3
Delay (s)	157.6	13.8	13.3	70.9	93.3	15.5	79.9	53.0	53.3		274.8	65.8
Level of Service	F	B	B	E	F	B	E	D	D		F	E
Approach Delay (s)		45.8			81.4			73.3			103.9	
Approach LOS		D			F			E			F	
Intersection Summary												
HCM 2000 Control Delay			74.7				HCM 2000 Level of Service				E	
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			142.9				Sum of lost time (s)				23.5	
Intersection Capacity Utilization			88.3%				ICU Level of Service				E	
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 4: Park Center Dr & Sperry Ave Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑		↔	↑↑	↑	↔	↑		↔	↑	
Traffic Volume (veh/h)	120	497	7	8	532	15	167	51	24	14	10	89
Future Volume (veh/h)	120	497	7	8	532	15	167	51	24	14	10	89
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1583	1745	1900	1900	1827	1583	1900	1900	1900	1583	1611	1900
Adj Flow Rate, veh/h	130	540	8	9	578	16	182	55	26	15	11	97
Adj No. of Lanes	2	1	0	2	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	297	740	11	50	1193	462	398	311	147	392	36	318
Arrive On Green	0.10	0.43	0.43	0.01	0.34	0.34	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	2925	1715	25	3510	3471	1346	1306	1221	577	1115	142	1249
Grp Volume(v), veh/h	130	0	548	9	578	16	182	0	81	15	0	108
Grp Sat Flow(s),veh/h/ln	1463	0	1741	1755	1736	1346	1306	0	1798	1115	0	1390
Q Serve(g_s), s	2.0	0.0	12.8	0.1	6.4	0.4	6.4	0.0	1.7	0.5	0.0	3.1
Cycle Q Clear(g_c), s	2.0	0.0	12.8	0.1	6.4	0.4	9.5	0.0	1.7	2.2	0.0	3.1
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.32	1.00		0.90
Lane Grp Cap(c), veh/h	297	0	750	50	1193	462	398	0	458	392	0	354
V/C Ratio(X)	0.44	0.00	0.73	0.18	0.48	0.03	0.46	0.00	0.18	0.04	0.00	0.31
Avail Cap(c_a), veh/h	514	0	1326	430	2459	953	1051	0	1358	950	0	1050
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	11.6	23.9	12.7	10.7	18.6	0.0	14.2	15.1	0.0	14.8
Incr Delay (d2), s/veh	1.0	0.0	2.9	1.7	0.7	0.1	0.8	0.0	0.2	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	6.7	0.1	3.2	0.2	2.4	0.0	0.9	0.2	0.0	1.2
LnGrp Delay(d),s/veh	21.7	0.0	14.5	25.6	13.3	10.7	19.4	0.0	14.4	15.2	0.0	15.2
LnGrp LOS	C		B	C	B	B	B		B	B		B
Approach Vol, veh/h		678			603			263			123	
Approach Delay, s/veh		15.9			13.4			17.9			15.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	26.8		17.0	9.5	22.5		17.0				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	8.6	34.7		37.0				
Max Q Clear Time (g_c+1), s	14.8	14.8		5.1	4.0	8.4		11.5				
Green Ext Time (p_c), s	0.0	6.3		0.7	0.1	7.1		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			15.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 5: Baldwin Rd & Sperry Ave Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	125	339	46	10	521	83	67	561	20	318	207	93
Future Volume (veh/h)	125	339	46	10	521	83	67	561	20	318	207	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		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	1851	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	136	368	50	11	566	90	73	610	22	346	225	101
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	249	533	72	27	509	450	109	617	22	275	444	200
Arrive On Green	0.07	0.33	0.33	0.02	0.28	0.28	0.06	0.34	0.34	0.08	0.36	0.36
Sat Flow, veh/h	3476	1596	217	1660	1827	1615	1810	1822	66	3476	1243	558
Grp Volume(v), veh/h	136	0	418	11	566	90	73	0	632	346	0	326
Grp Sat Flow(s),veh/h/ln	1738	0	1813	1660	1827	1615	1810	0	1887	1738	0	1802
Q Serve(g_s), s	3.0	0.0	15.9	0.5	22.2	3.4	3.1	0.0	26.5	6.3	0.0	11.3
Cycle Q Clear(g_c), s	3.0	0.0	15.9	0.5	22.2	3.4	3.1	0.0	26.5	6.3	0.0	11.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.03	1.00		0.31
Lane Grp Cap(c), veh/h	249	0	605	27	509	450	109	0	639	275	0	644
V/C Ratio(X)	0.55	0.00	0.69	0.41	1.11	0.20	0.67	0.00	0.99	1.26	0.00	0.51
Avail Cap(c_a), veh/h	262	0	605	125	509	450	136	0	639	275	0	644
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	23.0	38.8	28.8	22.0	36.7	0.0	26.2	36.7	0.0	20.1
Incr Delay (d2), s/veh	1.0	0.0	4.3	19.7	74.4	0.5	4.7	0.0	32.6	142.8	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	1.5	0.0	8.6	0.4	21.5	1.6	1.7	0.0	19.5	8.4	0.0	5.7
LnGrp Delay(d),s/veh	36.8	0.0	27.3	58.5	103.1	22.4	41.4	0.0	58.8	179.5	0.0	20.7
LnGrp LOS	D		C	E	F	C	D		E	F		C
Approach Vol, veh/h		554			667			705			672	
Approach Delay, s/veh		29.6			91.5			57.0			102.5	
Approach LOS		C			F			E			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	5.5	32.1	9.0	33.1	9.9	27.7	10.5	31.6				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	22.2	* 6	27.3	* 6	22.2	* 6.3	27.0				
Max Q Clear Time (g_c+1), s	12.5	17.9	5.1	13.3	5.0	24.2	8.3	28.5				
Green Ext Time (p_c), s	0.0	1.5	0.0	1.6	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			71.8									
HCM 2010 LOS			E									
Notes												

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 6: American Eagle Ave & Sperry Ave Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	665	32	37	495	51	50	114	69	80	81	105
Future Volume (veh/h)	78	665	32	37	495	51	50	114	69	80	81	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1847	1900	1900	1846	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	85	723	35	40	538	55	54	124	75	87	88	114
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	180	1086	53	93	870	89	300	254	154	306	172	223
Arrive On Green	0.10	0.32	0.32	0.05	0.27	0.27	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	3408	165	1810	3214	328	1197	1109	671	1200	752	974
Grp Volume(v), veh/h	85	372	386	40	293	300	54	0	199	87	0	202
Grp Sat Flow(s),veh/h/ln	1810	1755	1818	1810	1754	1788	1197	0	1780	1200	0	1725
Q Serve(g_s), s	2.2	8.9	8.9	1.0	7.1	7.2	2.0	0.0	4.7	3.3	0.0	5.0
Cycle Q Clear(g_c), s	2.2	8.9	8.9	1.0	7.1	7.2	7.0	0.0	4.7	8.0	0.0	5.0
Prop In Lane	1.00		0.09	1.00		0.18	1.00		0.38	1.00		0.56
Lane Grp Cap(c), veh/h	180	559	579	93	475	484	300	0	408	306	0	395
V/C Ratio(X)	0.47	0.67	0.67	0.43	0.62	0.62	0.18	0.00	0.49	0.28	0.00	0.51
Avail Cap(c_a), veh/h	223	811	841	223	811	827	567	0	805	574	0	780
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	14.3	14.3	22.4	15.5	15.6	19.4	0.0	16.3	19.8	0.0	16.4
Incr Delay (d2), s/veh	1.9	1.9	1.9	3.1	1.9	1.9	0.3	0.0	0.9	0.5	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.5	4.7	0.6	3.7	3.7	0.7	0.0	2.4	1.1	0.0	2.5
LnGrp Delay(d),s/veh	22.6	16.3	16.2	25.5	17.4	17.4	19.7	0.0	17.2	20.3	0.0	17.4
LnGrp LOS	C	B	B	C	B	B	B		B	C		B
Approach Vol, veh/h		843			633			253			289	
Approach Delay, s/veh		16.9			17.9			17.7			18.3	
Approach LOS		B			B			B			B	
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	22.0		17.6	11.3	19.7		17.6				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	6.5	22.5		22.0	6.0	22.5		22.0				
Max Q Clear Time (g_c+1), s	10.9	10.9		10.0	4.2	9.2		9.0				
Green Ext Time (p_c), s	0.0	4.6		1.2	0.0	3.9		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				17.5								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 7: Ward Ave & Sperry Ave Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	588	20	135	503	126	19	93	97	154	127	41
Future Volume (veh/h)	132	588	20	135	503	126	19	93	97	154	127	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1843	1900	1881	1845	1900	1845	1872	1900	1881	1900	1900
Adj Flow Rate, veh/h	143	639	22	147	547	137	21	101	105	167	138	45
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
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	3	3	1	3	0	3	1	1	1	0	0
Cap, veh/h	147	909	31	187	949	435	50	171	178	206	553	457
Arrive On Green	0.08	0.26	0.26	0.10	0.27	0.27	0.03	0.20	0.20	0.11	0.29	0.29
Sat Flow, veh/h	1774	3453	119	1792	3505	1606	1757	835	868	1792	1900	1570
Grp Volume(v), veh/h	143	324	337	147	547	137	21	0	206	167	138	45
Grp Sat Flow(s),veh/h/ln	1774	1751	1820	1792	1752	1606	1757	0	1703	1792	1900	1570
Q Serve(g_s), s	5.8	12.1	12.1	5.8	9.8	4.9	0.8	0.0	7.9	6.6	4.0	1.5
Cycle Q Clear(g_c), s	5.8	12.1	12.1	5.8	9.8	4.9	0.8	0.0	7.9	6.6	4.0	1.5
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	147	461	479	187	949	435	50	0	349	206	553	457
V/C Ratio(X)	0.97	0.70	0.70	0.79	0.58	0.31	0.42	0.00	0.59	0.81	0.25	0.10
Avail Cap(c_a), veh/h	147	610	634	347	1561	715	146	0	801	228	977	808
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	24.1	24.1	31.6	22.8	21.0	34.5	0.0	26.0	31.2	19.6	18.7
Incr Delay (d2), s/veh	65.3	4.4	4.3	7.1	1.2	0.9	5.5	0.0	3.4	18.0	0.5	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	5.5	6.4	6.7	3.2	4.9	2.3	0.5	0.0	4.0	4.3	2.2	0.7
LnGrp Delay(d),s/veh	98.4	28.5	28.4	38.7	24.0	21.9	40.0	0.0	29.4	49.3	20.1	18.9
LnGrp LOS	F	C	C	D	C	C	D		C	D	C	B
Approach Vol, veh/h		804			831			227			350	
Approach Delay, s/veh		40.9			26.2			30.4			33.9	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	25.0	6.7	27.1	13.0	25.6	12.9	20.8				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	14.0	25.2	6.0	37.2	6.0	32.2	9.2	34.0				
Max Q Clear Time (g_c+1), s	17.8	14.1	2.8	6.0	7.8	11.8	8.6	9.9				
Green Ext Time (p_c), s	0.2	4.7	0.0	1.8	0.0	6.9	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			33.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 8: Del Puerto Ave & Sperry Ave Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	322	33	13	419	31	65	97	18	4	44	129
Future Volume (veh/h)	237	322	33	13	419	31	65	97	18	4	44	129
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1802	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	258	350	36	14	455	34	71	105	20	4	48	140
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	567	1735	177	697	1011	892	224	203	34	102	84	233
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	921	3136	321	1012	1827	1612	482	1066	176	14	440	1221
Grp Volume(v), veh/h	258	190	196	14	455	34	196	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	921	1712	1745	1012	1827	1612	1724	0	0	1674	0	0
Q Serve(g_s), s	8.6	2.1	2.1	0.3	5.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.1	2.1	2.1	2.4	5.5	0.4	3.5	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.18	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	567	947	965	697	1011	892	461	0	0	418	0	0
V/C Ratio(X)	0.45	0.20	0.20	0.02	0.45	0.04	0.43	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	714	1219	1243	858	1301	1148	1174	0	0	1183	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	4.2	4.2	4.8	4.9	3.8	13.6	0.0	0.0	13.7	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.2	0.2	0.0	0.7	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.0	1.0	0.1	2.8	0.2	1.9	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	10.3	4.4	4.4	4.8	5.6	3.8	14.2	0.0	0.0	14.5	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		644			503			196			192	
Approach Delay, s/veh		6.8			5.5			14.2			14.5	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.1		12.0		25.1		12.0				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.4		24.1		26.4		24.1				
Max Q Clear Time (g_c+1), s		16.1		5.5		7.5		5.9				
Green Ext Time (p_c), s		4.4		1.1		5.2		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				8.3								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	2555.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	155	181	68	41	153	59	130	403	53	30	277	249
Future Vol, veh/h	155	181	68	41	153	59	130	403	53	30	277	249
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	4	6	0	2	0	6	3	7	16	5	4
Mvmt Flow	168	197	74	45	166	64	141	438	58	33	301	271

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1231	1145	301	1252	1116	467	301	0	0	496	0	0
Stage 1	367	367	-	749	749	-	-	-	-	-	-	-
Stage 2	864	778	-	503	367	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.54	6.26	7.1	6.52	6.2	4.16	-	-	4.26	-	-
Critical Hdwy Stg 1	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.036	3.354	3.5	4.018	3.3	2.254	-	-	2.344	-	-
Pot Cap-1 Maneuver	~ 151	198	729	151	208	600	1238	-	-	999	-	0
Stage 1	644	619	-	407	419	-	-	-	-	-	-	0
Stage 2	343	404	-	555	622	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	~ 8	~ 160	729	-	168	600	1238	-	-	999	-	-
Mov Cap-2 Maneuver	~ 8	~ 160	-	-	168	-	-	-	-	-	-	-
Stage 1	542	594	-	342	352	-	-	-	-	-	-	-
Stage 2	~ 136	340	-	320	597	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, \$	9800.4				1.8		0.9	
HCM LOS	F							





















Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1238	-	-	20	-	600	999	-
HCM Lane V/C Ratio	0.114	-	-	21.957	-	0.107	0.033	-
HCM Control Delay (s)	8.3	0		\$ 9800.4	-	11.7	8.7	0
HCM Lane LOS	A	A	-	F	-	B	A	A
HCM 95th %tile Q(veh)	0.4	-	-	55.4	-	0.4	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
10: SR-33 & M St/Walnut Ave

2040 Cumulative Plus Project (without Zach IC)

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	173	69	165	147	22	101	255	185	73	565	96
Future Volume (veh/h)	30	173	69	165	147	22	101	255	185	73	565	96
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1583	1583	1900	1583	1583	1900
Adj Flow Rate, veh/h	33	188	75	179	160	24	110	277	201	79	614	104
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	224	160	64	239	213	32	133	324	235	107	479	81
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.09	0.38	0.38	0.07	0.36	0.36
Sat Flow, veh/h	1774	1268	506	1774	1583	238	1508	854	620	1508	1320	224
Grp Volume(v), veh/h	33	0	263	179	0	184	110	0	478	79	0	718
Grp Sat Flow(s),veh/h/ln	1774	0	1773	1774	0	1821	1508	0	1474	1508	0	1544
Q Serve(g_s), s	1.1	0.0	8.0	6.2	0.0	6.2	4.6	0.0	18.9	3.3	0.0	23.0
Cycle Q Clear(g_c), s	1.1	0.0	8.0	6.2	0.0	6.2	4.6	0.0	18.9	3.3	0.0	23.0
Prop In Lane	1.00		0.29	1.00		0.13	1.00		0.42	1.00		0.14
Lane Grp Cap(c), veh/h	224	0	224	239	0	245	133	0	560	107	0	560
V/C Ratio(X)	0.15	0.00	1.18	0.75	0.00	0.75	0.83	0.00	0.85	0.74	0.00	1.28
Avail Cap(c_a), veh/h	224	0	224	830	0	852	143	0	560	147	0	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	27.7	26.4	0.0	26.4	28.4	0.0	18.1	28.9	0.0	20.2
Incr Delay (d2), s/veh	0.1	0.0	116.1	1.8	0.0	1.7	27.4	0.0	11.7	6.6	0.0	140.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	11.1	3.2	0.0	3.2	2.9	0.0	9.4	1.6	0.0	31.5
LnGrp Delay(d),s/veh	24.8	0.0	143.8	28.2	0.0	28.2	55.8	0.0	29.7	35.4	0.0	160.9
LnGrp LOS	C		F	C		C	E		C	D		F
Approach Vol, veh/h		296			363			588			797	
Approach Delay, s/veh		130.5			28.2			34.6			148.4	
Approach LOS		F			C			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.2	8.5	29.0		13.7	9.6	27.9				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 8	6.2	22.8		29.7	6.0	23.0				
Max Q Clear Time (g_c+I1), s		10.0	5.3	20.9		8.2	6.6	25.0				
Green Ext Time (p_c), s		0.0	0.0	0.2		0.4	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			91.7									
HCM 2010 LOS			F									
Notes												

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 11: SR-33 & Las Palmas Ave Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	279	6	211	431	156	3	322	352	201	339	4
Future Volume (veh/h)	24	279	6	211	431	156	3	322	352	201	339	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.98	0.99		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1873	1900	1810	1900	1900	1900	1845	1900	1881	1810	1900
Adj Flow Rate, veh/h	26	303	7	229	468	170	3	350	383	218	368	4
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	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, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	242	421	10	405	619	514	406	493	437	311	1290	14
Arrive On Green	0.03	0.23	0.23	0.12	0.33	0.33	0.00	0.28	0.28	0.09	0.37	0.37
Sat Flow, veh/h	1723	1822	42	1723	1900	1576	1810	1752	1554	1792	3485	38
Grp Volume(v), veh/h	26	0	310	229	468	170	3	350	383	218	181	191
Grp Sat Flow(s),veh/h/ln	1723	0	1864	1723	1900	1576	1810	1752	1554	1792	1720	1803
Q Serve(g_s), s	0.7	0.0	9.9	6.1	14.2	5.3	0.1	11.6	15.2	5.3	4.8	4.8
Cycle Q Clear(g_c), s	0.7	0.0	9.9	6.1	14.2	5.3	0.1	11.6	15.2	5.3	4.8	4.8
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	242	0	431	405	619	514	406	493	437	311	637	667
V/C Ratio(X)	0.11	0.00	0.72	0.57	0.76	0.33	0.01	0.71	0.88	0.70	0.29	0.29
Avail Cap(c_a), veh/h	339	0	863	685	1261	1047	623	626	556	311	637	667
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	22.9	15.5	19.5	16.4	16.5	20.8	22.1	15.9	14.3	14.3
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.5	0.7	0.1	0.0	1.7	10.5	5.8	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	0.3	0.0	5.2	2.9	7.5	2.3	0.0	5.8	7.8	3.0	2.3	2.4
LnGrp Delay(d),s/veh	18.6	0.0	23.8	15.9	20.2	16.6	16.5	22.5	32.6	21.7	14.4	14.4
LnGrp LOS	B		C	B	C	B	B	C	C	C	B	B
Approach Vol, veh/h		336			867			736			590	
Approach Delay, s/veh		23.4			18.4			27.7			17.1	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	25.7	10.0	23.1	12.0	19.5	4.3	28.8				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	42.9	6.0	23.1	18.5	29.9	8.0	21.1				
Max Q Clear Time (g_c+I), s	12.7	16.2	7.3	17.2	8.1	11.9	2.1	6.8				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.5	0.0	0.3	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				21.5								
HCM 2010 LOS				C								

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕			↕			↖	↗
Traffic Vol, veh/h	85	224	157	30	109	282	43	387	11	172	823	18
Future Vol, veh/h	85	224	157	30	109	282	43	387	11	172	823	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	20	20	20	20	20	20
Mvmt Flow	92	243	171	33	118	307	47	421	12	187	895	20

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2003	1796	895	2007	1810	427	915	0	0	433	0	0
Stage 1	1269	1269	-	521	521	-	-	-	-	-	-	-
Stage 2	734	527	-	1486	1289	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.38	-	-	2.38	-	-
Pot Cap-1 Maneuver	~ 44	~ 80	339	44	~ 79	628	676	-	-	1037	-	-
Stage 1	206	~ 239	-	539	532	-	-	-	-	-	-	-
Stage 2	412	528	-	155	234	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 46	339	-	~ 45	628	676	-	-	1037	-	-
Mov Cap-2 Maneuver	-	~ 46	-	-	~ 45	-	-	-	-	-	-	-
Stage 1	187	~ 151	-	489	483	-	-	-	-	-	-	-
Stage 2	145	479	-	-	148	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					1		1.6	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	676	-	-	-	-	339	-	1037	-
HCM Lane V/C Ratio	0.069	-	-	-	-	0.503	-	0.18	-
HCM Control Delay (s)	10.7	0	-	-	-	25.9	-	9.2	0
HCM Lane LOS	B	A	-	-	-	D	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	-	-	2.7	-	0.7	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	2	99	17	8	52	5	113	1	10	2	1	0
Future Vol, veh/h	2	99	17	8	52	5	113	1	10	2	1	0
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	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	4	8	0	15	0	3	20	3	0	20	20
Mvmt Flow	2	108	18	9	57	5	123	1	11	2	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	62	0	0	126	0	0	199	201	117	205	208	60
Stage 1	-	-	-	-	-	-	121	121	-	78	78	-
Stage 2	-	-	-	-	-	-	78	80	-	127	130	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.13	6.7	6.23	7.1	6.7	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.7	-	6.1	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.7	-	6.1	5.7	-
Follow-up Hdwy	2.38	-	-	2.2	-	-	3.527	4.18	3.327	3.5	4.18	3.48
Pot Cap-1 Maneuver	1434	-	-	1473	-	-	757	664	932	757	658	957
Stage 1	-	-	-	-	-	-	881	762	-	936	796	-
Stage 2	-	-	-	-	-	-	928	795	-	882	755	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1434	-	-	1473	-	-	752	659	932	743	653	957
Mov Cap-2 Maneuver	-	-	-	-	-	-	752	659	-	743	653	-
Stage 1	-	-	-	-	-	-	880	761	-	935	791	-
Stage 2	-	-	-	-	-	-	921	790	-	869	754	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.9			10.6			10.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	752	898	1434	-	-	1473	-	-	710
HCM Lane V/C Ratio	0.163	0.013	0.002	-	-	0.006	-	-	0.005
HCM Control Delay (s)	10.7	9.1	7.5	-	-	7.5	-	-	10.1
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	8.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔		↕		↕		↕	↕	↕	↕	↕
Traffic Vol, veh/h	125	83	27	16	12	14	2	68	28	32	36	9
Future Vol, veh/h	125	83	27	16	12	14	2	68	28	32	36	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	0	4	0	20	20	4	13	0
Mvmt Flow	136	90	29	17	13	15	2	74	30	35	39	10

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	221	222	44	252	197	74	49	0	0	104	0	0
Stage 1	114	114	-	78	78	-	-	-	-	-	-	-
Stage 2	107	108	-	174	119	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.3	6.5	6.24	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.68	4	3.336	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	735	677	1026	666	702	982	1571	-	-	1475	-	-
Stage 1	891	801	-	888	834	-	-	-	-	-	-	-
Stage 2	898	806	-	788	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	700	660	1026	569	684	982	1571	-	-	1475	-	-
Mov Cap-2 Maneuver	700	660	-	569	684	-	-	-	-	-	-	-
Stage 1	890	782	-	887	833	-	-	-	-	-	-	-
Stage 2	869	805	-	661	782	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.9		10.2		0.1		3.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	711	569	982	1475	-	-
HCM Lane V/C Ratio	0.001	-	-	0.359	0.031	0.015	0.024	-	-
HCM Control Delay (s)	7.3	0	-	12.9	11.5	8.7	7.5	-	-
HCM Lane LOS	A	A	-	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	0.1	0	0.1	-	-

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	47	5	10	4	8	1	94	10	24	393	19
Future Vol, veh/h	29	47	5	10	4	8	1	94	10	24	393	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	8	8	8	18	18	18	16	16	16
Mvmt Flow	32	51	5	11	4	9	1	102	11	26	427	21

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	606	605	438	628	610	108	448	0	0	113	0	0
Stage 1	490	490	-	110	110	-	-	-	-	-	-	-
Stage 2	116	115	-	518	500	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.18	6.58	6.28	4.28	-	-	4.26	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.572	4.072	3.372	2.362	-	-	2.344	-	-
Pot Cap-1 Maneuver	409	412	619	387	401	930	1033	-	-	1394	-	-
Stage 1	560	549	-	881	793	-	-	-	-	-	-	-
Stage 2	889	800	-	530	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	394	401	619	339	391	930	1033	-	-	1394	-	-
Mov Cap-2 Maneuver	394	401	-	339	391	-	-	-	-	-	-	-
Stage 1	559	535	-	880	792	-	-	-	-	-	-	-
Stage 2	875	799	-	463	520	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	16.3		13.4			0.1		0.4		
HCM LOS	C		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1033	-	-	407	455	1394	-	-
HCM Lane V/C Ratio	0.001	-	-	0.216	0.053	0.019	-	-
HCM Control Delay (s)	8.5	0	-	16.3	13.4	7.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.2	0.1	-	-

Intersection	
Intersection Delay, s/veh	64.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	55	9	27	30	14	100	468	162	2	282	139
Future Vol, veh/h	7	55	9	27	30	14	100	468	162	2	282	139
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
Heavy Vehicles, %	2	2	2	8	8	8	9	9	9	14	14	14
Mvmt Flow	8	60	10	29	33	15	109	509	176	2	307	151
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	11.7	100.5	19.8
HCM LOS	B	B	F	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	10%	38%	0%
Vol Thru, %	64%	77%	42%	67%
Vol Right, %	22%	13%	20%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	730	71	71	423
LT Vol	100	7	27	2
Through Vol	468	55	30	282
RT Vol	162	9	14	139
Lane Flow Rate	793	77	77	460
Geometry Grp	1	1	1	1
Degree of Util (X)	1.141	0.148	0.151	0.682
Departure Headway (Hd)	5.176	7.271	7.384	5.636
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	706	496	489	644
Service Time	3.19	5.271	5.384	3.636
HCM Lane V/C Ratio	1.123	0.155	0.157	0.714
HCM Control Delay	100.5	11.5	11.7	19.8
HCM Lane LOS	F	B	B	C
HCM 95th-tile Q	24.4	0.5	0.5	5.3

Intersection						
Int Delay, s/veh	107.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	80	353	301	291	465	22
Future Vol, veh/h	80	353	301	291	465	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	11	14	14
Mvmt Flow	87	384	327	316	505	24

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1487	517	529	0	-	0
Stage 1	517	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	137	558	1043	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 85	558	1043	-	-	-
Mov Cap-2 Maneuver	~ 85	-	-	-	-	-
Stage 1	371	-	-	-	-	-
Stage 2	368	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	367.1	5.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1043	-	275	-	-
HCM Lane V/C Ratio	0.314	-	1.711	-	-
HCM Control Delay (s)	10		367.1	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	1.4	-	30.3	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	49.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	22	563	303	15	294	513
Future Vol, veh/h	22	563	303	15	294	513
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	11	11	14	14
Mvmt Flow	24	612	329	16	320	558

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1535	337	0	0	345
Stage 1	337	-	-	-	-
Stage 2	1198	-	-	-	-
Critical Hdwy	6.49	6.29	-	-	4.24
Critical Hdwy Stg 1	5.49	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-
Follow-up Hdwy	3.581	3.381	-	-	2.326
Pot Cap-1 Maneuver	123	689	-	-	1150
Stage 1	708	-	-	-	-
Stage 2	277	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	73	689	-	-	1150
Mov Cap-2 Maneuver	73	-	-	-	-
Stage 1	708	-	-	-	-
Stage 2	165	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	138.7	0	3.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	523	1150
HCM Lane V/C Ratio	-	-	1.216	0.278
HCM Control Delay (s)	-	-	138.7	9.3
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	24	1.1

Intersection						
Int Delay, s/veh	338.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	470	11	3	840	453	82
Future Vol, veh/h	470	11	3	840	453	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	1	11	14	14
Mvmt Flow	511	12	3	913	492	89

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1456	537	581	0	-	0
Stage 1	537	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.11	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.209	-	-	-
Pot Cap-1 Maneuver	~ 138	531	998	-	-	-
Stage 1	572	-	-	-	-	-
Stage 2	~ 378	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 137	531	998	-	-	-
Mov Cap-2 Maneuver	~ 137	-	-	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	~ 378	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	1307.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	998	-	139	-	-
HCM Lane V/C Ratio	0.003	-	3.761	-	-
HCM Control Delay (s)	8.6	\$	1307.8	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0	-	51.8	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	196.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	532	135	6	395	428	60
Future Vol, veh/h	532	135	6	395	428	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	14	14	18	18
Mvmt Flow	578	147	7	429	465	65

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	725	0	1095 652
Stage 1	-	-	-	-	652 -
Stage 2	-	-	-	-	443 -
Critical Hdwy	-	-	4.24	-	6.58 6.38
Critical Hdwy Stg 1	-	-	-	-	5.58 -
Critical Hdwy Stg 2	-	-	-	-	5.58 -
Follow-up Hdwy	-	-	2.326	-	3.662 3.462
Pot Cap-1 Maneuver	-	-	825	-	~ 220 441
Stage 1	-	-	-	-	490 -
Stage 2	-	-	-	-	615 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	825	-	~ 218 441
Mov Cap-2 Maneuver	-	-	-	-	~ 218 -
Stage 1	-	-	-	-	490 -
Stage 2	-	-	-	-	608 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	\$ 625.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	232	-	-	825	-
HCM Lane V/C Ratio	2.286	-	-	0.008	-
HCM Control Delay (s)	\$ 625.8	-	-	9.4	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	42	-	-	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	213.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	59	148	103	0	558	28	76	292	0	0	267	22
Future Vol, veh/h	59	148	103	0	558	28	76	292	0	0	267	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	64	161	112	0	607	30	83	317	0	0	290	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1104	785	302	922	797	317	314	0	0	317	0	0
Stage 1	302	302	-	483	483	-	-	-	-	-	-	-
Stage 2	802	483	-	439	314	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	183	318	724	244	~ 311	708	1246	-	-	1243	-	-
Stage 1	695	654	-	552	~ 541	-	-	-	-	-	-	-
Stage 2	369	543	-	583	644	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	292	724	110	~ 286	708	1246	-	-	1243	-	-
Mov Cap-2 Maneuver	-	292	-	110	~ 286	-	-	-	-	-	-	-
Stage 1	639	654	-	507	~ 497	-	-	-	-	-	-	-
Stage 2	-	499	-	372	644	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 564	1.7	0
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1246	-	-	-	294	1243	-
HCM Lane V/C Ratio	0.066	-	-	-	2.167	-	-
HCM Control Delay (s)	8.1	0	-	-	\$ 564	0	-
HCM Lane LOS	A	A	-	-	F	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	47.9	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	25	225	1	4	0	237	474	17	1	20	1
Future Vol, veh/h	25	25	225	1	4	0	237	474	17	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	27	27	245	1	4	0	258	515	18	1	22	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1067	1074	23	1201	1065	524	23	0	0	533	0	0
Stage 1	25	25	-	1040	1040	-	-	-	-	-	-	-
Stage 2	1042	1049	-	161	25	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	195	214	1037	156	216	540	1592	-	-	1035	-	-
Stage 1	978	863	-	270	299	-	-	-	-	-	-	-
Stage 2	270	297	-	825	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	157	164	1037	86	166	540	1592	-	-	1035	-	-
Mov Cap-2 Maneuver	157	164	-	86	166	-	-	-	-	-	-	-
Stage 1	752	862	-	208	230	-	-	-	-	-	-	-
Stage 2	204	228	-	610	860	-	-	-	-	-	-	-





















Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.9		31.8		2.5		0.4	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	520	140	1035	-	-
HCM Lane V/C Ratio	0.162	-	-	0.575	0.039	0.001	-	-
HCM Control Delay (s)	7.7	0	-	20.9	31.8	8.5	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	3.6	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

2040 Cumulative Plus Project (without Zach IC)

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	545	8	11	403	44	12	121	219	54	36	14
Future Volume (veh/h)	15	545	8	11	403	44	12	121	219	54	36	14
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	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	16	592	9	12	438	48	13	132	238	59	39	15
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	31	620	9	25	578	63	29	156	281	89	379	146
Arrive On Green	0.02	0.37	0.37	0.01	0.37	0.37	0.02	0.26	0.26	0.05	0.30	0.30
Sat Flow, veh/h	1616	1667	25	1691	1573	172	1774	597	1076	1774	1282	493
Grp Volume(v), veh/h	16	0	601	12	0	486	13	0	370	59	0	54
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1745	1774	0	1673	1774	0	1776
Q Serve(g_s), s	0.6	0.0	22.5	0.5	0.0	15.9	0.5	0.0	13.6	2.1	0.0	1.4
Cycle Q Clear(g_c), s	0.6	0.0	22.5	0.5	0.0	15.9	0.5	0.0	13.6	2.1	0.0	1.4
Prop In Lane	1.00		0.01	1.00		0.10	1.00		0.64	1.00		0.28
Lane Grp Cap(c), veh/h	31	0	629	25	0	642	29	0	437	89	0	525
V/C Ratio(X)	0.51	0.00	0.95	0.47	0.00	0.76	0.46	0.00	0.85	0.66	0.00	0.10
Avail Cap(c_a), veh/h	124	0	629	130	0	649	136	0	622	191	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	19.9	31.8	0.0	18.0	31.7	0.0	22.8	30.3	0.0	16.6
Incr Delay (d2), s/veh	12.4	0.0	25.1	13.1	0.0	5.1	10.9	0.0	7.5	8.0	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	0.4	0.0	14.7	0.3	0.0	8.5	0.3	0.0	7.2	1.2	0.0	0.7
LnGrp Delay(d),s/veh	44.0	0.0	45.0	44.9	0.0	23.1	42.6	0.0	30.2	38.4	0.0	16.7
LnGrp LOS	D		D	D		C	D		C	D		B
Approach Vol, veh/h		617			498			383			113	
Approach Delay, s/veh		45.0			23.6			30.7			28.0	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	22.8	5.0	30.0	5.0	25.0	5.3	29.7				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	7.0	24.2	5.0	24.2	5.0	26.2	5.0	24.2				
Max Q Clear Time (g_c+I1), s	4.1	15.6	2.5	24.5	2.5	3.4	2.6	17.9				
Green Ext Time (p_c), s	0.0	1.4	0.0	0.0	0.0	0.2	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			33.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 25: Elm Ave & Las Palmas Ave

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	465	5	17	555	58	59	59	152	184	19	22
Future Volume (veh/h)	2	465	5	17	555	58	59	59	152	184	19	22
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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	505	5	18	603	63	64	64	165	200	21	24
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	4	682	7	38	674	70	157	121	242	369	40	30
Arrive On Green	0.00	0.41	0.41	0.02	0.43	0.43	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1616	1677	17	1691	1581	165	267	483	968	938	158	119
Grp Volume(v), veh/h	2	0	510	18	0	666	293	0	0	245	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1693	1691	0	1747	1718	0	0	1216	0	0
Q Serve(g_s), s	0.1	0.0	12.4	0.5	0.0	17.2	0.0	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	12.4	0.5	0.0	17.2	7.3	0.0	0.0	9.2	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.22		0.56	0.82		0.10
Lane Grp Cap(c), veh/h	4	0	689	38	0	744	520	0	0	439	0	0
V/C Ratio(X)	0.45	0.00	0.74	0.48	0.00	0.89	0.56	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	166	0	808	174	0	833	813	0	0	665	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	12.3	23.5	0.0	12.9	16.5	0.0	0.0	17.0	0.0	0.0
Incr Delay (d2), s/veh	58.5	0.0	3.1	9.2	0.0	11.4	1.0	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.3	0.3	0.0	10.5	3.6	0.0	0.0	3.2	0.0	0.0
LnGrp Delay(d),s/veh	82.7	0.0	15.3	32.7	0.0	24.3	17.4	0.0	0.0	18.2	0.0	0.0
LnGrp LOS	F		B	C		C	B			B		
Approach Vol, veh/h		512			684			293			245	
Approach Delay, s/veh		15.6			24.5			17.4			18.2	
Approach LOS		B			C			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		18.0	5.1	25.6		18.0	4.1	26.5				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	23.2		21.2	5.0	23.2				
Max Q Clear Time (g_c+1), s		9.3	2.5	14.4		11.2	2.1	19.2				
Green Ext Time (p_c), s		1.2	0.0	1.9		1.0	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			19.8									
HCM 2010 LOS			B									

Intersection

Int Delay, s/veh 126.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	↗
Traffic Vol, veh/h	427	743	462	3	20	895
Future Vol, veh/h	427	743	462	3	20	895
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	5	5	2	2
Mvmt Flow	464	808	502	3	22	973

Major/Minor

	Major1	Major2	Minor2
Conflicting Flow All	505	0	0
Stage 1	-	-	504
Stage 2	-	-	1736
Critical Hdwy	4.21	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.299	-	3.518
Pot Cap-1 Maneuver	1015	-	46 ~ 568
Stage 1	-	-	607
Stage 2	-	-	156
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1015	-	25 ~ 568
Mov Cap-2 Maneuver	-	-	25
Stage 1	-	-	330
Stage 2	-	-	156

Approach

	EB	WB	SB
HCM Control Delay, s	4.2	0	\$ 346.9
HCM LOS			F

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1015	-	-	-	25	568
HCM Lane V/C Ratio	0.457	-	-	-	0.87	1.713
HCM Control Delay (s)	11.5	-	-	-	\$ 358.8	\$ 346.6
HCM Lane LOS	B	-	-	-	F	F
HCM 95th %tile Q(veh)	2.4	-	-	-	2.7	57

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	162.9
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	146	267	582	172	408	171
Future Vol, veh/h	146	267	582	172	408	171
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	159	290	633	187	443	186
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	37.6	274.8	106.7
HCM LOS	E	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	77%	35%	0%
Vol Thru, %	23%	0%	70%
Vol Right, %	0%	65%	30%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	754	413	579
LT Vol	582	146	0
Through Vol	172	0	408
RT Vol	0	267	171
Lane Flow Rate	820	449	629
Geometry Grp	1	1	1
Degree of Util (X)	1.547	0.826	1.13
Departure Headway (Hd)	7.062	7.638	7.214
Convergence, Y/N	Yes	Yes	Yes
Cap	525	476	510
Service Time	5.062	5.638	5.214
HCM Lane V/C Ratio	1.562	0.943	1.233
HCM Control Delay	274.8	37.6	106.7
HCM Lane LOS	F	E	F
HCM 95th-tile Q	41.9	8	19.2

Intersection												
Intersection Delay, s/veh88.9												
Intersection LOS F												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	383	384	100	653	0	36	0	30	0	0	0
Future Vol, veh/h	0	383	384	100	653	0	36	0	30	0	0	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	416	417	109	710	0	39	0	33	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	82	102.8	11.4	0
HCM LOS	F	F	B	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	55%	0%	13%	0%
Vol Thru, %	0%	50%	87%	100%
Vol Right, %	45%	50%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	767	753	0
LT Vol	36	0	100	0
Through Vol	0	383	653	0
RT Vol	30	384	0	0
Lane Flow Rate	72	834	818	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0.137	1.092	1.147	0
Departure Headway (Hd)	7.282	4.922	5.204	7.872
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	496	742	704	0
Service Time	5.282	2.922	3.204	5.872
HCM Lane V/C Ratio	0.145	1.124	1.162	0
HCM Control Delay	11.4	82	102.8	10.9
HCM Lane LOS	B	F	F	N
HCM 95th-tile Q	0.5	22	24.7	0

Intersection												
Int Delay, s/veh	932.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	97	29	364	150	0	0	0	0	632	1	124
Future Vol, veh/h	0	97	29	364	150	0	0	0	0	632	1	124
Conflicting Peds, #/hr	0	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	20	20	17	0	0	0	0	20	20	17
Mvmt Flow	0	105	32	396	163	0	0	0	0	687	1	135

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	137	0	0		1076	1092	163
Stage 1	-	-	-	-	-	-		955	955	-
Stage 2	-	-	-	-	-	-		121	137	-
Critical Hdwy	-	-	-	4.3	-	-		6.6	6.7	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-		5.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.6	5.7	-
Follow-up Hdwy	-	-	-	2.38	-	-		3.68	4.18	3.453
Pot Cap-1 Maneuver	0	-	-	1343	-	0		~ 224	199	844
Stage 1	0	-	-	-	-	0		~ 347	314	-
Stage 2	0	-	-	-	-	0		862	750	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	1343	-	-		~ 151	0	844
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 151	0	-
Stage 1	-	-	-	-	-	-		~ 347	0	-
Stage 2	-	-	-	-	-	-		~ 583	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.2	\$ 1717.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1343	-	175
HCM Lane V/C Ratio	-	-	0.295	-	4.702
HCM Control Delay (s)	-	-	8.8	\$ 1717.1	
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	1.2	-	84.6

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	124.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	92	637	0	0	484	486	30	3	591	0	0	0
Future Vol, veh/h	92	637	0	0	484	486	30	3	591	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	16	0	0	20	10	0	0	16	0	0	0
Mvmt Flow	100	692	0	0	526	528	33	3	642	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	1054	0	0
Stage 1	-	-	892
Stage 2	-	-	790
Critical Hdwy	4.1	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	668	0	105
Stage 1	-	0	404
Stage 2	-	0	451
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	668	-	79
Mov Cap-2 Maneuver	-	-	79
Stage 1	-	-	306
Stage 2	-	-	451

Approach	EB	WB	NB
HCM Control Delay, s	1.4	0	\$ 462.7
HCM LOS			F
























Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	348	668	-	-	-
HCM Lane V/C Ratio	1.949	0.15	-	-	-
HCM Control Delay (s)	\$ 462.7	11.3	0	-	-
HCM Lane LOS	F	B	A	-	-
HCM 95th %tile Q(veh)	46.7	0.5	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis 2040 Cumulative Plus Project (without Zach IC)

3: Sperry Ave & Rogers Rd

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	436	525	267	113	483	192	278	8	117	139	0	209
Future Volume (vph)	436	525	267	113	483	192	278	8	117	139	0	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	3008	1583	1770	1652	1547	1770	1863	1583		1736	2632
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1656	3008	1583	1770	1652	1547	1770	1863	1583		1736	2632
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	474	571	290	123	525	209	302	9	127	151	0	227
RTOR Reduction (vph)	0	0	147	0	0	117	0	0	106	0	0	123
Lane Group Flow (vph)	474	571	143	123	525	92	302	9	21	0	151	104
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	9%	20%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	36.5	66.4	66.4	14.1	42.0	42.0	22.0	22.0	22.0		11.0	47.5
Effective Green, g (s)	36.5	66.4	66.4	14.1	42.0	42.0	22.0	22.0	22.0		11.0	47.5
Actuated g/C Ratio	0.27	0.49	0.49	0.10	0.31	0.31	0.16	0.16	0.16		0.08	0.35
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	447	1479	778	184	513	481	288	303	257		141	926
v/s Ratio Prot	c0.29	0.19		0.07	c0.32		c0.17	0.00			c0.09	0.03
v/s Ratio Perm			0.09			0.06			0.01			0.01
v/c Ratio	1.06	0.39	0.18	0.67	1.02	0.19	1.05	0.03	0.08		1.07	0.11
Uniform Delay, d1	49.2	21.5	19.2	58.2	46.5	34.1	56.5	47.5	47.9		62.0	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	59.5	0.4	0.2	8.9	45.8	0.2	66.3	0.0	0.1		96.0	0.1
Delay (s)	108.7	21.9	19.4	67.1	92.3	34.3	122.8	47.6	48.1		158.0	29.6
Level of Service	F	C	B	E	F	C	F	D	D		F	C
Approach Delay (s)		52.2			74.5			99.6			80.9	
Approach LOS		D			E			F			F	
Intersection Summary												
HCM 2000 Control Delay			69.1									E
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			135.0							23.5		
Intersection Capacity Utilization			86.2%									E
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 4: Park Center Dr & Sperry Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗		↔	↕	↖	↔	↗		↔	↗	
Traffic Volume (veh/h)	198	558	86	10	550	70	21	64	32	122	71	272
Future Volume (veh/h)	198	558	86	10	550	70	21	64	32	122	71	272
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1583	1762	1900	1900	1827	1583	1900	1900	1900	1583	1640	1900
Adj Flow Rate, veh/h	215	607	93	11	598	76	23	70	35	133	77	296
Adj No. of Lanes	2	1	0	2	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	291	694	106	58	1330	509	171	369	185	392	92	352
Arrive On Green	0.10	0.47	0.47	0.02	0.38	0.38	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	2925	1488	228	3510	3471	1329	1025	1196	598	1091	297	1141
Grp Volume(v), veh/h	215	0	700	11	598	76	23	0	105	133	0	373
Grp Sat Flow(s),veh/h/ln	1463	0	1717	1755	1736	1329	1025	0	1794	1091	0	1438
Q Serve(g_s), s	5.0	0.0	25.9	0.2	9.0	2.6	1.5	0.0	3.0	7.2	0.0	17.0
Cycle Q Clear(g_c), s	5.0	0.0	25.9	0.2	9.0	2.6	18.6	0.0	3.0	10.2	0.0	17.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.33	1.00		0.79
Lane Grp Cap(c), veh/h	291	0	800	58	1330	509	171	0	554	392	0	444
V/C Ratio(X)	0.74	0.00	0.88	0.19	0.45	0.15	0.13	0.00	0.19	0.34	0.00	0.84
Avail Cap(c_a), veh/h	336	0	909	299	1735	664	393	0	943	629	0	756
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	0.0	17.0	34.2	16.2	14.2	31.4	0.0	17.9	21.6	0.0	22.7
Incr Delay (d2), s/veh	7.2	0.0	10.1	1.6	0.5	0.3	0.4	0.0	0.2	0.5	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	14.3	0.1	4.4	1.0	0.4	0.0	1.5	2.2	0.0	7.3
LnGrp Delay(d),s/veh	38.0	0.0	27.0	35.7	16.7	14.5	31.7	0.0	18.0	22.1	0.0	27.0
LnGrp LOS	D		C	D	B	B	C		B	C		C
Approach Vol, veh/h		915			685			128			506	
Approach Delay, s/veh		29.6			16.8			20.5			25.8	
Approach LOS		C			B			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	5.7	38.5		26.2	11.5	32.7		26.2				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	8.1	35.2		37.0				
Max Q Clear Time (g_c+1), s	12.2	27.9		19.0	7.0	11.0		20.6				
Green Ext Time (p_c), s	0.0	4.9		2.7	0.1	7.6		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			24.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 5: Baldwin Rd & Sperry Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T		T	T	T	T	T		TT	T	
Traffic Volume (veh/h)	174	502	120	11	482	163	90	325	12	258	480	72
Future Volume (veh/h)	174	502	120	11	482	163	90	325	12	258	480	72
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1841	1900	1900	1792	1863	1900	1810	1900	1827	1895	1900
Adj Flow Rate, veh/h	189	546	130	12	524	177	98	353	13	280	522	78
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	4	4	0	6	2	0	5	5	4	0	0
Cap, veh/h	249	565	135	31	604	533	121	508	19	345	529	79
Arrive On Green	0.08	0.39	0.39	0.02	0.34	0.34	0.07	0.29	0.29	0.10	0.33	0.33
Sat Flow, veh/h	3312	1431	341	1810	1792	1583	1810	1734	64	3375	1612	241
Grp Volume(v), veh/h	189	0	676	12	524	177	98	0	366	280	0	600
Grp Sat Flow(s),veh/h/ln	1656	0	1772	1810	1792	1583	1810	0	1798	1688	0	1853
Q Serve(g_s), s	5.4	0.0	35.7	0.6	26.2	8.0	5.1	0.0	17.3	7.8	0.0	30.8
Cycle Q Clear(g_c), s	5.4	0.0	35.7	0.6	26.2	8.0	5.1	0.0	17.3	7.8	0.0	30.8
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.04	1.00		0.13
Lane Grp Cap(c), veh/h	249	0	700	31	604	533	121	0	526	345	0	608
V/C Ratio(X)	0.76	0.00	0.97	0.39	0.87	0.33	0.81	0.00	0.70	0.81	0.00	0.99
Avail Cap(c_a), veh/h	249	0	700	113	683	604	121	0	526	346	0	608
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.4	0.0	28.3	46.6	29.8	23.7	44.1	0.0	30.1	42.1	0.0	32.0
Incr Delay (d2), s/veh	11.4	0.0	26.1	16.0	12.2	0.8	30.5	0.0	4.0	12.8	0.0	33.2
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	2.8	0.0	22.5	0.5	15.0	3.6	3.6	0.0	9.1	4.2	0.0	21.3
LnGrp Delay(d),s/veh	54.9	0.0	54.5	62.6	42.0	24.5	74.5	0.0	34.0	54.9	0.0	65.2
LnGrp LOS	D		D	E	D	C	E		C	D		E
Approach Vol, veh/h		865			713			464			880	
Approach Delay, s/veh		54.6			38.0			42.6			61.9	
Approach LOS		D			D			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	5.8	43.3	10.6	36.0	11.4	37.7	14.0	32.6				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	37.7	* 6.4	31.4	* 7.2	36.5	* 9.8	28.0				
Max Q Clear Time (g_c+I), s	12.6	37.7	7.1	32.8	7.4	28.2	9.8	19.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.0	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			50.8									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 6: American Eagle Ave & Sperry Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	587	36	83	673	89	10	32	22	38	28	35
Future Volume (veh/h)	93	587	36	83	673	89	10	32	22	38	28	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1814	1900	1863	1885	1900	1881	1900	1900
Adj Flow Rate, veh/h	101	638	39	90	732	97	11	35	24	41	30	38
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	173	1221	75	158	1100	146	260	117	80	269	86	109
Arrive On Green	0.10	0.37	0.37	0.09	0.36	0.36	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	3345	204	1757	3059	405	1312	1026	704	1335	757	959
Grp Volume(v), veh/h	101	333	344	90	412	417	11	0	59	41	0	68
Grp Sat Flow(s),veh/h/ln	1810	1749	1800	1757	1723	1741	1312	0	1730	1335	0	1715
Q Serve(g_s), s	2.4	6.8	6.8	2.2	9.1	9.1	0.4	0.0	1.4	1.3	0.0	1.7
Cycle Q Clear(g_c), s	2.4	6.8	6.8	2.2	9.1	9.1	2.0	0.0	1.4	2.7	0.0	1.7
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	173	639	657	158	619	626	260	0	197	269	0	195
V/C Ratio(X)	0.59	0.52	0.52	0.57	0.67	0.67	0.04	0.00	0.30	0.15	0.00	0.35
Avail Cap(c_a), veh/h	260	852	876	253	839	847	750	0	842	767	0	835
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.6	11.3	11.3	19.7	12.2	12.2	19.4	0.0	18.4	19.6	0.0	18.5
Incr Delay (d2), s/veh	3.1	0.9	0.9	3.2	1.8	1.7	0.1	0.0	0.8	0.3	0.0	1.1
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	1.4	3.4	3.5	1.2	4.5	4.6	0.1	0.0	0.7	0.5	0.0	0.8
LnGrp Delay(d),s/veh	22.7	12.2	12.2	22.9	13.9	13.9	19.5	0.0	19.2	19.9	0.0	19.6
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		778			919			70			109	
Approach Delay, s/veh		13.6			14.8			19.3			19.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	23.0		11.6	10.8	22.7		11.6				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.0	22.0		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+I), s	11.2	8.8		4.7	4.4	11.1		4.0				
Green Ext Time (p_c), s	0.0	4.4		0.4	0.0	5.0		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			14.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 7: Ward Ave & Sperry Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	367	48	268	423	132	29	107	82	148	357	55
Future Volume (veh/h)	138	367	48	268	423	132	29	107	82	148	357	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1795	1900	1792	1827	1845	1900	1827	1900	1900	1863	1776
Adj Flow Rate, veh/h	150	399	52	291	460	143	32	116	89	161	388	60
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
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, %	0	4	4	6	4	3	0	4	4	0	2	7
Cap, veh/h	166	580	75	333	977	435	70	199	153	198	518	412
Arrive On Green	0.09	0.19	0.19	0.19	0.28	0.28	0.04	0.21	0.21	0.11	0.28	0.28
Sat Flow, veh/h	1810	3029	392	1707	3471	1546	1810	960	736	1810	1863	1482
Grp Volume(v), veh/h	150	223	228	291	460	143	32	0	205	161	388	60
Grp Sat Flow(s),veh/h/ln	1810	1705	1716	1707	1736	1546	1810	0	1696	1810	1863	1482
Q Serve(g_s), s	6.3	9.3	9.4	12.6	8.4	5.6	1.3	0.0	8.3	6.6	14.5	2.3
Cycle Q Clear(g_c), s	6.3	9.3	9.4	12.6	8.4	5.6	1.3	0.0	8.3	6.6	14.5	2.3
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	166	326	329	333	977	435	70	0	352	198	518	412
V/C Ratio(X)	0.90	0.68	0.69	0.87	0.47	0.33	0.46	0.00	0.58	0.81	0.75	0.15
Avail Cap(c_a), veh/h	166	492	495	403	1457	649	145	0	756	199	887	706
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	28.7	28.7	29.8	22.7	21.7	35.8	0.0	27.2	33.2	25.1	20.7
Incr Delay (d2), s/veh	43.0	5.3	5.5	16.4	0.8	0.9	4.6	0.0	3.2	21.9	4.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.8	4.9	7.4	4.1	2.5	0.7	0.0	4.2	4.5	8.1	1.0
LnGrp Delay(d),s/veh	77.2	34.0	34.2	46.2	23.4	22.6	40.4	0.0	30.5	55.0	29.7	21.0
LnGrp LOS	E	C	C	D	C	C	D		C	E	C	C
Approach Vol, veh/h		601			894			237			609	
Approach Delay, s/veh		44.9			30.7			31.8			35.5	
Approach LOS		D			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.9	20.6	7.6	27.2	14.0	27.5	12.9	21.8				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	18.0	22.0	6.1	36.3	7.0	32.0	8.4	34.0				
Max Q Clear Time (g_c+1/4), s	11.6	11.4	3.3	16.5	8.3	10.4	8.6	10.3				
Green Ext Time (p_c), s	0.3	3.1	0.0	4.6	0.0	6.1	0.0	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			35.7									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 8: Del Puerto Ave & Sperry Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	338	76	32	501	20	39	38	6	3	59	148
Future Volume (veh/h)	189	338	76	32	501	20	39	38	6	3	59	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	0.99		0.96	0.98		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1826	1900	1900	1759	1900	1900	1882	1900	1900	1874	1900
Adj Flow Rate, veh/h	205	367	83	35	545	22	42	41	7	3	64	161
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	479	1564	350	646	977	894	249	204	27	93	99	241
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	840	2817	630	954	1759	1611	565	988	131	7	477	1163
Grp Volume(v), veh/h	205	224	226	35	545	22	90	0	0	228	0	0
Grp Sat Flow(s),veh/h/ln	840	1734	1712	954	1759	1611	1684	0	0	1647	0	0
Q Serve(g_s), s	8.3	2.6	2.7	0.8	8.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.3	2.6	2.7	3.5	8.0	0.2	1.6	0.0	0.0	5.1	0.0	0.0
Prop In Lane	1.00		0.37	1.00		1.00	0.47		0.08	0.01		0.71
Lane Grp Cap(c), veh/h	479	963	951	646	977	894	481	0	0	432	0	0
V/C Ratio(X)	0.43	0.23	0.24	0.05	0.56	0.02	0.19	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	570	1150	1136	749	1167	1068	1046	0	0	1079	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.0	4.5	4.5	5.4	5.7	4.0	13.2	0.0	0.0	14.6	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.3	0.3	0.1	1.1	0.0	0.2	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.3	1.3	0.2	4.1	0.1	0.8	0.0	0.0	2.4	0.0	0.0
LnGrp Delay(d),s/veh	12.3	4.8	4.8	5.5	6.8	4.0	13.4	0.0	0.0	15.6	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		655			602			90			228	
Approach Delay, s/veh		7.1			6.6			13.4			15.6	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.8		13.2		26.8		13.2				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.5		24.0		26.5		24.0				
Max Q Clear Time (g_c+I1), s		18.3		3.6		10.0		7.1				
Green Ext Time (p_c), s		3.9		0.4		6.1		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				8.5								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	488.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	201	138	161	21	76	9	161	390	70	21	259	190
Future Vol, veh/h	201	138	161	21	76	9	161	390	70	21	259	190
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	4	0	14	9	8	4	6	12	0	12	10
Mvmt Flow	218	150	175	23	83	10	175	424	76	23	282	207

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1188	1178	282	1303	1140	463	282	0	0	500	0	0
Stage 1	328	328	-	812	812	-	-	-	-	-	-	-
Stage 2	860	850	-	491	328	-	-	-	-	-	-	-
Critical Hdwy	7.2	6.54	6.2	7.24	6.59	6.28	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.59	4.036	3.3	3.626	4.081	3.372	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 159	189	762	130	195	587	1269	-	-	1075	-	0
Stage 1	668	643	-	356	382	-	-	-	-	-	-	0
Stage 2	340	374	-	537	635	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 76	~ 149	762	-	153	586	1269	-	-	1075	-	-
Mov Cap-2 Maneuver	~ 76	~ 149	-	-	153	-	-	-	-	-	-	-
Stage 1	539	627	-	287	308	-	-	-	-	-	-	-
Stage 2	~ 197	302	-	307	619	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, \$	1470.2		2.1	0.6
HCM LOS	F	-		






















Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1269	-	-	132	-	586	1075	-
HCM Lane V/C Ratio	0.138	-	-	4.117	-	0.017	0.021	-
HCM Control Delay (s)	8.3	0		\$ 1470.2	-	11.2	8.4	0
HCM Lane LOS	A	A	-	F	-	B	A	A
HCM 95th %tile Q(veh)	0.5	-	-	55.1	-	0.1	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
10: SR-33 & M St/Walnut Ave

2040 Cumulative Plus Project (without Zach IC)

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	87	57	74	83	12	63	424	139	104	530	24
Future Volume (veh/h)	12	87	57	74	83	12	63	424	139	104	530	24
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	13	95	62	80	90	13	68	461	151	113	576	26
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	203	121	79	205	184	27	102	488	160	137	654	30
Arrive On Green	0.11	0.11	0.11	0.12	0.12	0.12	0.06	0.41	0.41	0.09	0.43	0.43
Sat Flow, veh/h	1774	1054	688	1774	1592	230	1587	1203	394	1521	1516	68
Grp Volume(v), veh/h	13	0	157	80	0	103	68	0	612	113	0	602
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1774	0	1822	1587	0	1597	1521	0	1585
Q Serve(g_s), s	0.4	0.0	5.9	2.8	0.0	3.5	2.8	0.0	24.7	4.9	0.0	23.3
Cycle Q Clear(g_c), s	0.4	0.0	5.9	2.8	0.0	3.5	2.8	0.0	24.7	4.9	0.0	23.3
Prop In Lane	1.00		0.39	1.00		0.13	1.00		0.25	1.00		0.04
Lane Grp Cap(c), veh/h	203	0	200	205	0	211	102	0	648	137	0	683
V/C Ratio(X)	0.06	0.00	0.79	0.39	0.00	0.49	0.67	0.00	0.94	0.83	0.00	0.88
Avail Cap(c_a), veh/h	239	0	235	770	0	791	143	0	782	137	0	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	28.8	27.3	0.0	27.7	30.5	0.0	19.1	29.9	0.0	17.4
Incr Delay (d2), s/veh	0.0	0.0	11.6	0.4	0.0	0.6	2.7	0.0	16.9	30.8	0.0	9.7
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	0.2	0.0	3.4	1.4	0.0	1.8	1.3	0.0	13.8	3.2	0.0	11.9
LnGrp Delay(d),s/veh	26.4	0.0	40.3	27.8	0.0	28.3	33.3	0.0	36.0	60.7	0.0	27.1
LnGrp LOS	C		D	C		C	C		D	E		C
Approach Vol, veh/h		170			183			680			715	
Approach Delay, s/veh		39.3			28.1			35.8			32.4	
Approach LOS		D			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.9	10.0	32.0		12.9	8.3	33.7				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 9	6.0	32.7		29.0	6.0	32.7				
Max Q Clear Time (g_c+I1), s		7.9	6.9	26.7		5.5	4.8	25.3				
Green Ext Time (p_c), s		0.0	0.0	0.4		0.2	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			33.9									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 11: SR-33 & Las Palmas Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	291	10	236	375	81	27	278	371	174	351	5
Future Volume (veh/h)	22	291	10	236	375	81	27	278	371	174	351	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.97	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	1778	1900	1845	1743	1900	1827	1699	1900	1743	1880	1900
Adj Flow Rate, veh/h	24	316	11	257	408	88	29	302	403	189	382	5
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	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, %	0	7	7	3	9	0	4	1	1	9	1	1
Cap, veh/h	275	412	14	395	601	543	431	484	432	274	1319	17
Arrive On Green	0.03	0.24	0.24	0.13	0.34	0.34	0.03	0.30	0.30	0.10	0.37	0.37
Sat Flow, veh/h	1810	1707	59	1757	1743	1574	1740	1614	1441	1660	3610	47
Grp Volume(v), veh/h	24	0	327	257	408	88	29	302	403	189	189	198
Grp Sat Flow(s),veh/h/ln	1810	0	1766	1757	1743	1574	1740	1614	1441	1660	1786	1871
Q Serve(g_s), s	0.7	0.0	12.9	7.7	15.0	2.9	0.9	12.1	20.4	5.6	5.6	5.6
Cycle Q Clear(g_c), s	0.7	0.0	12.9	7.7	15.0	2.9	0.9	12.1	20.4	5.6	5.6	5.6
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	275	0	426	395	601	543	431	484	432	274	653	684
V/C Ratio(X)	0.09	0.00	0.77	0.65	0.68	0.16	0.07	0.62	0.93	0.69	0.29	0.29
Avail Cap(c_a), veh/h	360	0	678	600	971	876	564	494	442	274	653	684
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	26.5	17.9	21.0	17.1	17.1	22.6	25.5	18.0	16.9	16.9
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.7	0.5	0.1	0.0	1.7	26.1	5.9	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	0.4	0.0	6.4	3.7	7.2	1.3	0.4	5.6	11.2	3.0	2.8	2.9
LnGrp Delay(d),s/veh	20.8	0.0	27.6	18.6	21.5	17.1	17.2	24.4	51.6	24.0	17.0	17.0
LnGrp LOS	C		C	B	C	B	B	C	D	C	B	B
Approach Vol, veh/h		351			753			734			576	
Approach Delay, s/veh		27.1			20.0			39.0			19.3	
Approach LOS		C			C			D			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	6.0	30.5	11.2	27.4	13.7	22.7	6.3	32.3				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	41.8	7.2	23.0	18.5	28.8	8.0	22.2				
Max Q Clear Time (g_c+1/2), s	12.7	17.0	7.6	22.4	9.7	14.9	2.9	7.6				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.1	0.0	0.4	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			26.7									
HCM 2010 LOS			C									

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕			↕			↖	↗
Traffic Vol, veh/h	41	136	136	33	142	163	120	556	13	119	847	31
Future Vol, veh/h	41	136	136	33	142	163	120	556	13	119	847	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	14	14	14	19	19	19
Mvmt Flow	45	148	148	36	154	177	130	604	14	129	921	34

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2216	2057	921	2215	2084	611	955	0	0	618	0	0
Stage 1	1179	1179	-	871	871	-	-	-	-	-	-	-
Stage 2	1037	878	-	1344	1213	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.24	-	-	4.29	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.326	-	-	2.371	-	-
Pot Cap-1 Maneuver	~ 31	~ 55	328	~ 31	~ 53	494	673	-	-	885	-	-
Stage 1	232	264	-	346	368	-	-	-	-	-	-	-
Stage 2	279	366	-	187	255	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 27	328	-	~ 26	494	673	-	-	885	-	-
Mov Cap-2 Maneuver	-	~ 27	-	-	~ 26	-	-	-	-	-	-	-
Stage 1	164	181	-	244	259	-	-	-	-	-	-	-
Stage 2	51	258	-	~ 13	175	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					2		1.2	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	673	-	-	-	-	328	-	885	-
HCM Lane V/C Ratio	0.194	-	-	-	0.451	-	0.146	-	-
HCM Control Delay (s)	11.6	0	-	-	24.7	-	9.8	0	-
HCM Lane LOS	B	A	-	-	C	-	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	-	2.2	-	0.5	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	1	84	50	44	390	1	112	2	37	0	3	1
Future Vol, veh/h	1	84	50	44	390	1	112	2	37	0	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	20	20	10	0	20	0	20	0	20	0
Mvmt Flow	1	91	54	48	424	1	122	2	40	0	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	425	0	0	145	0	0	643	641	119	663	668	425
Stage 1	-	-	-	-	-	-	120	120	-	521	521	-
Stage 2	-	-	-	-	-	-	523	521	-	142	147	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.3	6.5	6.4	7.1	6.7	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.7	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.68	4	3.48	3.5	4.18	3.3
Pot Cap-1 Maneuver	1145	-	-	1334	-	-	362	395	886	377	357	634
Stage 1	-	-	-	-	-	-	843	800	-	542	503	-
Stage 2	-	-	-	-	-	-	506	535	-	866	742	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1145	-	-	1334	-	-	349	380	885	348	344	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	349	380	-	348	344	-
Stage 1	-	-	-	-	-	-	842	799	-	541	485	-
Stage 2	-	-	-	-	-	-	484	516	-	823	741	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.8			17.8			14.4		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	829	1145	-	-	1334	-	-	388
HCM Lane V/C Ratio	0.349	0.051	0.001	-	-	0.036	-	-	0.011
HCM Control Delay (s)	20.7	9.6	8.1	-	-	7.8	-	-	14.4
HCM Lane LOS	C	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.5	0.2	0	-	-	0.1	-	-	0

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕		↕		↕	↕	↕	↕	
Traffic Vol, veh/h	15	21	1	32	61	68	1	163	58	55	63	31
Future Vol, veh/h	15	21	1	32	61	68	1	163	58	55	63	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	0	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	0	14	0	2	20	9	7	0
Mvmt Flow	16	23	1	35	66	74	1	177	63	60	68	34

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	486	447	85	396	401	177	102	0	0	240	0	0
Stage 1	205	205	-	179	179	-	-	-	-	-	-	-
Stage 2	281	242	-	217	222	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.3	6.5	6.34	4.1	-	-	4.19	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.68	4	3.426	2.2	-	-	2.281	-	-
Pot Cap-1 Maneuver	492	506	974	533	541	836	1503	-	-	1287	-	-
Stage 1	797	732	-	783	755	-	-	-	-	-	-	-
Stage 2	726	705	-	746	723	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	390	482	974	495	515	836	1503	-	-	1287	-	-
Mov Cap-2 Maneuver	390	482	-	495	515	-	-	-	-	-	-	-
Stage 1	796	698	-	782	754	-	-	-	-	-	-	-
Stage 2	603	704	-	687	689	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.9		10.7		0		2.9	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1503	-	-	445	495	836	1287	-	-
HCM Lane V/C Ratio	0.001	-	-	0.09	0.07	0.088	0.046	-	-
HCM Control Delay (s)	7.4	0	-	13.9	12.8	9.7	7.9	-	-
HCM Lane LOS	A	A	-	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.3	0.1	-	-

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	0	18	34	21	2	118	30	110	283	21
Future Vol, veh/h	0	1	0	18	34	21	2	118	30	110	283	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	2	2	2	19	19	19	16	16	16
Mvmt Flow	0	1	0	20	37	23	2	128	33	120	308	23

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	739	725	320	709	720	145	331	0	0	161	0	0
Stage 1	560	560	-	149	149	-	-	-	-	-	-	-
Stage 2	179	165	-	560	571	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.12	6.52	6.22	4.29	-	-	4.26	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.518	4.018	3.318	2.371	-	-	2.344	-	-
Pot Cap-1 Maneuver	329	348	714	349	354	902	1139	-	-	1337	-	-
Stage 1	508	506	-	854	774	-	-	-	-	-	-	-
Stage 2	816	756	-	513	505	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	267	309	714	318	314	902	1139	-	-	1337	-	-
Mov Cap-2 Maneuver	267	309	-	318	314	-	-	-	-	-	-	-
Stage 1	507	450	-	852	772	-	-	-	-	-	-	-
Stage 2	756	754	-	455	449	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	16.6	0.1	2.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1139	-	-	309	388	1337	-	-
HCM Lane V/C Ratio	0.002	-	-	0.004	0.205	0.089	-	-
HCM Control Delay (s)	8.2	0	-	16.7	16.6	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.8	0.3	-	-

Intersection	
Intersection Delay, s/veh	172.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	38	8	17	208	203	21	385	303	18	499	72
Future Vol, veh/h	1	38	8	17	208	203	21	385	303	18	499	72
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
Heavy Vehicles, %	5	5	5	2	2	2	5	5	5	18	18	18
Mvmt Flow	1	41	9	18	226	221	23	418	329	20	542	78
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.3	51.9	251	178.6
HCM LOS	C	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	2%	4%	3%
Vol Thru, %	54%	81%	49%	85%
Vol Right, %	43%	17%	47%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	709	47	428	589
LT Vol	21	1	17	18
Through Vol	385	38	208	499
RT Vol	303	8	203	72
Lane Flow Rate	771	51	465	640
Geometry Grp	1	1	1	1
Degree of Util (X)	1.488	0.133	0.905	1.308
Departure Headway (Hd)	7.513	11.564	8.304	8.185
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	493	312	442	448
Service Time	5.513	9.564	6.304	6.185
HCM Lane V/C Ratio	1.564	0.163	1.052	1.429
HCM Control Delay	251	16.3	51.9	178.6
HCM Lane LOS	F	C	F	F
HCM 95th-tile Q	36.5	0.5	9.8	25.4

Intersection						
Int Delay, s/veh	134.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			L		T
Traffic Vol, veh/h	9	213	632	255	475	111
Future Vol, veh/h	9	213	632	255	475	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	10	232	687	277	516	121

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2228	577	637	0	-	0
Stage 1	577	-	-	-	-	-
Stage 2	1651	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	46	511	883	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	169	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 4	511	883	-	-	-
Mov Cap-2 Maneuver	~ 4	-	-	-	-	-
Stage 1	44	-	-	-	-	-
Stage 2	169	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	968.3	15.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	883	-	83	-	-
HCM Lane V/C Ratio	0.778	-	2.907	-	-
HCM Control Delay (s)	21.8		968.3	-	-
HCM Lane LOS	C	A	F	-	-
HCM 95th %tile Q(veh)	7.9	-	23.6	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	51.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	397	489	19	291	490
Future Vol, veh/h	21	397	489	19	291	490
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	20	16	16	17	17
Mvmt Flow	23	432	532	21	316	533

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1708	543	0	0	553
Stage 1	543	-	-	-	-
Stage 2	1165	-	-	-	-
Critical Hdwy	6.6	6.4	-	-	4.27
Critical Hdwy Stg 1	5.6	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-
Follow-up Hdwy	3.68	3.48	-	-	2.353
Pot Cap-1 Maneuver	90	506	-	-	946
Stage 1	548	-	-	-	-
Stage 2	273	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	47	506	-	-	946
Mov Cap-2 Maneuver	47	-	-	-	-
Stage 1	548	-	-	-	-
Stage 2	144	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	202.9	0	4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	339	946
HCM Lane V/C Ratio	-	-	1.34	0.334
HCM Control Delay (s)	-	-	202.9	10.7
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	22.1	1.5

Intersection						
Int Delay, s/veh	133.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	332	31	0	571	604	68
Future Vol, veh/h	332	31	0	571	604	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	361	34	0	621	657	74

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1315	694	731	0	0
Stage 1	694	-	-	-	-
Stage 2	621	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-
Pot Cap-1 Maneuver	~ 172	438	813	-	-
Stage 1	490	-	-	-	-
Stage 2	530	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 172	438	813	-	-
Mov Cap-2 Maneuver	~ 172	-	-	-	-
Stage 1	490	-	-	-	-
Stage 2	530	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	590.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	813	-	181	-	-
HCM Lane V/C Ratio	-	-	2.18	-	-
HCM Control Delay (s)	0	-	590.4	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	31.4	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	63.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	522	53	5	284	333	28
Future Vol, veh/h	522	53	5	284	333	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	17	17	16	16	19	19
Mvmt Flow	567	58	5	309	362	30

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	625	0	915 596
Stage 1	-	-	-	-	596 -
Stage 2	-	-	-	-	319 -
Critical Hdwy	-	-	4.26	-	6.59 6.39
Critical Hdwy Stg 1	-	-	-	-	5.59 -
Critical Hdwy Stg 2	-	-	-	-	5.59 -
Follow-up Hdwy	-	-	2.344	-	3.671 3.471
Pot Cap-1 Maneuver	-	-	892	-	~ 283 473
Stage 1	-	-	-	-	519 -
Stage 2	-	-	-	-	700 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	892	-	~ 281 473
Mov Cap-2 Maneuver	-	-	-	-	~ 281 -
Stage 1	-	-	-	-	519 -
Stage 2	-	-	-	-	695 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	214.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	290	-	-	892	-
HCM Lane V/C Ratio	1.353	-	-	0.006	-
HCM Control Delay (s)	214.6	-	-	9.1	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	20.1	-	-	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	411.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	76	480	65	0	351	29	1	27	3	45	357	19
Future Vol, veh/h	76	480	65	0	351	29	1	27	3	45	357	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	20	20	20	20	20	2	2	2	2	2	2
Mvmt Flow	83	522	71	0	382	32	1	29	3	49	388	21

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	737	531	399	826	540	31	409	0	0	32	0	0
Stage 1	497	497	-	33	33	-	-	-	-	-	-	-
Stage 2	240	34	-	793	507	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	312	~ 429	613	271	424	994	1150	-	-	1580	-	-
Stage 1	523	~ 516	-	939	833	-	-	-	-	-	-	-
Stage 2	725	832	-	356	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 50	~ 411	613	-	407	994	1150	-	-	1580	-	-
Mov Cap-2 Maneuver	~ 50	~ 411	-	-	407	-	-	-	-	-	-	-
Stage 1	522	~ 495	-	938	832	-	-	-	-	-	-	-
Stage 2	380	831	-	-	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 963		0.3	0.8
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1150	-	-	222	-	1580	-
HCM Lane V/C Ratio	0.001	-	-	3.041	-	0.031	-
HCM Control Delay (s)	8.1	0	-	\$ 963	-	7.4	0
HCM Lane LOS	A	A	-	F	-	A	A
HCM 95th %tile Q(veh)	0	-	-	60.8	-	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	38.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	45	558	2	4	1	96	205	96	9	147	3
Future Vol, veh/h	45	45	558	2	4	1	96	205	96	9	147	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	20	20	20	20	20	2	2	2	2	2	2
Mvmt Flow	49	49	607	2	4	1	104	223	104	10	160	3

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	668	717	162	993	666	275	163	0	0	327	0	0
Stage 1	182	182	-	483	483	-	-	-	-	-	-	-
Stage 2	486	535	-	510	183	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	348	334	838	208	358	723	1416	-	-	1233	-	-
Stage 1	780	716	-	532	524	-	-	-	-	-	-	-
Stage 2	530	496	-	514	716	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	318	301	838	47	323	723	1416	-	-	1233	-	-
Mov Cap-2 Maneuver	318	301	-	47	323	-	-	-	-	-	-	-
Stage 1	709	710	-	484	476	-	-	-	-	-	-	-
Stage 2	477	451	-	131	710	-	-	-	-	-	-	-





















Approach	EB		WB			NB			SB		
HCM Control Delay, s	70.1		35.9			1.9			0.4		
HCM LOS	F		E								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1416	-	-	677	124	1233	-	-
HCM Lane V/C Ratio	0.074	-	-	1.04	0.061	0.008	-	-
HCM Control Delay (s)	7.7	0	-	70.1	35.9	7.9	0	-
HCM Lane LOS	A	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	18.1	0.2	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

2040 Cumulative Plus Project (without Zach IC)

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	452	8	29	438	35	6	29	56	140	67	31
Future Volume (veh/h)	8	452	8	29	438	35	6	29	56	140	67	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	9	491	9	32	476	38	7	32	61	152	73	34
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	20	614	11	56	570	46	16	64	122	195	256	119
Arrive On Green	0.01	0.36	0.36	0.04	0.38	0.38	0.01	0.11	0.11	0.11	0.21	0.21
Sat Flow, veh/h	1675	1722	32	1560	1497	120	1774	574	1095	1774	1203	560
Grp Volume(v), veh/h	9	0	500	32	0	514	7	0	93	152	0	107
Grp Sat Flow(s),veh/h/ln	1675	0	1754	1560	0	1617	1774	0	1670	1774	0	1764
Q Serve(g_s), s	0.3	0.0	13.0	1.0	0.0	14.7	0.2	0.0	2.7	4.2	0.0	2.6
Cycle Q Clear(g_c), s	0.3	0.0	13.0	1.0	0.0	14.7	0.2	0.0	2.7	4.2	0.0	2.6
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.32
Lane Grp Cap(c), veh/h	20	0	626	56	0	616	16	0	187	195	0	375
V/C Ratio(X)	0.46	0.00	0.80	0.57	0.00	0.83	0.43	0.00	0.50	0.78	0.00	0.29
Avail Cap(c_a), veh/h	165	0	1111	154	0	1025	175	0	795	314	0	979
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	14.7	24.1	0.0	14.3	25.0	0.0	21.2	22.0	0.0	16.8
Incr Delay (d2), s/veh	15.7	0.0	2.4	9.0	0.0	3.1	16.5	0.0	2.1	6.6	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	6.7	0.6	0.0	7.0	0.2	0.0	1.3	2.4	0.0	1.3
LnGrp Delay(d),s/veh	40.6	0.0	17.1	33.1	0.0	17.4	41.6	0.0	23.3	28.6	0.0	17.2
LnGrp LOS	D		B	C		B	D		C	C		B
Approach Vol, veh/h		509			546			100			259	
Approach Delay, s/veh		17.5			18.3			24.6			23.9	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	11.5	5.8	23.9	4.5	16.6	4.6	25.1				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	9.0	24.2	5.0	32.2	5.0	28.2	5.0	32.2				
Max Q Clear Time (g_c+I1), s	6.2	4.7	3.0	15.0	2.2	4.6	2.3	16.7				
Green Ext Time (p_c), s	0.1	0.4	0.0	2.6	0.0	0.5	0.0	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay			19.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary 2040 Cumulative Plus Project (without Zach IC)
 25: Elm Ave & Las Palmas Ave

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	472	7	29	466	30	9	12	20	318	85	40
Future Volume (veh/h)	4	472	7	29	466	30	9	12	20	318	85	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		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	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	4	513	8	32	507	33	10	13	22	346	92	43
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	9	605	9	53	577	38	167	219	302	487	103	48
Arrive On Green	0.01	0.35	0.35	0.03	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1675	1728	27	1560	1521	99	265	600	828	1061	282	132
Grp Volume(v), veh/h	4	0	521	32	0	540	45	0	0	481	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1620	1693	0	0	1476	0	0
Q Serve(g_s), s	0.1	0.0	17.1	1.3	0.0	19.3	0.0	0.0	0.0	18.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	17.1	1.3	0.0	19.3	1.1	0.0	0.0	19.0	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	9	0	615	53	0	614	688	0	0	637	0	0
V/C Ratio(X)	0.44	0.00	0.85	0.60	0.00	0.88	0.07	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	135	0	881	126	0	814	827	0	0	768	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	18.7	29.6	0.0	18.0	12.9	0.0	0.0	18.5	0.0	0.0
Incr Delay (d2), s/veh	30.8	0.0	5.4	10.4	0.0	8.7	0.0	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	9.2	0.7	0.0	10.0	0.5	0.0	0.0	8.4	0.0	0.0
LnGrp Delay(d),s/veh	61.6	0.0	24.1	40.0	0.0	26.6	12.9	0.0	0.0	22.0	0.0	0.0
LnGrp LOS	E		C	D		C	B			C		
Approach Vol, veh/h		525			572			45			481	
Approach Delay, s/veh		24.4			27.4			12.9			22.0	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.5	6.1	27.6		28.5	4.3	29.4				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		28.2	5.0	31.2		28.2	5.0	31.2				
Max Q Clear Time (g_c+1), s		3.1	3.3	19.1		21.0	2.1	21.3				
Green Ext Time (p_c), s		0.2	0.0	2.4		1.6	0.0	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay			24.4									
HCM 2010 LOS			C									

Intersection						
Int Delay, s/veh	16					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	240	853	508	0	6	483
Future Vol, veh/h	240	853	508	0	6	483
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	14	14	2	2
Mvmt Flow	261	927	552	0	7	525

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	552	0	-	0	2001 552
Stage 1	-	-	-	-	552 -
Stage 2	-	-	-	-	1449 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	974	-	-	-	66 533
Stage 1	-	-	-	-	577 -
Stage 2	-	-	-	-	216 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	974	-	-	-	48 533
Mov Cap-2 Maneuver	-	-	-	-	48 -
Stage 1	-	-	-	-	422 -
Stage 2	-	-	-	-	216 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	63.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	974	-	-	-	48	533
HCM Lane V/C Ratio	0.268	-	-	-	0.136	0.985
HCM Control Delay (s)	10	-	-	-	91.5	63.2
HCM Lane LOS	B	-	-	-	F	F
HCM 95th %tile Q(veh)	1.1	-	-	-	0.4	13.5

Intersection	
Intersection Delay, s/veh	260.1
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	241	545	514	267	197	314
Future Vol, veh/h	241	545	514	267	197	314
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	262	592	559	290	214	341
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	293.3	341.9	84.1
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	66%	31%	0%
Vol Thru, %	34%	0%	39%
Vol Right, %	0%	69%	61%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	781	786	511
LT Vol	514	241	0
Through Vol	267	0	197
RT Vol	0	545	314
Lane Flow Rate	849	854	555
Geometry Grp	1	1	1
Degree of Util (X)	1.689	1.585	1.028
Departure Headway (Hd)	8.751	7.685	9.221
Convergence, Y/N	Yes	Yes	Yes
Cap	424	478	400
Service Time	6.751	5.685	7.221
HCM Lane V/C Ratio	2.002	1.787	1.387
HCM Control Delay	341.9	293.3	84.1
HCM Lane LOS	F	F	F
HCM 95th-tile Q	41.7	41	13

Intersection												
Intersection Delay, s/veh 322												
Intersection LOS F												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	659	364	262	566	0	225	0	127	0	0	0
Future Vol, veh/h	0	659	364	262	566	0	225	0	127	0	0	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	716	396	285	615	0	245	0	138	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	434.2	306.6	32.3	0
HCM LOS	F	F	D	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	64%	0%	32%	0%
Vol Thru, %	0%	64%	68%	100%
Vol Right, %	36%	36%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	352	1023	828	0
LT Vol	225	0	262	0
Through Vol	0	659	566	0
RT Vol	127	364	0	0
Lane Flow Rate	383	1112	900	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0.738	1.911	1.616	0
Departure Headway (Hd)	8.619	7.024	7.649	12.645
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	425	534	486	0
Service Time	6.619	5.024	5.649	10.645
HCM Lane V/C Ratio	0.901	2.082	1.852	0
HCM Control Delay	32.3	434.2	306.6	15.6
HCM Lane LOS	D	F	F	N
HCM 95th-tile Q	5.9	64.1	42.9	0

HCM Signalized Intersection Capacity Analysis
 1: I-5 SB Ramps & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: AM Peak























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↖					↖	↕	
Traffic Volume (vph)	0	398	19	127	635	0	0	0	0	303	1	286
Future Volume (vph)	0	398	19	127	635	0	0	0	0	303	1	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		0.99		1.00	1.00					1.00	0.86	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3451		1504	1798					1429	1498	
Flt Permitted		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3451		1504	1798					1429	1498	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	433	21	138	690	0	0	0	0	329	1	311
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	221	0
Lane Group Flow (vph)	0	451	0	124	704	0	0	0	0	296	124	0
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	4%	0%	14%	0%	0%	0%	0%	0%	20%	4%	2%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		17.0		46.9	46.9					31.9	31.9	
Effective Green, g (s)		17.0		46.9	46.9					31.9	31.9	
Actuated g/C Ratio		0.15		0.43	0.43					0.29	0.29	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		533		641	766					414	434	
v/s Ratio Prot		c0.13		0.08	c0.39					c0.21	0.08	
v/s Ratio Perm												
v/c Ratio		0.85		0.19	0.92					0.71	0.29	
Uniform Delay, d1		45.2		19.7	29.8					35.0	30.2	
Progression Factor		1.00		0.32	0.38					1.00	1.00	
Incremental Delay, d2		11.8		0.1	13.0					10.1	1.7	
Delay (s)		57.0		6.5	24.3					45.1	31.9	
Level of Service		E		A	C					D	C	
Approach Delay (s)		57.0			21.6			0.0			38.0	
Approach LOS		E			C			A			D	
Intersection Summary												
HCM 2000 Control Delay			35.4			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)					14.2	
Intersection Capacity Utilization			74.0%			ICU Level of Service					D	
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: I-5 NB Ramps & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				 			
Traffic Volume (vph)	191	510	0	0	615	879	147	1	238	0	0	0
Future Volume (vph)	191	510	0	0	615	879	147	1	238	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.99			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		3281			3282	1346		1808	2369			
Flt Permitted		0.99			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		3281			3282	1346		1808	2369			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	554	0	0	668	955	160	1	259	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	261	0	0	155	0	0	0
Lane Group Flow (vph)	0	762	0	0	668	694	0	161	104	0	0	0
Heavy Vehicles (%)	10%	8%	0%	0%	10%	20%	0%	20%	20%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2!	4	4	6			
Permitted Phases						6			4			
Actuated Green, G (s)		50.7			29.2	79.9		14.8	44.0			
Effective Green, g (s)		50.7			29.2	79.9		14.8	44.0			
Actuated g/C Ratio		0.46			0.27	0.73		0.13	0.40			
Clearance Time (s)		5.1			5.1	5.1		5.1	5.1			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		1512			871	1040		243	1057			
v/s Ratio Prot		0.23			c0.20	c0.31		c0.09	0.03			
v/s Ratio Perm						0.21			0.02			
v/c Ratio		0.50			0.77	0.67		0.66	0.10			
Uniform Delay, d1		20.8			37.3	8.0		45.2	20.6			
Progression Factor		0.15			0.80	13.76		1.00	1.00			
Incremental Delay, d2		0.7			3.0	1.2		6.6	0.0			
Delay (s)		3.9			32.8	111.1		51.9	20.6			
Level of Service		A			C	F		D	C			
Approach Delay (s)		3.9			78.9			32.6			0.0	
Approach LOS		A			E			C			A	

Intersection Summary

HCM 2000 Control Delay	51.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		






























! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Sperry Ave & Rogers Rd

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 					 	 	
Traffic Volume (vph)	167	367	214	76	901	150	188	3	60	90	0	405
Future Volume (vph)	167	367	214	76	901	150	188	3	60	90	0	405
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3282	1583	1770	3059	1583	1770	1863	1583	1698	1303	1346
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3282	1583	1770	3059	1583	1770	1863	1583	1698	1303	1346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	399	233	83	979	163	204	3	65	98	0	440
RTOR Reduction (vph)	0	0	124	0	0	90	0	0	55	0	192	100
Lane Group Flow (vph)	182	399	109	83	979	73	204	3	10	88	34	124
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	9.5	51.4	51.4	9.2	49.1	49.1	16.3	16.3	16.3	11.6	11.6	21.1
Effective Green, g (s)	9.5	51.4	51.4	9.2	49.1	49.1	16.3	16.3	16.3	11.6	11.6	21.1
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.45	0.45	0.15	0.15	0.15	0.11	0.11	0.19
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	277	1533	739	148	1365	706	262	276	234	179	137	258
v/s Ratio Prot	c0.06	0.12		0.05	c0.32		c0.12	0.00		c0.05	0.03	0.04
v/s Ratio Perm			0.07			0.05			0.01			0.05
v/c Ratio	0.66	0.26	0.15	0.56	0.72	0.10	0.78	0.01	0.04	0.49	0.25	0.48
Uniform Delay, d1	48.7	17.8	16.8	48.5	24.8	17.7	45.1	40.0	40.2	46.4	45.2	39.6
Progression Factor	0.78	0.44	0.56	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.4	0.4	4.8	3.3	0.3	13.6	0.0	0.1	2.1	0.9	1.4
Delay (s)	42.9	8.3	9.7	53.2	28.1	18.0	58.7	40.0	40.2	48.5	46.1	41.0
Level of Service	D	A	A	D	C	B	E	D	D	D	D	D
Approach Delay (s)		16.4			28.4			54.1			44.4	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			30.5				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			66.6%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔	↕↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	120	497	7	8	532	15	167	51	24	14	10	89
Future Volume (veh/h)	120	497	7	8	532	15	167	51	24	14	10	89
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1583	1745	1900	1900	1827	1583	1900	1900	1900	1583	1611	1900
Adj Flow Rate, veh/h	130	540	8	9	578	16	182	55	26	15	11	97
Adj No. of Lanes	2	2	0	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	307	1409	21	26	1147	439	396	472	401	407	35	310
Arrive On Green	0.11	0.42	0.42	0.01	0.33	0.33	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	2925	3344	50	1810	3471	1329	1306	1900	1615	1115	142	1249
Grp Volume(v), veh/h	130	268	280	9	578	16	182	55	26	15	0	108
Grp Sat Flow(s),veh/h/ln	1463	1658	1735	1810	1736	1329	1306	1900	1615	1115	0	1390
Q Serve(g_s), s	1.9	5.2	5.2	0.2	6.2	0.4	6.1	1.0	0.6	0.5	0.0	2.9
Cycle Q Clear(g_c), s	1.9	5.2	5.2	0.2	6.2	0.4	9.1	1.0	0.6	1.5	0.0	2.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	307	699	731	26	1147	439	396	472	401	407	0	345
V/C Ratio(X)	0.42	0.38	0.38	0.35	0.50	0.04	0.46	0.12	0.06	0.04	0.00	0.31
Avail Cap(c_a), veh/h	535	1331	1393	234	2600	995	578	736	626	1018	0	1107
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.5	9.3	9.3	22.7	12.5	10.5	17.9	13.5	13.3	14.1	0.0	14.2
Incr Delay (d2), s/veh	0.9	0.7	0.7	8.0	0.7	0.1	0.8	0.1	0.1	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.4	2.6	0.2	3.1	0.1	2.3	0.6	0.3	0.2	0.0	1.2
LnGrp Delay(d),s/veh	20.4	10.0	10.0	30.7	13.2	10.6	18.8	13.6	13.4	14.2	0.0	14.8
LnGrp LOS	C	B	A	C	B	B	B	B	B	B		B
Approach Vol, veh/h		678			603			263			123	
Approach Delay, s/veh		12.0			13.4			17.2			14.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	25.3		16.0	9.4	21.1		16.0				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	8.5	34.8		18.0				
Max Q Clear Time (g_c+1/2), s	7.2	7.2		4.9	3.9	8.2		11.1				
Green Ext Time (p_c), s	0.0	6.4		0.7	0.1	7.1		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				13.5								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	339	46	10	521	83	67	561	20	318	207	93
Future Volume (veh/h)	125	339	46	10	521	83	67	561	20	318	207	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1851	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	136	368	50	11	566	90	73	610	22	346	225	101
Adj No. of Lanes	1	2	0	1	2	1	2	1	0	2	1	1
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	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	166	916	123	27	758	353	203	645	23	411	787	669
Arrive On Green	0.09	0.29	0.29	0.02	0.22	0.22	0.06	0.35	0.35	0.12	0.41	0.41
Sat Flow, veh/h	1792	3107	419	1660	3471	1615	3510	1823	66	3476	1900	1615
Grp Volume(v), veh/h	136	207	211	11	566	90	73	0	632	346	225	101
Grp Sat Flow(s),veh/h/ln	1792	1759	1767	1660	1736	1615	1755	0	1888	1738	1900	1615
Q Serve(g_s), s	6.4	8.0	8.2	0.6	13.0	3.9	1.7	0.0	27.7	8.3	6.7	3.3
Cycle Q Clear(g_c), s	6.4	8.0	8.2	0.6	13.0	3.9	1.7	0.0	27.7	8.3	6.7	3.3
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	166	519	521	27	758	353	203	0	668	411	787	669
V/C Ratio(X)	0.82	0.40	0.41	0.41	0.75	0.26	0.36	0.00	0.95	0.84	0.29	0.15
Avail Cap(c_a), veh/h	166	519	521	117	923	429	247	0	681	411	787	669
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	24.1	24.1	41.6	31.2	27.6	38.7	0.0	26.8	36.9	16.6	15.6
Incr Delay (d2), s/veh	25.3	1.1	1.1	20.1	3.9	0.8	0.4	0.0	21.9	13.8	0.2	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	4.3	4.1	4.1	0.4	6.6	1.8	0.8	0.0	18.5	4.8	3.5	1.5
LnGrp Delay(d),s/veh	63.3	25.1	25.2	61.7	35.1	28.4	39.1	0.0	48.7	50.7	16.8	15.7
LnGrp LOS	E	C	C	E	D	C	D		D	D	B	B
Approach Vol, veh/h		554			667			705			672	
Approach Delay, s/veh		34.5			34.6			47.7			34.1	
Approach LOS		C			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	30.7	9.1	40.0	12.1	24.2	14.3	34.8				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	24.6	* 6	34.9	* 7.9	22.7	* 10	30.8				
Max Q Clear Time (g_c+1), s	12.6	10.2	3.7	8.7	8.4	15.0	10.3	29.7				
Green Ext Time (p_c), s	0.0	3.4	0.0	1.6	0.0	3.7	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			38.0									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	665	32	37	495	51	50	114	69	80	81	105
Future Volume (veh/h)	78	665	32	37	495	51	50	114	69	80	81	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1847	1900	1900	1846	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	85	723	35	40	538	55	54	124	75	87	88	114
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	183	1085	52	93	864	88	300	253	153	306	173	224
Arrive On Green	0.10	0.32	0.32	0.05	0.27	0.27	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	3404	165	1810	3214	328	1197	1101	666	1200	752	974
Grp Volume(v), veh/h	85	373	385	40	293	300	54	0	199	87	0	202
Grp Sat Flow(s),veh/h/ln	1810	1755	1814	1810	1754	1788	1197	0	1766	1200	0	1725
Q Serve(g_s), s	2.2	8.9	9.0	1.0	7.1	7.2	2.0	0.0	4.8	3.3	0.0	5.0
Cycle Q Clear(g_c), s	2.2	8.9	9.0	1.0	7.1	7.2	7.0	0.0	4.8	8.1	0.0	5.0
Prop In Lane	1.00		0.09	1.00		0.18	1.00		0.38	1.00		0.56
Lane Grp Cap(c), veh/h	183	559	578	93	472	481	300	0	406	306	0	396
V/C Ratio(X)	0.46	0.67	0.67	0.43	0.62	0.62	0.18	0.00	0.49	0.28	0.00	0.51
Avail Cap(c_a), veh/h	241	810	838	223	792	807	566	0	797	572	0	779
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	14.4	14.4	22.4	15.6	15.6	19.4	0.0	16.3	19.8	0.0	16.4
Incr Delay (d2), s/veh	1.8	2.0	1.9	3.1	1.9	1.9	0.3	0.0	0.9	0.5	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.6	4.8	0.6	3.7	3.8	0.7	0.0	2.4	1.1	0.0	2.5
LnGrp Delay(d),s/veh	22.5	16.3	16.3	25.5	17.5	17.5	19.7	0.0	17.2	20.3	0.0	17.4
LnGrp LOS	C	B	B	C	B	B	B		B	C		B
Approach Vol, veh/h		843			633			253			289	
Approach Delay, s/veh		16.9			18.0			17.7			18.3	
Approach LOS		B			B			B			B	
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	22.0		17.7	11.4	19.6		17.7				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	6.5	22.5		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1), s	11.0	11.0		10.1	4.2	9.2		9.0				
Green Ext Time (p_c), s	0.0	4.6		1.2	0.0	3.9		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				17.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	588	20	135	503	126	19	93	97	154	127	41
Future Volume (veh/h)	132	588	20	135	503	126	19	93	97	154	127	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1843	1900	1881	1855	1900	1845	1881	1863	1881	1900	1900
Adj Flow Rate, veh/h	143	639	22	147	547	137	21	101	105	167	138	45
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
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	3	3	1	3	3	3	1	2	1	0	0
Cap, veh/h	182	1165	40	189	903	225	360	499	420	381	504	417
Arrive On Green	0.10	0.34	0.34	0.11	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	3453	119	1792	2786	695	1173	1881	1582	1182	1900	1573
Grp Volume(v), veh/h	143	324	337	147	345	339	21	101	105	167	138	45
Grp Sat Flow(s),veh/h/ln	1774	1751	1820	1792	1763	1719	1173	1881	1582	1182	1900	1573
Q Serve(g_s), s	4.9	9.3	9.3	4.9	10.2	10.3	0.9	2.6	3.2	7.9	3.6	1.3
Cycle Q Clear(g_c), s	4.9	9.3	9.3	4.9	10.2	10.3	4.4	2.6	3.2	10.5	3.6	1.3
Prop In Lane	1.00		0.07	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	591	614	189	571	557	360	499	420	381	504	417
V/C Ratio(X)	0.78	0.55	0.55	0.78	0.60	0.61	0.06	0.20	0.25	0.44	0.27	0.11
Avail Cap(c_a), veh/h	287	851	884	377	913	890	695	1036	871	718	1046	866
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	27.0	16.6	16.6	26.9	17.5	17.6	19.7	17.6	17.8	21.7	18.0	17.2
Incr Delay (d2), s/veh	7.2	1.7	1.6	6.7	2.2	2.3	0.1	0.4	0.7	1.7	0.6	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	2.7	4.8	5.0	2.8	5.2	5.2	0.3	1.4	1.5	2.7	1.9	0.6
LnGrp Delay(d),s/veh	34.2	18.3	18.3	33.6	19.7	19.9	19.9	18.0	18.5	23.4	18.6	17.4
LnGrp LOS	C	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		804			831			227			350	
Approach Delay, s/veh		21.1			22.2			18.4			20.7	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.5	26.8		22.4	13.4	26.0		22.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	30.0	30.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+I), s	11.3	11.3		12.5	6.9	12.3		6.4				
Green Ext Time (p_c), s	0.2	6.5		3.0	0.1	7.0		2.0				
Intersection Summary												
HCM 2010 Ctrl Delay				21.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	322	33	13	419	31	65	97	18	4	44	129
Future Volume (veh/h)	237	322	33	13	419	31	65	97	18	4	44	129
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1802	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	258	350	36	14	455	34	71	105	20	4	48	140
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	567	1736	177	697	1011	892	224	203	33	102	84	232
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	921	3136	321	1012	1827	1612	482	1064	176	14	440	1221
Grp Volume(v), veh/h	258	190	196	14	455	34	196	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	921	1712	1745	1012	1827	1612	1721	0	0	1674	0	0
Q Serve(g_s), s	8.6	2.1	2.1	0.3	5.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.1	2.1	2.1	2.4	5.5	0.4	3.5	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.18	1.00		1.00	0.36		0.10	0.02		0.73
Lane Grp Cap(c), veh/h	567	948	966	697	1011	892	460	0	0	418	0	0
V/C Ratio(X)	0.45	0.20	0.20	0.02	0.45	0.04	0.43	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	715	1223	1246	860	1305	1151	1167	0	0	1178	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	4.2	4.2	4.8	4.9	3.8	13.6	0.0	0.0	13.7	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.2	0.2	0.0	0.7	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.0	1.0	0.1	2.8	0.2	1.9	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	10.3	4.4	4.4	4.8	5.6	3.8	14.2	0.0	0.0	14.5	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		644			503			196			192	
Approach Delay, s/veh		6.8			5.5			14.2			14.5	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.1		12.0		25.1		12.0				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.5		24.0		26.5		24.0				
Max Q Clear Time (g_c+1), s		16.1		5.5		7.5		5.9				
Green Ext Time (p_c), s		4.5		1.1		5.2		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				8.3								
HCM 2010 LOS				A								

HCM Signalized Intersection Capacity Analysis
9: SR-33 & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	181	68	41	153	59	130	403	53	30	277	249
Future Volume (vph)	155	181	68	41	153	59	130	403	53	30	277	249
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	1743		1805	1795		1703	1804		1556	1810	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1703	1743		1805	1795		1703	1804		1556	1810	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	197	74	45	166	64	141	438	58	33	301	271
RTOR Reduction (vph)	0	18	0	0	17	0	0	5	0	0	0	186
Lane Group Flow (vph)	168	253	0	45	213	0	141	491	0	33	301	85
Heavy Vehicles (%)	6%	4%	6%	0%	2%	0%	6%	3%	7%	16%	5%	4%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	15.3	15.3		10.4	10.4		8.7	31.5		1.9	24.7	24.7
Effective Green, g (s)	15.3	15.3		10.4	10.4		8.7	31.5		1.9	24.7	24.7
Actuated g/C Ratio	0.19	0.19		0.13	0.13		0.11	0.40		0.02	0.31	0.31
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	331	339		238	237		188	722		37	568	488
v/s Ratio Prot	0.10	c0.15		0.02	c0.12		c0.08	c0.27		0.02	0.17	
v/s Ratio Perm												0.05
v/c Ratio	0.51	0.75		0.19	0.90		0.75	0.68		0.89	0.53	0.17
Uniform Delay, d1	28.3	29.8		30.3	33.6		33.9	19.4		38.2	22.2	19.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	8.7		0.4	32.2		15.4	5.1		104.8	3.5	0.8
Delay (s)	29.5	38.5		30.7	65.8		49.3	24.5		143.1	25.7	20.3
Level of Service	C	D		C	E		D	C		F	C	C
Approach Delay (s)		35.1			60.0			30.0			29.7	
Approach LOS		D			E			C			C	

Intersection Summary

HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	19.5
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	173	69	165	147	22	101	255	185	73	565	96
Future Volume (veh/h)	30	173	69	165	147	22	101	255	185	73	565	96
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1583	1583	1583	1583	1583	1900
Adj Flow Rate, veh/h	33	188	75	179	160	24	110	277	201	79	614	104
Adj No. of Lanes	1	1	0	2	1	0	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, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	77	203	81	474	409	61	297	864	572	116	708	120
Arrive On Green	0.04	0.16	0.16	0.14	0.26	0.26	0.09	0.29	0.29	0.08	0.27	0.27
Sat Flow, veh/h	1774	1268	506	3442	1583	238	1508	3008	1346	1508	2575	435
Grp Volume(v), veh/h	33	0	263	179	0	184	110	277	201	79	358	360
Grp Sat Flow(s),veh/h/ln	1774	0	1773	1721	0	1821	1508	1504	1346	1508	1504	1507
Q Serve(g_s), s	1.0	0.0	7.9	2.6	0.0	4.5	2.7	3.9	1.4	2.8	12.3	12.3
Cycle Q Clear(g_c), s	1.0	0.0	7.9	2.6	0.0	4.5	2.7	3.9	1.4	2.8	12.3	12.3
Prop In Lane	1.00		0.29	1.00		0.13	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	77	0	285	474	0	471	297	864	572	116	413	414
V/C Ratio(X)	0.43	0.00	0.92	0.38	0.00	0.39	0.37	0.32	0.35	0.68	0.87	0.87
Avail Cap(c_a), veh/h	196	0	285	1841	0	1071	329	1054	657	278	638	639
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	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	25.3	0.0	22.4	21.3	0.0	16.6	13.5	15.2	2.5	24.4	18.7	18.7
Incr Delay (d2), s/veh	1.4	0.0	33.4	0.2	0.0	0.2	0.3	0.1	0.1	2.6	5.0	5.2
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	0.0	6.5	1.2	0.0	2.3	1.2	1.6	1.0	1.2	5.7	5.7
LnGrp Delay(d),s/veh	26.7	0.0	55.9	21.4	0.0	16.8	13.8	15.2	2.7	27.0	23.7	23.9
LnGrp LOS	C		E	C		B	B	B	A	C	C	C
Approach Vol, veh/h		296			363			588			797	
Approach Delay, s/veh		52.6			19.1			10.7			24.1	
Approach LOS		D			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	12.9	8.2	20.5	6.3	19.2	8.9	19.8				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 8.7	10.0	19.0	6.0	* 32	6.0	23.0				
Max Q Clear Time (g_c+1/4), s	14.6	9.9	4.8	5.9	3.0	6.5	4.7	14.3				
Green Ext Time (p_c), s	0.1	0.0	0.0	0.3	0.0	0.4	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			23.5									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	279	6	211	431	156	3	322	352	201	339	4
Future Volume (veh/h)	24	279	6	211	431	156	3	322	352	201	339	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	0.99		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1873	1900	1810	1900	1900	1900	1845	1845	1881	1810	1900
Adj Flow Rate, veh/h	26	303	7	229	468	170	3	350	383	218	368	4
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	2	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, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	250	426	10	414	625	518	408	981	436	789	1236	13
Arrive On Green	0.03	0.23	0.23	0.12	0.33	0.33	0.00	0.28	0.28	0.08	0.35	0.35
Sat Flow, veh/h	1723	1823	42	1723	1900	1575	1810	3505	1560	3476	3485	38
Grp Volume(v), veh/h	26	0	310	229	468	170	3	350	383	218	181	191
Grp Sat Flow(s),veh/h/ln	1723	0	1865	1723	1900	1575	1810	1752	1560	1738	1720	1802
Q Serve(g_s), s	0.7	0.0	9.4	5.8	13.6	5.0	0.1	4.9	14.5	2.5	4.7	4.7
Cycle Q Clear(g_c), s	0.7	0.0	9.4	5.8	13.6	5.0	0.1	4.9	14.5	2.5	4.7	4.7
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	250	0	436	414	625	518	408	981	436	789	610	639
V/C Ratio(X)	0.10	0.00	0.71	0.55	0.75	0.33	0.01	0.36	0.88	0.28	0.30	0.30
Avail Cap(c_a), veh/h	353	0	915	716	1332	1104	635	1311	583	830	610	639
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	21.7	14.6	18.5	15.6	15.9	17.8	21.2	12.7	14.4	14.4
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.4	0.7	0.1	0.0	0.1	9.3	0.1	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	0.3	0.0	4.9	2.7	7.1	2.2	0.0	2.4	7.4	1.2	2.2	2.3
LnGrp Delay(d),s/veh	17.6	0.0	22.5	15.0	19.1	15.7	15.9	17.9	30.6	12.7	14.5	14.5
LnGrp LOS	B		C	B	B	B	B	B	C	B	B	B
Approach Vol, veh/h		336			867			736			590	
Approach Delay, s/veh		22.2			17.4			24.5			13.8	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	24.9	8.9	22.2	11.7	19.0	4.3	26.8				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	43.3	5.6	23.1	18.5	30.3	8.0	20.7				
Max Q Clear Time (g_c+I), s	12.7	15.6	4.5	16.5	7.8	11.4	2.1	6.7				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.3	0.0	0.3	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			19.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	224	157	30	109	282	43	387	11	172	823	18
Future Volume (veh/h)	85	224	157	30	109	282	43	387	11	172	823	18
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	1863	1900	1863	1863	1583	1583	1900	1583	1583	1900
Adj Flow Rate, veh/h	92	243	171	33	118	307	47	421	12	187	895	20
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	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, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	338	471	400	144	381	400	74	834	24	227	1144	26
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.28	0.28	0.15	0.38	0.38
Sat Flow, veh/h	958	1863	1583	186	1505	1583	1508	2987	85	1508	3008	67
Grp Volume(v), veh/h	92	243	171	151	0	307	47	212	221	187	447	468
Grp Sat Flow(s),veh/h/ln	958	1863	1583	1691	0	1583	1508	1504	1568	1508	1504	1571
Q Serve(g_s), s	3.9	5.1	4.1	0.0	0.0	8.1	1.4	5.4	5.4	5.5	11.9	11.9
Cycle Q Clear(g_c), s	6.9	5.1	4.1	3.0	0.0	8.1	1.4	5.4	5.4	5.5	11.9	11.9
Prop In Lane	1.00		1.00	0.22		1.00	1.00		0.05	1.00		0.04
Lane Grp Cap(c), veh/h	338	471	400	524	0	400	74	420	438	227	572	597
V/C Ratio(X)	0.27	0.52	0.43	0.29	0.00	0.77	0.63	0.50	0.51	0.82	0.78	0.78
Avail Cap(c_a), veh/h	476	740	629	748	0	629	186	617	644	299	730	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	14.5	14.2	13.8	0.0	15.7	21.1	13.7	13.7	18.7	12.4	12.4
Incr Delay (d2), s/veh	0.4	0.9	0.7	0.3	0.0	3.1	8.6	0.9	0.9	13.2	4.3	4.1
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	2.7	1.8	1.6	0.0	3.8	0.8	2.3	2.4	3.1	5.5	5.7
LnGrp Delay(d),s/veh	17.0	15.4	14.9	14.1	0.0	18.8	29.7	14.6	14.6	31.9	16.7	16.5
LnGrp LOS	B	B	B	B		B	C	B	B	C	B	B
Approach Vol, veh/h		506			458			480			1102	
Approach Delay, s/veh		15.5			17.2			16.1			19.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	18.4		16.1	6.2	23.0		16.1				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	18.6	18.6		18.0	5.6	22.0		18.0				
Max Q Clear Time (g_c+1), s	7.4	7.4		8.9	3.4	13.9		10.1				
Green Ext Time (p_c), s	0.1	1.7		1.8	0.0	3.3		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				17.5								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	99	17	8	52	5	113	1	10	2	1	0
Future Volume (veh/h)	2	99	17	8	52	5	113	1	10	2	1	0
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		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1583	1827	1759	1900	1670	1900	1845	1820	1900	1900	1781	1900
Adj Flow Rate, veh/h	2	108	18	9	57	5	123	1	11	2	1	0
Adj No. of Lanes	1	2	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	4	8	0	15	15	3	20	20	20	20	20
Cap, veh/h	5	907	581	22	409	36	456	17	192	6	3	0
Arrive On Green	0.00	0.26	0.26	0.01	0.27	0.27	0.13	0.13	0.13	0.00	0.00	0.00
Sat Flow, veh/h	1508	3471	1459	1810	1510	132	3408	131	1436	1149	575	0
Grp Volume(v), veh/h	2	108	18	9	0	62	123	0	12	3	0	0
Grp Sat Flow(s),veh/h/ln	1508	1736	1459	1810	0	1643	1704	0	1566	1724	0	0
Q Serve(g_s), s	0.0	0.7	0.2	0.2	0.0	0.9	1.0	0.0	0.2	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.7	0.2	0.2	0.0	0.9	1.0	0.0	0.2	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.92	0.67		0.00
Lane Grp Cap(c), veh/h	5	907	581	22	0	445	456	0	210	9	0	0
V/C Ratio(X)	0.41	0.12	0.03	0.41	0.00	0.14	0.27	0.00	0.06	0.35	0.00	0.00
Avail Cap(c_a), veh/h	246	964	605	296	0	456	835	0	384	338	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.2	8.6	5.7	15.0	0.0	8.5	11.9	0.0	11.6	15.2	0.0	0.0
Incr Delay (d2), s/veh	46.0	0.1	0.0	12.0	0.0	0.1	0.3	0.0	0.1	23.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.1	0.1	0.0	0.4	0.5	0.0	0.1	0.1	0.0	0.0
LnGrp Delay(d),s/veh	61.3	8.7	5.7	27.1	0.0	8.6	12.2	0.0	11.7	38.2	0.0	0.0
LnGrp LOS	E	A	A	C		A	B		B	D		
Approach Vol, veh/h		128			71			135			3	
Approach Delay, s/veh		9.1			10.9			12.2			38.2	
Approach LOS		A			B			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.6	4.9	12.5		4.7	4.6	12.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		7.5	5.0	8.5		6.0	5.0	8.5				
Max Q Clear Time (g_c+1), s		3.0	2.2	2.7		2.1	2.0	2.9				
Green Ext Time (p_c), s		0.1	0.0	0.3		0.0	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				11.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖↗	↖		↖	↑↑	↖	↖↗	↗	
Traffic Volume (veh/h)	125	83	27	16	12	14	2	68	28	32	36	9
Future Volume (veh/h)	125	83	27	16	12	14	2	68	28	32	36	9
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	1583	1860	1900	1900	1583	1583	1827	1722	1900
Adj Flow Rate, veh/h	136	90	29	17	13	15	2	74	30	35	39	10
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	20	0	0	0	20	20	4	13	13
Cap, veh/h	178	341	110	63	137	158	5	635	313	137	329	84
Arrive On Green	0.10	0.25	0.25	0.02	0.17	0.17	0.00	0.21	0.21	0.04	0.25	0.25
Sat Flow, veh/h	1774	1351	435	2925	789	910	1810	3008	1346	3375	1323	339
Grp Volume(v), veh/h	136	0	119	17	0	28	2	74	30	35	0	49
Grp Sat Flow(s),veh/h/ln	1774	0	1786	1463	0	1699	1810	1504	1346	1688	0	1662
Q Serve(g_s), s	2.8	0.0	2.0	0.2	0.0	0.5	0.0	0.8	0.7	0.4	0.0	0.9
Cycle Q Clear(g_c), s	2.8	0.0	2.0	0.2	0.0	0.5	0.0	0.8	0.7	0.4	0.0	0.9
Prop In Lane	1.00		0.24	1.00		0.54	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	178	0	450	63	0	295	5	635	313	137	0	414
V/C Ratio(X)	0.76	0.00	0.26	0.27	0.00	0.09	0.40	0.12	0.10	0.26	0.00	0.12
Avail Cap(c_a), veh/h	421	0	1097	386	0	851	239	1507	703	445	0	854
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	11.4	18.3	0.0	13.2	18.9	12.1	11.4	17.6	0.0	11.0
Incr Delay (d2), s/veh	6.6	0.0	0.3	2.2	0.0	0.1	45.0	0.1	0.1	1.0	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	1.7	0.0	1.0	0.1	0.0	0.3	0.1	0.3	0.3	0.2	0.0	0.4
LnGrp Delay(d),s/veh	23.3	0.0	11.7	20.5	0.0	13.3	63.9	12.2	11.6	18.6	0.0	11.2
LnGrp LOS	C		B	C		B	E	B	B	B		B
Approach Vol, veh/h		255			45			106			84	
Approach Delay, s/veh		17.9			16.0			13.0			14.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	13.1	4.8	14.5	4.1	14.5	7.8	11.5				
Change Period (Y+Rc), s	4.0	5.1	4.0	* 4.9	4.0	* 5.1	4.0	4.9				
Max Green Setting (Gmax), s	5.0	19.0	5.0	* 23	5.0	* 20	9.0	19.0				
Max Q Clear Time (g_c+1), s	12.4	2.8	2.2	4.0	2.0	2.9	4.8	2.5				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.6	0.0	0.2	0.1	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				16.0								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	29	47	5	10	4	8	1	94	10	24	393	19
Future Volume (veh/h)	29	47	5	10	4	8	1	94	10	24	393	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1759	1759	1759	1610	1610	1610	1638	1638	1900
Adj Flow Rate, veh/h	32	51	5	11	4	9	1	102	11	26	427	21
Adj No. of Lanes	1	2	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, %	2	2	2	8	8	8	18	18	18	16	16	16
Cap, veh/h	174	348	156	116	63	101	4	694	311	50	778	38
Arrive On Green	0.10	0.10	0.10	0.04	0.04	0.04	0.00	0.23	0.23	0.03	0.26	0.26
Sat Flow, veh/h	1774	3539	1583	3250	1759	1495	1533	3059	1369	1560	3020	148
Grp Volume(v), veh/h	32	51	5	11	4	9	1	102	11	26	220	228
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1625	1759	1495	1533	1530	1369	1560	1556	1612
Q Serve(g_s), s	0.6	0.5	0.1	0.1	0.1	0.2	0.0	0.9	0.2	0.6	4.3	4.3
Cycle Q Clear(g_c), s	0.6	0.5	0.1	0.1	0.1	0.2	0.0	0.9	0.2	0.6	4.3	4.3
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	174	348	156	116	63	101	4	694	311	50	401	415
V/C Ratio(X)	0.18	0.15	0.03	0.09	0.06	0.09	0.23	0.15	0.04	0.52	0.55	0.55
Avail Cap(c_a), veh/h	302	603	270	553	299	302	244	955	427	248	486	503
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	14.6	14.5	14.4	16.4	16.4	15.4	17.6	10.9	10.6	16.8	11.3	11.3
Incr Delay (d2), s/veh	0.5	0.2	0.1	0.4	0.4	0.4	24.9	0.1	0.0	8.2	1.2	1.1
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	0.3	0.2	0.0	0.1	0.0	0.1	0.0	0.4	0.1	0.4	2.0	2.0
LnGrp Delay(d),s/veh	15.1	14.7	14.5	16.8	16.8	15.8	42.4	11.0	10.7	25.0	12.5	12.5
LnGrp LOS	B	B	B	B	B	B	D	B	B	C	B	B
Approach Vol, veh/h		88			24			114			474	
Approach Delay, s/veh		14.8			16.4			11.2			13.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	13.8		9.3	4.0	14.9		7.1				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.6	11.0		6.0	5.6	11.0		6.0				
Max Q Clear Time (g_c+I), s	11.6	2.9		2.6	2.0	6.3		2.2				
Green Ext Time (p_c), s	0.0	0.3		0.1	0.0	1.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				13.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 16: Baldwin Rd & Zacharias Rd

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	55	9	27	30	14	100	468	162	2	282	139
Future Volume (veh/h)	7	55	9	27	30	14	100	468	162	2	282	139
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	1759	1759	1900	1743	1743	1743	1667	1667	1900
Adj Flow Rate, veh/h	8	60	10	29	33	15	109	509	176	2	307	151
Adj No. of Lanes	1	2	0	2	2	0	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, %	2	2	2	8	8	8	9	9	9	14	14	14
Cap, veh/h	151	260	42	366	258	110	142	967	432	4	434	209
Arrive On Green	0.09	0.09	0.09	0.11	0.11	0.11	0.09	0.29	0.29	0.00	0.21	0.21
Sat Flow, veh/h	1774	3049	496	3250	2287	972	1660	3312	1482	1587	2076	998
Grp Volume(v), veh/h	8	34	36	29	24	24	109	509	176	2	232	226
Grp Sat Flow(s),veh/h/ln	1774	1770	1775	1625	1671	1588	1660	1656	1482	1587	1583	1491
Q Serve(g_s), s	0.2	0.8	0.8	0.3	0.5	0.6	2.7	5.4	4.0	0.1	5.7	5.9
Cycle Q Clear(g_c), s	0.2	0.8	0.8	0.3	0.5	0.6	2.7	5.4	4.0	0.1	5.7	5.9
Prop In Lane	1.00		0.28	1.00		0.61	1.00		1.00	1.00		0.67
Lane Grp Cap(c), veh/h	151	151	151	366	188	179	142	967	432	4	331	312
V/C Ratio(X)	0.05	0.23	0.24	0.08	0.12	0.14	0.77	0.53	0.41	0.46	0.70	0.72
Avail Cap(c_a), veh/h	252	252	253	617	317	301	315	1107	495	207	435	410
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	17.7	18.0	18.0	16.8	16.8	16.9	18.9	12.5	12.0	21.0	15.5	15.5
Incr Delay (d2), s/veh	0.1	0.8	0.8	0.1	0.3	0.3	8.4	0.4	0.6	60.6	3.4	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.4	0.2	0.3	0.3	1.6	2.5	1.7	0.1	2.8	2.8
LnGrp Delay(d),s/veh	17.9	18.7	18.8	16.8	17.1	17.2	27.3	12.9	12.6	81.6	18.8	19.8
LnGrp LOS	B	B	B	B	B	B	C	B	B	F	B	B
Approach Vol, veh/h		78			77			794			460	
Approach Delay, s/veh		18.7			17.0			14.8			19.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	18.1		9.4	7.6	14.6		10.6				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	14.1		6.0	8.0	11.6		8.0				
Max Q Clear Time (g_c+I), s	11.5	7.4		2.8	4.7	7.9		2.6				
Green Ext Time (p_c), s	0.0	2.1		0.1	0.1	0.9		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				16.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd












2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	80	353	301	291	465	22		
Future Volume (veh/h)	80	353	301	291	465	22		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1881	1712	1667	1900		
Adj Flow Rate, veh/h	87	384	327	316	505	24		
Adj No. of Lanes	1	2	1	2	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	1	11	14	14		
Cap, veh/h	263	1053	412	1851	744	35		
Arrive On Green	0.15	0.15	0.23	0.57	0.24	0.24		
Sat Flow, veh/h	1774	2787	1792	3338	3162	146		
Grp Volume(v), veh/h	87	384	327	316	259	270		
Grp Sat Flow(s),veh/h/ln	1774	1393	1792	1626	1583	1641		
Q Serve(g_s), s	1.8	4.1	7.1	1.9	6.1	6.1		
Cycle Q Clear(g_c), s	1.8	4.1	7.1	1.9	6.1	6.1		
Prop In Lane	1.00	1.00	1.00			0.09		
Lane Grp Cap(c), veh/h	263	1053	412	1851	383	397		
V/C Ratio(X)	0.33	0.36	0.79	0.17	0.68	0.68		
Avail Cap(c_a), veh/h	268	1061	742	2949	625	648		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.7	9.2	14.9	4.2	14.1	14.1		
Incr Delay (d2), s/veh	0.7	0.2	3.5	0.0	2.1	2.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	3.6	3.9	0.8	2.9	3.0		
LnGrp Delay(d),s/veh	16.4	9.4	18.4	4.3	16.2	16.2		
LnGrp LOS	B	A	B	A	B	B		
Approach Vol, veh/h	471			643	529			
Approach Delay, s/veh	10.7			11.5	16.2			
Approach LOS	B			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		29.1		11.9	13.4	15.7		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		37.2		6.2	17.0	16.2		
Max Q Clear Time (g_c+1), s		3.9		6.1	9.1	8.1		
Green Ext Time (p_c), s		1.9		0.0	0.6	1.8		
Intersection Summary								
HCM 2010 Ctrl Delay			12.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	22	563	303	15	294	513		
Future Volume (veh/h)	22	563	303	15	294	513		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1743	1712	1900	1667	1667		
Adj Flow Rate, veh/h	24	612	329	16	320	558		
Adj No. of Lanes	1	1	2	0	2	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	9	9	11	11	14	14		
Cap, veh/h	550	720	550	27	476	1317		
Arrive On Green	0.33	0.33	0.17	0.17	0.15	0.42		
Sat Flow, veh/h	1660	1482	3243	153	3079	3250		
Grp Volume(v), veh/h	24	612	169	176	320	558		
Grp Sat Flow(s),veh/h/ln	1660	1482	1626	1685	1540	1583		
Q Serve(g_s), s	0.5	15.2	4.4	4.4	4.5	5.7		
Cycle Q Clear(g_c), s	0.5	15.2	4.4	4.4	4.5	5.7		
Prop In Lane	1.00	1.00		0.09	1.00			
Lane Grp Cap(c), veh/h	550	720	283	294	476	1317		
V/C Ratio(X)	0.04	0.85	0.60	0.60	0.67	0.42		
Avail Cap(c_a), veh/h	550	720	326	338	1007	1946		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.4	10.3	17.5	17.5	18.3	9.5		
Incr Delay (d2), s/veh	0.0	9.5	2.3	2.3	1.7	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	8.5	2.1	2.2	2.0	2.5		
LnGrp Delay(d),s/veh	10.4	19.9	19.7	19.7	20.0	9.7		
LnGrp LOS	B	B	B	B	B	A		
Approach Vol, veh/h	636		345			878		
Approach Delay, s/veh	19.5		19.7			13.5		
Approach LOS	B		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.1	13.8				24.9		21.0
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	15.0	9.2				28.2		15.2
Max Q Clear Time (g_c+I1), s	6.5	6.4				7.7		17.2
Green Ext Time (p_c), s	0.7	0.5				3.4		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			16.7					
HCM 2010 LOS			B					

HCM Signalized Intersection Capacity Analysis
20: SR-33 & Baldwin Rd

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	470	11	3	840	453	82
Future Volume (vph)	470	11	3	840	453	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.97		1.00	1.00	0.95	
Frt	1.00		1.00	1.00	0.98	
Flt Protected	0.95		0.95	1.00	1.00	
Satd. Flow (prot)	3213		1787	1712	3094	
Flt Permitted	0.95		0.95	1.00	1.00	
Satd. Flow (perm)	3213		1787	1712	3094	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	511	12	3	913	492	89
RTOR Reduction (vph)	2	0	0	0	20	0
Lane Group Flow (vph)	521	0	3	913	561	0
Heavy Vehicles (%)	9%	9%	1%	11%	14%	14%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	13.1		1.0	38.6	33.6	
Effective Green, g (s)	13.1		1.0	38.6	33.6	
Actuated g/C Ratio	0.21		0.02	0.61	0.53	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	664		28	1043	1642	
v/s Ratio Prot	c0.16		0.00	c0.53	0.18	
v/s Ratio Perm						
v/c Ratio	0.78		0.11	0.88	0.34	
Uniform Delay, d1	23.8		30.7	10.3	8.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	6.0		1.7	8.4	0.1	
Delay (s)	29.8		32.4	18.7	8.6	
Level of Service	C		C	B	A	
Approach Delay (s)	29.8			18.7	8.6	
Approach LOS	C			B	A	

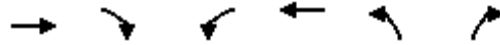
Intersection Summary

HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	15.6
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
21: Rogers Rd & SR-33

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵↵	
Traffic Volume (vph)	532	135	6	395	428	60
Future Volume (vph)	532	135	6	395	428	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.95		1.00	1.00	0.97	
Frt	0.97		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3153		1583	1667	2937	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	3153		1583	1667	2937	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	578	147	7	429	465	65
RTOR Reduction (vph)	40	0	0	0	21	0
Lane Group Flow (vph)	685	0	7	429	509	0
Heavy Vehicles (%)	11%	11%	14%	14%	18%	18%
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	14.8		0.7	19.5	12.1	
Effective Green, g (s)	14.8		0.7	19.5	12.1	
Actuated g/C Ratio	0.34		0.02	0.45	0.28	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1080		25	752	822	
v/s Ratio Prot	0.22		0.00	c0.26	c0.17	
v/s Ratio Perm						
v/c Ratio	0.63		0.28	0.57	0.62	
Uniform Delay, d1	11.9		21.0	8.8	13.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2		6.0	1.0	1.4	
Delay (s)	13.2		27.0	9.8	14.9	
Level of Service	B		C	A	B	
Approach Delay (s)	13.2			10.1	14.9	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	15.6
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
 22: Sycamore Ave & Eucalyptus Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	59	148	103	0	558	28	76	292	0	0	267	22
Future Volume (veh/h)	59	148	103	0	558	28	76	292	0	0	267	22
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	1900	1759	1900	1900	1743	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	64	161	112	0	607	30	83	317	0	0	290	24
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	2	2	2
Cap, veh/h	137	270	150	0	735	36	172	428	0	0	564	47
Arrive On Green	0.45	0.45	0.45	0.00	0.45	0.45	0.33	0.33	0.00	0.00	0.33	0.33
Sat Flow, veh/h	70	604	336	0	1647	81	196	1288	0	0	1697	140
Grp Volume(v), veh/h	337	0	0	0	0	637	400	0	0	0	0	314
Grp Sat Flow(s),veh/h/ln1010	0	0	0	0	0	1729	1483	0	0	0	0	1838
Q Serve(g_s), s	2.1	0.0	0.0	0.0	0.0	13.1	4.8	0.0	0.0	0.0	0.0	5.6
Cycle Q Clear(g_c), s	15.2	0.0	0.0	0.0	0.0	13.1	10.4	0.0	0.0	0.0	0.0	5.6
Prop In Lane	0.19		0.33	0.00		0.05	0.21		0.00	0.00		0.08
Lane Grp Cap(c), veh/h	556	0	0	0	0	772	600	0	0	0	0	611
V/C Ratio(X)	0.61	0.00	0.00	0.00	0.00	0.83	0.67	0.00	0.00	0.00	0.00	0.51
Avail Cap(c_a), veh/h	712	0	0	0	0	974	782	0	0	0	0	818
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	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	0.0	0.0	9.9	12.4	0.0	0.0	0.0	0.0	10.9
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.0	0.0	4.8	1.4	0.0	0.0	0.0	0.0	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/ln2.8	0.0	0.0	0.0	0.0	0.0	7.2	4.3	0.0	0.0	0.0	0.0	2.9
LnGrp Delay(d),s/veh	9.5	0.0	0.0	0.0	0.0	14.6	13.8	0.0	0.0	0.0	0.0	11.6
LnGrp LOS	A					B	B					B
Approach Vol, veh/h		337				637		400				314
Approach Delay, s/veh		9.5				14.6		13.8				11.6
Approach LOS		A				B		B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.0		22.6		18.0		22.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.1		22.9		18.1		22.9				
Max Q Clear Time (g_c+1), s		12.4		17.2		7.6		15.1				
Green Ext Time (p_c), s		1.1		0.9		1.2		2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				12.8								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
23: Elm Ave & Eucalyptus Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↗		↔		↖	↖			↔	
Traffic Volume (veh/h)	25	25	225	1	4	0	237	474	17	1	20	1
Future Volume (veh/h)	25	25	225	1	4	0	237	474	17	1	20	1
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	1900	1759	1759	1900	1743	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	27	27	245	1	4	0	258	515	18	1	22	1
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	2	2	2
Cap, veh/h	327	234	330	195	340	0	876	767	27	153	745	33
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.00	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	527	1061	1495	120	1541	0	1383	1789	63	16	1738	76
Grp Volume(v), veh/h	54	0	245	5	0	0	258	0	533	24	0	0
Grp Sat Flow(s),veh/h/ln1588	0	1495	1661	0	0	1383	0	1852	1831	0	0	0
Q Serve(g_s), s	0.0	0.0	3.9	0.0	0.0	0.0	3.1	0.0	5.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	3.9	0.1	0.0	0.0	3.3	0.0	5.9	0.2	0.0	0.0
Prop In Lane	0.50		1.00	0.20		0.00	1.00		0.03	0.04		0.04
Lane Grp Cap(c), veh/h	561	0	330	534	0	0	876	0	794	931	0	0
V/C Ratio(X)	0.10	0.00	0.74	0.01	0.00	0.00	0.29	0.00	0.67	0.03	0.00	0.00
Avail Cap(c_a), veh/h	882	0	647	859	0	0	1356	0	1436	1543	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	0.0	9.3	7.8	0.0	0.0	5.1	0.0	5.9	4.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	3.3	0.0	0.0	0.0	0.2	0.0	1.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.3	0.0	1.9	0.0	0.0	0.0	0.0	1.3	0.0	3.2	0.1	0.0	0.0
LnGrp Delay(d),s/veh	8.1	0.0	12.6	7.8	0.0	0.0	5.3	0.0	6.9	4.3	0.0	0.0
LnGrp LOS	A		B	A			A		A	A		
Approach Vol, veh/h		299			5			791			24	
Approach Delay, s/veh		11.8			7.8			6.4			4.3	
Approach LOS		B			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.5		10.2		15.5		10.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.9		11.1		19.9		11.1				
Max Q Clear Time (g_c+11), s		7.9		5.9		2.2		2.1				
Green Ext Time (p_c), s		3.1		0.5		0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				7.8								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	15	545	8	11	403	44	12	121	219	54	36	14
Future Volume (veh/h)	15	545	8	11	403	44	12	121	219	54	36	14
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	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	16	592	9	12	438	48	13	132	238	59	39	15
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	30	649	10	25	606	66	441	148	268	125	91	35
Arrive On Green	0.02	0.39	0.39	0.01	0.39	0.39	0.25	0.25	0.25	0.07	0.07	0.07
Sat Flow, veh/h	1616	1667	25	1691	1573	172	1774	597	1076	1774	1282	493
Grp Volume(v), veh/h	16	0	601	12	0	486	13	0	370	59	0	54
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1745	1774	0	1673	1774	0	1776
Q Serve(g_s), s	0.8	0.0	26.0	0.5	0.0	18.4	0.4	0.0	16.5	2.5	0.0	2.3
Cycle Q Clear(g_c), s	0.8	0.0	26.0	0.5	0.0	18.4	0.4	0.0	16.5	2.5	0.0	2.3
Prop In Lane	1.00		0.01	1.00		0.10	1.00		0.64	1.00		0.28
Lane Grp Cap(c), veh/h	30	0	659	25	0	672	441	0	416	125	0	126
V/C Ratio(X)	0.53	0.00	0.91	0.48	0.00	0.72	0.03	0.00	0.89	0.47	0.00	0.43
Avail Cap(c_a), veh/h	104	0	770	109	0	794	509	0	480	142	0	142
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	22.4	37.8	0.0	20.3	22.0	0.0	28.0	34.6	0.0	34.5
Incr Delay (d2), s/veh	13.4	0.0	13.8	13.8	0.0	2.7	0.0	0.0	16.7	2.7	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	14.6	0.3	0.0	9.3	0.2	0.0	9.5	1.3	0.0	1.2
LnGrp Delay(d),s/veh	51.0	0.0	36.2	51.6	0.0	22.9	22.0	0.0	44.7	37.3	0.0	36.8
LnGrp LOS	D		D	D		C	C		D	D		D
Approach Vol, veh/h		617			498			383			113	
Approach Delay, s/veh		36.6			23.6			43.9			37.0	
Approach LOS		D			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.1	5.1	35.9		11.3	5.5	35.6				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		22.2	5.0	35.2		6.2	5.0	35.2				
Max Q Clear Time (g_c+I1), s		18.5	2.5	28.0		4.5	2.8	20.4				
Green Ext Time (p_c), s		0.7	0.0	2.1		0.0	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			34.4									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	465	5	17	555	58	59	59	152	184	19	22
Future Volume (veh/h)	2	465	5	17	555	58	59	59	152	184	19	22
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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	505	5	18	603	63	64	64	165	200	21	24
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	4	695	7	38	686	72	156	117	236	361	36	29
Arrive On Green	0.00	0.41	0.41	0.02	0.43	0.43	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1616	1677	17	1691	1581	165	271	483	972	934	150	118
Grp Volume(v), veh/h	2	0	510	18	0	666	293	0	0	245	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1693	1691	0	1747	1726	0	0	1201	0	0
Q Serve(g_s), s	0.1	0.0	12.3	0.5	0.0	17.0	0.0	0.0	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	12.3	0.5	0.0	17.0	7.4	0.0	0.0	9.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.22		0.56	0.82		0.10
Lane Grp Cap(c), veh/h	4	0	702	38	0	758	510	0	0	426	0	0
V/C Ratio(X)	0.45	0.00	0.73	0.48	0.00	0.88	0.57	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	166	0	876	174	0	903	586	0	0	485	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.3	0.0	11.9	23.5	0.0	12.6	16.8	0.0	0.0	17.5	0.0	0.0
Incr Delay (d2), s/veh	58.5	0.0	2.3	9.2	0.0	8.7	1.0	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.1	0.3	0.0	9.8	3.7	0.0	0.0	3.3	0.0	0.0
LnGrp Delay(d),s/veh	82.8	0.0	14.3	32.7	0.0	21.3	17.8	0.0	0.0	18.8	0.0	0.0
LnGrp LOS	F		B	C		C	B			B		
Approach Vol, veh/h		512			684			293			245	
Approach Delay, s/veh		14.5			21.6			17.8			18.8	
Approach LOS		B			C			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		17.6	5.1	26.0		17.6	4.1	26.9				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		14.2	5.0	25.2		14.2	5.0	25.2				
Max Q Clear Time (g_c+1), s		9.4	2.5	14.3		11.5	2.1	19.0				
Green Ext Time (p_c), s		0.7	0.0	2.2		0.3	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				18.5								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis
26: Las Palmas Ave/W Main Ave & Jennings Rd

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	427	743	462	3	20	895
Future Volume (vph)	427	743	462	3	20	895
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	1.00	1.00		1.00	0.95
Frt	1.00	1.00	1.00		0.86	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1626	1712	1808		1592	1504
Flt Permitted	0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1626	1712	1808		1592	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	464	808	502	3	22	973
RTOR Reduction (vph)	0	0	0	0	417	434
Lane Group Flow (vph)	464	808	505	0	82	62
Heavy Vehicles (%)	11%	11%	5%	5%	2%	2%
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	29.8	64.2	30.4		10.9	10.9
Effective Green, g (s)	29.8	64.2	30.4		10.9	10.9
Actuated g/C Ratio	0.34	0.74	0.35		0.13	0.13
Clearance Time (s)	4.0	5.8	5.8		5.8	5.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	558	1267	633		200	189
v/s Ratio Prot	c0.29	0.47	c0.28		c0.05	
v/s Ratio Perm						0.04
v/c Ratio	0.83	0.64	0.80		0.41	0.33
Uniform Delay, d1	26.1	5.5	25.4		34.9	34.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.2	1.1	6.9		1.4	1.0
Delay (s)	36.4	6.6	32.3		36.3	35.6
Level of Service	D	A	C		D	D
Approach Delay (s)		17.5	32.3		36.0	
Approach LOS		B	C		D	
Intersection Summary						
HCM 2000 Control Delay			26.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			86.7		Sum of lost time (s)	15.6
Intersection Capacity Utilization			80.7%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
27: SR-33 & New Connection (Project)

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	146	267	582	172	408	171
Future Volume (vph)	146	267	582	172	408	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	0.97	1.00	0.95	
Frt	0.95	0.85	1.00	1.00	0.96	
Flt Protected	0.97	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1715	1504	3433	1863	3382	
Flt Permitted	0.97	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1715	1504	3433	1863	3382	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	290	633	187	443	186
RTOR Reduction (vph)	25	168	0	0	47	0
Lane Group Flow (vph)	209	47	633	187	582	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.8	12.8	16.5	37.0	16.0	
Effective Green, g (s)	12.8	12.8	16.5	37.0	16.0	
Actuated g/C Ratio	0.22	0.22	0.28	0.63	0.27	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	373	327	963	1172	920	
v/s Ratio Prot	c0.12		c0.18	0.10	c0.17	
v/s Ratio Perm		0.03				
v/c Ratio	0.56	0.14	0.66	0.16	0.63	
Uniform Delay, d1	20.5	18.6	18.7	4.5	18.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.2	1.6	0.1	1.4	
Delay (s)	22.4	18.8	20.3	4.6	20.2	
Level of Service	C	B	C	A	C	
Approach Delay (s)	20.7			16.7	20.2	
Approach LOS	C			B	C	

Intersection Summary

HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
 28: Ward Ave & New Connection (Project)

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: AM Peak




















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	383	384	100	653	0	36	0	30	0	0	0
Future Volume (veh/h)	0	383	384	100	653	0	36	0	30	0	0	0
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	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	0	416	417	109	710	0	39	0	33	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	720	612	165	1129	0	484	0	223	0	5	0
Arrive On Green	0.00	0.39	0.39	0.09	0.61	0.00	0.14	0.00	0.14	0.00	0.00	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	3442	0	1583	0	1863	0
Grp Volume(v), veh/h	0	416	417	109	710	0	39	0	33	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	1721	0	1583	0	1863	0
Q Serve(g_s), s	0.0	6.3	7.8	2.1	8.6	0.0	0.3	0.0	0.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.3	7.8	2.1	8.6	0.0	0.3	0.0	0.6	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	5	720	612	165	1129	0	484	0	223	0	5	0
V/C Ratio(X)	0.00	0.58	0.68	0.66	0.63	0.00	0.08	0.00	0.15	0.00	0.00	0.00
Avail Cap(c_a), veh/h	250	1410	1199	429	1599	0	1792	0	825	0	944	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.6	9.1	15.6	4.5	0.0	13.3	0.0	13.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	1.3	4.5	0.6	0.0	0.1	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	3.6	1.2	4.5	0.0	0.2	0.0	0.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	9.3	10.4	20.1	5.0	0.0	13.3	0.0	13.7	0.0	0.0	0.0
LnGrp LOS		A	B	C	A		B		B			
Approach Vol, veh/h		833			819			72			0	
Approach Delay, s/veh		9.9			7.0			13.5			0.0	
Approach LOS		A			A			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.5	7.8	18.2		0.0	0.0	26.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	8.6	26.9		18.0	5.0	30.5				
Max Q Clear Time (g_c+1), s		2.6	4.1	9.8		0.0	0.0	10.6				
Green Ext Time (p_c), s		0.2	0.1	3.9		0.0	0.0	5.0				
Intersection Summary												
HCM 2010 Ctrl Delay				8.7								
HCM 2010 LOS				A								

HCM Signalized Intersection Capacity Analysis
1: I-5 SB Ramps & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)





















Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	97	29	364	150	0	0	0	0	632	1	124
Future Volume (vph)	0	97	29	364	150	0	0	0	0	632	1	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.95	
Flt Protected		1.00		0.95	0.98					0.95	0.97	
Satd. Flow (prot)		3291		1429	1495					1429	1395	
Flt Permitted		1.00		0.95	0.98					0.95	0.97	
Satd. Flow (perm)		3291		1429	1495					1429	1395	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	105	32	396	163	0	0	0	0	687	1	135
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	0	0	19	0
Lane Group Flow (vph)	0	109	0	277	282	0	0	0	0	419	385	0
Confl. Peds. (#/hr)						1						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	1%	20%	20%	17%	0%	0%	0%	0%	20%	20%	17%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		12.0		21.7	21.7					42.1	42.1	
Effective Green, g (s)		12.0		21.7	21.7					42.1	42.1	
Actuated g/C Ratio		0.13		0.24	0.24					0.47	0.47	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		438		344	360					668	652	
v/s Ratio Prot		c0.03		c0.19	0.19					c0.29	0.28	
v/s Ratio Perm												
v/c Ratio		0.25		0.81	0.78					0.63	0.59	
Uniform Delay, d1		35.0		32.2	32.0					18.0	17.6	
Progression Factor		1.00		0.16	0.16					1.00	1.00	
Incremental Delay, d2		0.3		10.7	8.9					4.4	3.9	
Delay (s)		35.3		15.9	13.9					22.5	21.5	
Level of Service		D		B	B					C	C	
Approach Delay (s)		35.3			14.9			0.0			22.0	
Approach LOS		D			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			20.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			14.2			
Intersection Capacity Utilization			57.2%			ICU Level of Service				B		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis
2: I-5 NB Ramps & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)





























Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				 			
Traffic Volume (vph)	92	637	0	0	484	486	30	3	591	0	0	0
Future Volume (vph)	92	637	0	0	484	486	30	3	591	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.99			1.00	1.00		0.96	1.00			
Satd. Flow (prot)		3147			3008	1468		1817	2450			
Flt Permitted		0.99			1.00	1.00		0.96	1.00			
Satd. Flow (perm)		3147			3008	1468		1817	2450			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	692	0	0	526	528	33	3	642	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	126	0	0	0
Lane Group Flow (vph)	0	792	0	0	526	528	0	36	516	0	0	0
Heavy Vehicles (%)	0%	16%	0%	0%	20%	10%	0%	0%	16%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2 4!	4	4!	6			
Permitted Phases						6			4			
Actuated Green, G (s)		39.8			22.9	79.8		12.0	34.9			
Effective Green, g (s)		39.8			22.9	79.8		12.0	34.9			
Actuated g/C Ratio		0.44			0.25	0.89		0.13	0.39			
Clearance Time (s)		5.1			5.1			5.1	5.1			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		1391			765	1468		242	1088			
v/s Ratio Prot		c0.25			c0.17	0.23		0.02	c0.12			
v/s Ratio Perm						0.13			0.09			
v/c Ratio		0.57			0.69	0.36		0.15	0.47			
Uniform Delay, d1		18.7			30.3	0.8		34.5	20.7			
Progression Factor		0.40			0.43	1.00		1.00	1.00			
Incremental Delay, d2		1.4			2.1	0.1		0.3	0.3			
Delay (s)		9.0			15.1	1.0		34.8	21.0			
Level of Service		A			B	A		C	C			
Approach Delay (s)		9.0			8.0			21.7			0.0	
Approach LOS		A			A			C			A	
Intersection Summary												
HCM 2000 Control Delay			12.0				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		15.3			
Intersection Capacity Utilization			73.1%				ICU Level of Service		D			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
3: Sperry Ave & Rogers Rd

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 						 	
Traffic Volume (vph)	436	525	267	113	483	192	278	8	117	139	0	209
Future Volume (vph)	436	525	267	113	483	192	278	8	117	139	0	209
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3213	3008	1583	1770	3139	1547	1770	1863	1583	1649	1397	1421
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3213	3008	1583	1770	3139	1547	1770	1863	1583	1649	1397	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	474	571	290	123	525	209	302	9	127	151	0	227
RTOR Reduction (vph)	0	0	193	0	0	156	0	0	100	0	112	90
Lane Group Flow (vph)	474	571	97	123	525	53	302	9	27	131	12	33
Confl. Peds. (#/hr)	1											
Heavy Vehicles (%)	9%	20%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	15.9	30.0	30.0	10.8	22.9	22.9	19.2	19.2	19.2	8.5	8.5	24.4
Effective Green, g (s)	15.9	30.0	30.0	10.8	22.9	22.9	19.2	19.2	19.2	8.5	8.5	24.4
Actuated g/C Ratio	0.18	0.33	0.33	0.12	0.25	0.25	0.21	0.21	0.21	0.09	0.09	0.27
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	567	1002	527	212	798	393	377	397	337	155	131	487
v/s Ratio Prot	c0.15	0.19		0.07	c0.17		c0.17	0.00		c0.08	0.01	0.01
v/s Ratio Perm			0.06			0.03			0.02			0.01
v/c Ratio	0.84	0.57	0.18	0.58	0.66	0.14	0.80	0.02	0.08	0.85	0.09	0.07
Uniform Delay, d1	35.8	24.7	21.3	37.5	30.0	25.9	33.6	28.0	28.3	40.1	37.2	24.4
Progression Factor	0.84	0.80	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8	2.0	0.6	4.0	4.2	0.7	11.6	0.0	0.1	32.2	0.3	0.1
Delay (s)	39.0	21.8	22.2	41.5	34.3	26.6	45.2	28.0	28.4	72.3	37.5	24.4
Level of Service	D	C	C	D	C	C	D	C	C	E	D	C
Approach Delay (s)		28.0			33.4			40.0			45.3	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			33.5	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			90.0	Sum of lost time (s)				23.5				
Intersection Capacity Utilization			68.3%	ICU Level of Service				C				
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↔		↔	↑↑	↔	↔	↑	↔	↔	↔	↔
Traffic Volume (veh/h)	198	558	86	10	550	70	21	64	32	122	71	272
Future Volume (veh/h)	198	558	86	10	550	70	21	64	32	122	71	272
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1583	1762	1900	1900	1827	1583	1900	1900	1900	1583	1640	1900
Adj Flow Rate, veh/h	215	607	93	11	598	76	23	70	35	133	77	296
Adj No. of Lanes	2	2	0	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	310	1176	180	30	1098	420	206	208	177	188	94	360
Arrive On Green	0.11	0.41	0.41	0.02	0.32	0.32	0.11	0.11	0.11	0.12	0.32	0.32
Sat Flow, veh/h	2925	2903	444	1810	3471	1329	1025	1900	1615	1508	297	1141
Grp Volume(v), veh/h	215	349	351	11	598	76	23	70	35	133	0	373
Grp Sat Flow(s),veh/h/ln	1463	1674	1673	1810	1736	1329	1025	1900	1615	1508	0	1438
Q Serve(g_s), s	4.0	8.8	8.8	0.3	8.0	2.3	1.2	1.9	1.1	4.7	0.0	13.4
Cycle Q Clear(g_c), s	4.0	8.8	8.8	0.3	8.0	2.3	3.1	1.9	1.1	4.7	0.0	13.4
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.79
Lane Grp Cap(c), veh/h	310	678	678	30	1098	420	206	208	177	188	0	453
V/C Ratio(X)	0.69	0.52	0.52	0.36	0.54	0.18	0.11	0.34	0.20	0.71	0.00	0.82
Avail Cap(c_a), veh/h	445	1117	1116	194	2160	827	466	690	586	329	0	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	12.5	12.5	27.2	15.8	13.9	24.5	23.0	22.7	23.5	0.0	17.7
Incr Delay (d2), s/veh	2.8	1.3	1.3	7.0	0.9	0.4	0.2	0.9	0.5	4.8	0.0	3.8
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	1.7	4.2	4.2	0.2	4.0	0.9	0.3	1.0	0.5	2.2	0.0	5.8
LnGrp Delay(d),s/veh	26.9	13.8	13.8	34.2	16.7	14.3	24.7	24.0	23.2	28.3	0.0	21.5
LnGrp LOS	C	B	B	C	B	B	C	C	C	C		C
Approach Vol, veh/h		915			685			128			506	
Approach Delay, s/veh		16.9			16.7			23.9			23.3	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	28.4		22.1	10.4	23.4	11.5	10.6				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7	4.5	4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	8.5	34.8	12.2	20.3				
Max Q Clear Time (g_c+1/3), s	10.8	10.8		15.4	6.0	10.0	6.7	5.1				
Green Ext Time (p_c), s	0.0	8.2		2.3	0.2	7.7	0.1	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				18.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	502	120	11	482	163	90	325	12	258	480	72
Future Volume (veh/h)	174	502	120	11	482	163	90	325	12	258	480	72
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1841	1900	1900	1792	1863	1900	1810	1900	1827	1900	1863
Adj Flow Rate, veh/h	189	546	130	12	524	177	98	353	13	280	522	78
Adj No. of Lanes	1	2	0	1	2	1	2	1	0	2	1	1
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, %	6	4	4	0	6	2	0	5	5	4	0	2
Cap, veh/h	227	967	229	32	786	365	246	484	18	365	602	501
Arrive On Green	0.13	0.35	0.35	0.02	0.23	0.23	0.07	0.28	0.28	0.11	0.32	0.32
Sat Flow, veh/h	1707	2793	662	1810	3406	1583	3510	1734	64	3375	1900	1583
Grp Volume(v), veh/h	189	341	335	12	524	177	98	0	366	280	522	78
Grp Sat Flow(s),veh/h/ln	1707	1749	1707	1810	1703	1583	1755	0	1798	1688	1900	1583
Q Serve(g_s), s	8.0	11.8	11.9	0.5	10.4	7.2	2.0	0.0	13.7	6.0	19.2	2.6
Cycle Q Clear(g_c), s	8.0	11.8	11.9	0.5	10.4	7.2	2.0	0.0	13.7	6.0	19.2	2.6
Prop In Lane	1.00		0.39	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	227	605	591	32	786	365	246	0	501	365	602	501
V/C Ratio(X)	0.83	0.56	0.57	0.37	0.67	0.48	0.40	0.00	0.73	0.77	0.87	0.16
Avail Cap(c_a), veh/h	294	700	683	146	1051	489	284	0	654	400	763	636
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	19.7	19.7	36.0	25.9	24.7	33.0	0.0	24.2	32.2	23.9	18.2
Incr Delay (d2), s/veh	11.6	1.8	1.8	14.8	2.1	2.1	0.4	0.0	2.9	6.9	8.6	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	4.5	6.0	5.9	0.4	5.1	3.4	1.0	0.0	7.2	3.1	11.4	1.2
LnGrp Delay(d),s/veh	43.0	21.5	21.6	50.8	28.0	26.8	33.4	0.0	27.2	39.1	32.5	18.4
LnGrp LOS	D	C	C	D	C	C	C		C	D	C	B
Approach Vol, veh/h		865			713			464			880	
Approach Delay, s/veh		26.2			28.1			28.5			33.3	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	31.2	9.4	28.1	14.1	22.6	12.2	25.3				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	29.7	* 6	29.8	* 13	22.9	* 8.8	27.0				
Max Q Clear Time (g_c+1), s	12.5	13.9	4.0	21.2	10.0	12.4	8.0	15.7				
Green Ext Time (p_c), s	0.0	6.1	0.0	2.3	0.1	4.8	0.1	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay				29.2								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	93	587	36	83	673	89	10	32	22	38	28	35
Future Volume (veh/h)	93	587	36	83	673	89	10	32	22	38	28	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1814	1900	1863	1885	1900	1881	1900	1900
Adj Flow Rate, veh/h	101	638	39	90	732	97	11	35	24	41	30	38
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	173	1221	75	158	1100	146	260	117	80	269	86	109
Arrive On Green	0.10	0.37	0.37	0.09	0.36	0.36	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	3345	204	1757	3059	405	1312	1026	704	1335	757	959
Grp Volume(v), veh/h	101	333	344	90	412	417	11	0	59	41	0	68
Grp Sat Flow(s),veh/h/ln	1810	1749	1800	1757	1723	1741	1312	0	1730	1335	0	1715
Q Serve(g_s), s	2.4	6.8	6.8	2.2	9.1	9.1	0.4	0.0	1.4	1.3	0.0	1.7
Cycle Q Clear(g_c), s	2.4	6.8	6.8	2.2	9.1	9.1	2.0	0.0	1.4	2.7	0.0	1.7
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	173	639	657	158	619	626	260	0	197	269	0	195
V/C Ratio(X)	0.59	0.52	0.52	0.57	0.67	0.67	0.04	0.00	0.30	0.15	0.00	0.35
Avail Cap(c_a), veh/h	260	852	876	253	839	847	750	0	842	767	0	835
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.6	11.3	11.3	19.7	12.2	12.2	19.4	0.0	18.4	19.6	0.0	18.5
Incr Delay (d2), s/veh	3.1	0.9	0.9	3.2	1.8	1.7	0.1	0.0	0.8	0.3	0.0	1.1
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	1.4	3.4	3.5	1.2	4.5	4.6	0.1	0.0	0.7	0.5	0.0	0.8
LnGrp Delay(d),s/veh	22.7	12.2	12.2	22.9	13.9	13.9	19.5	0.0	19.2	19.9	0.0	19.6
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		778			919			70			109	
Approach Delay, s/veh		13.6			14.8			19.3			19.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	23.0		11.6	10.8	22.7		11.6				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.0	22.0		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1/2), s	11.2	8.8		4.7	4.4	11.1		4.0				
Green Ext Time (p_c), s	0.0	4.4		0.4	0.0	5.0		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			14.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Volume (veh/h)	138	367	48	268	423	132	29	107	82	148	357	55
Future Volume (veh/h)	138	367	48	268	423	132	29	107	82	148	357	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1795	1900	1792	1831	1900	1900	1827	1827	1900	1863	1776
Adj Flow Rate, veh/h	150	399	52	291	460	143	32	116	89	161	388	60
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
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, %	0	4	4	6	4	4	0	4	4	0	2	7
Cap, veh/h	191	637	82	345	761	235	233	564	479	424	575	457
Arrive On Green	0.11	0.21	0.21	0.20	0.29	0.29	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	3030	392	1707	2610	805	955	1827	1551	1195	1863	1483
Grp Volume(v), veh/h	150	223	228	291	305	298	32	116	89	161	388	60
Grp Sat Flow(s),veh/h/ln	1810	1705	1716	1707	1740	1676	955	1827	1551	1195	1863	1483
Q Serve(g_s), s	5.2	7.7	7.8	10.6	9.7	9.9	2.0	3.0	2.7	7.4	11.7	1.9
Cycle Q Clear(g_c), s	5.2	7.7	7.8	10.6	9.7	9.9	13.7	3.0	2.7	10.4	11.7	1.9
Prop In Lane	1.00		0.23	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	358	361	345	507	488	233	564	479	424	575	457
V/C Ratio(X)	0.79	0.62	0.63	0.84	0.60	0.61	0.14	0.21	0.19	0.38	0.68	0.13
Avail Cap(c_a), veh/h	281	582	586	556	863	832	442	963	818	686	982	782
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	23.1	23.2	24.7	19.6	19.7	25.5	16.5	16.4	20.3	19.5	16.1
Incr Delay (d2), s/veh	8.6	3.8	3.9	6.5	2.5	2.6	0.6	0.4	0.4	1.2	3.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	4.0	4.1	5.6	5.0	4.9	0.6	1.6	1.2	2.6	6.5	0.8
LnGrp Delay(d),s/veh	36.7	26.9	27.0	31.2	22.1	22.3	26.0	16.8	16.8	21.5	22.4	16.3
LnGrp LOS	D	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		601			894			237			609	
Approach Delay, s/veh		29.4			25.1			18.1			21.6	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.6	19.6		25.9	13.8	24.8		25.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	21.6	22.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+1/2), s	12.6	9.8		13.7	7.2	11.9		15.7				
Green Ext Time (p_c), s	0.5	3.4		5.9	0.1	6.2		1.9				
Intersection Summary												
HCM 2010 Ctrl Delay			24.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	338	76	32	501	20	39	38	6	3	59	148
Future Volume (veh/h)	189	338	76	32	501	20	39	38	6	3	59	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	0.99		0.96	0.98		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1826	1900	1900	1759	1900	1900	1882	1900	1900	1874	1900
Adj Flow Rate, veh/h	205	367	83	35	545	22	42	41	7	3	64	161
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	479	1564	350	646	977	894	249	204	27	93	99	241
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	840	2817	630	954	1759	1611	565	988	131	7	477	1163
Grp Volume(v), veh/h	205	224	226	35	545	22	90	0	0	228	0	0
Grp Sat Flow(s),veh/h/ln	840	1734	1712	954	1759	1611	1684	0	0	1647	0	0
Q Serve(g_s), s	8.3	2.6	2.7	0.8	8.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.3	2.6	2.7	3.5	8.0	0.2	1.6	0.0	0.0	5.1	0.0	0.0
Prop In Lane	1.00		0.37	1.00		1.00	0.47		0.08	0.01		0.71
Lane Grp Cap(c), veh/h	479	963	951	646	977	894	481	0	0	432	0	0
V/C Ratio(X)	0.43	0.23	0.24	0.05	0.56	0.02	0.19	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	570	1150	1136	749	1167	1068	1046	0	0	1079	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.0	4.5	4.5	5.4	5.7	4.0	13.2	0.0	0.0	14.6	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.3	0.3	0.1	1.1	0.0	0.2	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.3	1.3	0.2	4.1	0.1	0.8	0.0	0.0	2.4	0.0	0.0
LnGrp Delay(d),s/veh	12.3	4.8	4.8	5.5	6.8	4.0	13.4	0.0	0.0	15.6	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		655			602			90			228	
Approach Delay, s/veh		7.1			6.6			13.4			15.6	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.8		13.2		26.8		13.2				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.5		24.0		26.5		24.0				
Max Q Clear Time (g_c+I1), s		18.3		3.6		10.0		7.1				
Green Ext Time (p_c), s		3.9		0.4		6.1		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				8.5								
HCM 2010 LOS				A								

HCM Signalized Intersection Capacity Analysis
9: SR-33 & Sperry Ave

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	138	161	21	76	9	161	390	70	21	259	190
Future Volume (vph)	201	138	161	21	76	9	161	390	70	21	259	190
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1641	1715		1583	1714		1736	1737		1805	1696	1468
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1641	1715		1583	1714		1736	1737		1805	1696	1468
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	150	175	23	83	10	175	424	76	23	282	207
RTOR Reduction (vph)	0	59	0	0	6	0	0	7	0	0	0	142
Lane Group Flow (vph)	218	266	0	23	87	0	175	493	0	23	282	65
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	10%	4%	0%	14%	9%	8%	4%	6%	12%	0%	12%	10%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	14.9	14.9		4.5	4.5		10.2	31.0		1.8	22.6	22.6
Effective Green, g (s)	14.9	14.9		4.5	4.5		10.2	31.0		1.8	22.6	22.6
Actuated g/C Ratio	0.21	0.21		0.06	0.06		0.14	0.43		0.03	0.32	0.32
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	341	356		99	107		246	751		45	534	462
v/s Ratio Prot	0.13	c0.15		0.01	c0.05		c0.10	c0.28		0.01	0.17	
v/s Ratio Perm												0.04
v/c Ratio	0.64	0.75		0.23	0.82		0.71	0.66		0.51	0.53	0.14
Uniform Delay, d1	25.9	26.6		32.0	33.2		29.3	16.1		34.5	20.2	17.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9	8.3		1.2	36.2		9.3	4.4		9.5	3.7	0.6
Delay (s)	29.9	34.9		33.2	69.4		38.7	20.6		44.0	23.9	18.2
Level of Service	C	C		C	E		D	C		D	C	B
Approach Delay (s)		32.9			62.2			25.3			22.5	
Approach LOS		C			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			71.7				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			59.2%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	87	57	74	83	12	63	424	139	104	530	24
Future Volume (veh/h)	12	87	57	74	83	12	63	424	139	104	530	24
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1667	1597	1597	1900
Adj Flow Rate, veh/h	13	95	62	80	90	13	68	461	151	113	576	26
Adj No. of Lanes	1	1	0	2	1	0	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, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	36	163	107	390	402	58	326	681	465	155	710	32
Arrive On Green	0.02	0.15	0.15	0.11	0.25	0.25	0.08	0.22	0.22	0.10	0.24	0.24
Sat Flow, veh/h	1774	1054	688	3442	1592	230	1587	3167	1417	1521	2957	133
Grp Volume(v), veh/h	13	0	157	80	0	103	68	461	151	113	295	307
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1721	0	1822	1587	1583	1417	1521	1517	1573
Q Serve(g_s), s	0.3	0.0	3.7	0.9	0.0	2.0	1.4	5.9	1.0	3.2	8.1	8.1
Cycle Q Clear(g_c), s	0.3	0.0	3.7	0.9	0.0	2.0	1.4	5.9	1.0	3.2	8.1	8.1
Prop In Lane	1.00		0.39	1.00		0.13	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	36	0	270	390	0	460	326	681	465	155	364	378
V/C Ratio(X)	0.37	0.00	0.58	0.21	0.00	0.22	0.21	0.68	0.32	0.73	0.81	0.81
Avail Cap(c_a), veh/h	241	0	343	2263	0	1318	420	1436	803	310	791	820
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	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	21.3	0.0	17.3	17.8	0.0	13.1	12.2	15.9	2.5	19.2	15.8	15.8
Incr Delay (d2), s/veh	2.3	0.0	0.7	0.1	0.0	0.1	0.1	0.4	0.1	2.4	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.8	0.4	0.0	1.0	0.6	2.6	0.7	1.4	3.5	3.7
LnGrp Delay(d),s/veh	23.7	0.0	18.1	17.8	0.0	13.1	12.3	16.3	2.6	21.7	17.5	17.4
LnGrp LOS	C		B	B		B	B	B	A	C	B	B
Approach Vol, veh/h		170			183			680			715	
Approach Delay, s/veh		18.5			15.2			12.9			18.1	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	11.0	8.5	14.4	4.9	16.3	7.4	15.5				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 8.7	9.0	20.0	6.0	* 32	6.0	23.0				
Max Q Clear Time (g_c+1/2g), s	12.9	5.7	5.2	7.9	2.3	4.0	3.4	10.1				
Green Ext Time (p_c), s	0.0	0.1	0.0	0.5	0.0	0.2	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			15.8									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	291	10	236	375	81	27	278	371	174	351	5
Future Volume (veh/h)	22	291	10	236	375	81	27	278	371	174	351	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.97	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	1778	1900	1845	1743	1900	1827	1881	1583	1743	1880	1900
Adj Flow Rate, veh/h	24	316	11	257	408	88	29	302	403	189	382	5
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	2	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, %	0	7	7	3	9	0	4	1	20	9	1	1
Cap, veh/h	281	415	14	401	605	546	424	1143	430	758	1286	17
Arrive On Green	0.03	0.24	0.24	0.13	0.35	0.35	0.03	0.32	0.32	0.07	0.36	0.36
Sat Flow, veh/h	1810	1707	59	1757	1743	1574	1740	3574	1344	3221	3610	47
Grp Volume(v), veh/h	24	0	327	257	408	88	29	302	403	189	189	198
Grp Sat Flow(s),veh/h/ln	1810	0	1766	1757	1743	1574	1740	1787	1344	1610	1786	1871
Q Serve(g_s), s	0.7	0.0	12.5	7.5	14.6	2.8	0.8	4.6	21.3	2.7	5.6	5.6
Cycle Q Clear(g_c), s	0.7	0.0	12.5	7.5	14.6	2.8	0.8	4.6	21.3	2.7	5.6	5.6
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	281	0	430	401	605	546	424	1143	430	758	637	667
V/C Ratio(X)	0.09	0.00	0.76	0.64	0.67	0.16	0.07	0.26	0.94	0.25	0.30	0.30
Avail Cap(c_a), veh/h	369	0	709	618	1011	912	562	1181	444	789	637	667
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	0.0	25.6	17.3	20.3	16.5	15.7	18.4	24.1	14.4	16.9	16.9
Incr Delay (d2), s/veh	0.0	0.0	1.1	0.6	0.5	0.1	0.0	0.0	26.8	0.1	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	0.4	0.0	6.2	3.6	7.0	1.2	0.4	2.3	11.0	1.2	2.7	2.9
LnGrp Delay(d),s/veh	20.1	0.0	26.7	17.9	20.8	16.5	15.7	18.5	51.0	14.4	17.0	17.0
LnGrp LOS	C		C	B	C	B	B	B	D	B	B	B
Approach Vol, veh/h		351			753			734			576	
Approach Delay, s/veh		26.2			19.3			36.2			16.2	
Approach LOS		C			B			D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	29.9	8.9	28.2	13.5	22.4	6.2	30.9				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	42.3	5.6	24.1	18.5	29.3	8.0	21.7				
Max Q Clear Time (g_c+I), s	12.7	16.6	4.7	23.3	9.5	14.5	2.8	7.6				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.1	0.0	0.4	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			24.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	136	136	33	142	163	120	556	13	119	847	31
Future Volume (veh/h)	41	136	136	33	142	163	120	556	13	119	847	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	45	148	148	36	154	177	130	604	14	129	921	34
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	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, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	271	375	319	132	309	319	159	1206	28	156	1144	42
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.38	0.38	0.10	0.38	0.38
Sat Flow, veh/h	1045	1863	1583	190	1534	1583	1587	3164	73	1521	2984	110
Grp Volume(v), veh/h	45	148	148	190	0	177	130	302	316	129	468	487
Grp Sat Flow(s),veh/h/ln	1045	1863	1583	1725	0	1583	1587	1583	1654	1521	1517	1577
Q Serve(g_s), s	1.8	3.2	3.8	0.7	0.0	4.6	3.7	6.7	6.7	3.8	12.6	12.6
Cycle Q Clear(g_c), s	6.1	3.2	3.8	4.2	0.0	4.6	3.7	6.7	6.7	3.8	12.6	12.6
Prop In Lane	1.00		1.00	0.19		1.00	1.00		0.04	1.00		0.07
Lane Grp Cap(c), veh/h	271	375	319	441	0	319	159	603	630	156	582	605
V/C Ratio(X)	0.17	0.39	0.46	0.43	0.00	0.56	0.82	0.50	0.50	0.82	0.80	0.80
Avail Cap(c_a), veh/h	481	749	637	770	0	637	215	699	730	233	696	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	15.9	16.1	16.3	0.0	16.4	20.2	10.8	10.8	20.1	12.6	12.6
Incr Delay (d2), s/veh	0.3	0.7	1.1	0.7	0.0	1.5	15.9	0.6	0.6	13.9	5.8	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.7	1.7	2.2	0.0	2.1	2.3	3.0	3.1	2.2	6.1	6.4
LnGrp Delay(d),s/veh	19.3	16.5	17.1	16.9	0.0	17.9	36.0	11.5	11.4	34.0	18.4	18.2
LnGrp LOS	B	B	B	B		B	D	B	B	C	B	B
Approach Vol, veh/h		341			367			748			1084	
Approach Delay, s/veh		17.2			17.4			15.7			20.2	
Approach LOS		B			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	23.2		13.8	8.6	23.3		13.8				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	20.2			18.4	6.2	21.0		18.4				
Max Q Clear Time (g_c+1/3), s	8.7			8.1	5.7	14.6		6.6				
Green Ext Time (p_c), s	0.0	2.6		1.1	0.0	2.9		1.4				
Intersection Summary												
HCM 2010 Ctrl Delay				18.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	84	50	44	390	1	112	2	37	0	3	1
Future Volume (veh/h)	1	84	50	44	390	1	112	2	37	0	3	1
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		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1583	1583	1728	1900	1583	1596	1900	1900	1652	1900
Adj Flow Rate, veh/h	1	91	54	48	424	1	122	2	40	0	3	1
Adj No. of Lanes	1	2	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	20	20	10	10	20	0	0	20	20	20
Cap, veh/h	5	1041	567	80	586	1	400	9	178	0	8	3
Arrive On Green	0.00	0.29	0.29	0.05	0.34	0.34	0.14	0.14	0.14	0.00	0.01	0.01
Sat Flow, veh/h	1810	3610	1327	1508	1723	4	2925	65	1299	0	1186	395
Grp Volume(v), veh/h	1	91	54	48	0	425	122	0	42	0	0	4
Grp Sat Flow(s),veh/h/ln	1810	1805	1327	1508	0	1727	1463	0	1364	0	0	1582
Q Serve(g_s), s	0.0	0.6	0.9	1.1	0.0	7.5	1.3	0.0	1.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	0.6	0.9	1.1	0.0	7.5	1.3	0.0	1.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.95	0.00		0.25
Lane Grp Cap(c), veh/h	5	1041	567	80	0	588	400	0	187	0	0	10
V/C Ratio(X)	0.19	0.09	0.10	0.60	0.00	0.72	0.30	0.00	0.23	0.00	0.00	0.39
Avail Cap(c_a), veh/h	259	2252	1011	289	0	1161	628	0	293	0	0	272
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	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	9.1	6.0	16.2	0.0	10.1	13.6	0.0	13.4	0.0	0.0	17.3
Incr Delay (d2), s/veh	17.2	0.0	0.1	6.9	0.0	1.7	0.4	0.0	0.6	0.0	0.0	22.0
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/lr	0.0	0.3	0.4	0.6	0.0	3.8	0.5	0.0	0.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	34.6	9.1	6.1	23.1	0.0	11.8	14.0	0.0	14.0	0.0	0.0	39.3
LnGrp LOS	C	A	A	C		B	B		B			D
Approach Vol, veh/h		146			473			164			4	
Approach Delay, s/veh		8.2			12.9			14.0			39.3	
Approach LOS		A			B			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.3	6.4	14.6		4.7	4.5	16.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		7.5	6.7	21.8		6.0	5.0	23.5				
Max Q Clear Time (g_c+1), s		3.3	3.1	2.9		2.1	2.0	9.5				
Green Ext Time (p_c), s		0.2	0.0	0.6		0.0	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay				12.4								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	21	1	32	61	68	1	163	58	55	63	31
Future Volume (veh/h)	15	21	1	32	61	68	1	163	58	55	63	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1583	1769	1900	1900	1863	1583	1743	1815	1900
Adj Flow Rate, veh/h	16	23	1	35	66	74	1	177	63	60	68	34
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	20	0	0	0	2	20	9	7	7
Cap, veh/h	36	328	14	120	157	176	5	758	288	202	315	157
Arrive On Green	0.02	0.18	0.18	0.04	0.21	0.21	0.00	0.21	0.21	0.06	0.28	0.28
Sat Flow, veh/h	1774	1772	77	2925	763	855	1810	3539	1346	3221	1143	571
Grp Volume(v), veh/h	16	0	24	35	0	140	1	177	63	60	0	102
Grp Sat Flow(s),veh/h/ln	1774	0	1849	1463	0	1618	1810	1770	1346	1610	0	1714
Q Serve(g_s), s	0.3	0.0	0.4	0.4	0.0	2.7	0.0	1.5	1.4	0.6	0.0	1.7
Cycle Q Clear(g_c), s	0.3	0.0	0.4	0.4	0.0	2.7	0.0	1.5	1.4	0.6	0.0	1.7
Prop In Lane	1.00		0.04	1.00		0.53	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	36	0	342	120	0	332	5	758	288	202	0	472
V/C Ratio(X)	0.44	0.00	0.07	0.29	0.00	0.42	0.20	0.23	0.22	0.30	0.00	0.22
Avail Cap(c_a), veh/h	245	0	991	404	0	854	250	2240	852	445	0	1109
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	0.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	12.2	16.8	0.0	12.5	18.0	11.8	11.7	16.2	0.0	10.1
Incr Delay (d2), s/veh	8.1	0.0	0.1	1.3	0.0	0.8	18.5	0.2	0.4	0.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	0.2	0.0	1.3	0.0	0.7	0.5	0.3	0.0	0.8
LnGrp Delay(d),s/veh	25.6	0.0	12.3	18.2	0.0	13.4	36.5	11.9	12.1	17.0	0.0	10.3
LnGrp LOS	C		B	B		B	D	B	B	B		B
Approach Vol, veh/h		40			175			241			162	
Approach Delay, s/veh		17.6			14.3			12.1			12.8	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	12.8	5.5	11.6	4.1	15.1	4.7	12.3				
Change Period (Y+Rc), s	4.0	5.1	4.0	* 4.9	4.0	* 5.1	4.0	4.9				
Max Green Setting (Gmax), s	5.0	22.9	5.0	* 19	5.0	* 23	5.0	19.1				
Max Q Clear Time (g_c+1), s	12.6	3.5	2.4	2.4	2.0	3.7	2.3	4.7				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.1	0.0	0.5	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				13.3								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	0	1	0	18	34	21	2	118	30	110	283	21
Future Volume (veh/h)	0	1	0	18	34	21	2	118	30	110	283	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	1810	1810	1810	1863	1863	1863	1597	1597	1597	1638	1638	1900
Adj Flow Rate, veh/h	0	1	0	20	37	23	2	128	33	120	308	23
Adj No. of Lanes	1	2	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, %	5	5	5	2	2	2	19	19	19	16	16	16
Cap, veh/h	5	9	4	315	170	298	4	669	299	151	923	69
Arrive On Green	0.00	0.00	0.00	0.09	0.09	0.09	0.00	0.22	0.22	0.10	0.31	0.31
Sat Flow, veh/h	1723	3438	1538	3442	1863	1583	1521	3034	1357	1560	2937	218
Grp Volume(v), veh/h	0	1	0	20	37	23	2	128	33	120	162	169
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1721	1863	1583	1521	1517	1357	1560	1556	1599
Q Serve(g_s), s	0.0	0.0	0.0	0.2	0.7	0.4	0.0	1.2	0.7	2.7	2.9	2.9
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.2	0.7	0.4	0.0	1.2	0.7	2.7	2.9	2.9
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	5	9	4	315	170	298	4	669	299	151	489	503
V/C Ratio(X)	0.00	0.11	0.00	0.06	0.22	0.08	0.48	0.19	0.11	0.80	0.33	0.34
Avail Cap(c_a), veh/h	285	568	254	569	308	415	230	719	322	344	489	503
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	18.1	0.0	15.1	15.3	12.1	18.1	11.5	11.3	16.0	9.5	9.5
Incr Delay (d2), s/veh	0.0	4.8	0.0	0.1	0.6	0.1	66.1	0.1	0.2	9.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.4	0.2	0.1	0.5	0.3	1.5	1.3	1.3
LnGrp Delay(d),s/veh	0.0	22.9	0.0	15.1	15.9	12.2	84.2	11.7	11.5	25.2	9.9	9.9
LnGrp LOS		C		B	B	B	F	B	B	C	A	A
Approach Vol, veh/h		1			80			163			451	
Approach Delay, s/veh		22.9			14.7			12.5			14.0	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	13.8		5.9	4.1	17.2		9.1				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	8.6	8.6		6.0	5.5	11.1		6.0				
Max Q Clear Time (g_c+14), s	11.7	3.2		2.0	2.0	4.9		2.7				
Green Ext Time (p_c), s	0.1	0.3		0.0	0.0	0.9		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			13.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 16: Baldwin Rd & Zacharias Rd

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	38	8	17	208	203	21	385	303	18	499	72
Future Volume (veh/h)	1	38	8	17	208	203	21	385	303	18	499	72
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	1810	1810	1900	1863	1863	1900	1810	1810	1810	1610	1610	1900
Adj Flow Rate, veh/h	1	41	9	18	226	221	23	418	329	20	542	78
Adj No. of Lanes	1	2	0	2	2	0	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, %	5	5	5	2	2	2	5	5	5	18	18	18
Cap, veh/h	107	175	37	620	319	285	48	967	433	37	747	107
Arrive On Green	0.06	0.06	0.06	0.18	0.18	0.18	0.03	0.28	0.28	0.02	0.28	0.28
Sat Flow, veh/h	1723	2823	600	3442	1770	1583	1723	3438	1538	1533	2686	385
Grp Volume(v), veh/h	1	24	26	18	226	221	23	418	329	20	308	312
Grp Sat Flow(s),veh/h/ln	1723	1719	1704	1721	1770	1583	1723	1719	1538	1533	1530	1542
Q Serve(g_s), s	0.0	0.6	0.7	0.2	5.7	6.3	0.6	4.7	9.3	0.6	8.6	8.7
Cycle Q Clear(g_c), s	0.0	0.6	0.7	0.2	5.7	6.3	0.6	4.7	9.3	0.6	8.6	8.7
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	107	106	106	620	319	285	48	967	433	37	425	429
V/C Ratio(X)	0.01	0.23	0.24	0.03	0.71	0.77	0.48	0.43	0.76	0.53	0.72	0.73
Avail Cap(c_a), veh/h	219	218	216	669	344	308	204	1293	579	181	575	580
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	20.8	21.1	21.1	16.0	18.2	18.5	22.7	13.9	15.5	22.8	15.4	15.5
Incr Delay (d2), s/veh	0.0	1.1	1.2	0.0	6.1	10.9	7.4	0.3	4.1	11.3	2.9	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.4	0.1	3.3	3.6	0.4	2.2	4.4	0.4	3.9	4.0
LnGrp Delay(d),s/veh	20.9	22.2	22.3	16.0	24.3	29.4	30.1	14.2	19.7	34.1	18.4	18.5
LnGrp LOS	C	C	C	B	C	C	C	B	B	C	B	B
Approach Vol, veh/h		51			465			770			640	
Approach Delay, s/veh		22.2			26.4			17.0			18.9	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	19.1		8.7	5.3	19.0		14.3				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.6	17.8		6.0	5.6	17.8		9.2				
Max Q Clear Time (g_c+I), s	12.6	11.3		2.7	2.6	10.7		8.3				
Green Ext Time (p_c), s	0.0	2.1		0.0	0.0	2.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				20.1								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd












2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	9	213	632	255	475	111		
Future Volume (veh/h)	9	213	632	255	475	111		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1638	1638	1624	1900		
Adj Flow Rate, veh/h	10	232	687	277	516	121		
Adj No. of Lanes	1	2	1	2	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	5	5	16	16	17	17		
Cap, veh/h	135	1484	733	2394	614	143		
Arrive On Green	0.08	0.08	0.47	0.77	0.25	0.25		
Sat Flow, veh/h	1723	2707	1560	3194	2566	580		
Grp Volume(v), veh/h	10	232	687	277	319	318		
Grp Sat Flow(s),veh/h/ln	1723	1354	1560	1556	1543	1522		
Q Serve(g_s), s	0.4	3.2	31.8	1.7	15.0	15.1		
Cycle Q Clear(g_c), s	0.4	3.2	31.8	1.7	15.0	15.1		
Prop In Lane	1.00	1.00	1.00			0.38		
Lane Grp Cap(c), veh/h	135	1484	733	2394	381	376		
V/C Ratio(X)	0.07	0.16	0.94	0.12	0.84	0.84		
Avail Cap(c_a), veh/h	136	1485	942	2958	454	447		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	32.5	8.5	19.1	2.2	27.2	27.3		
Incr Delay (d2), s/veh	0.2	0.0	14.1	0.0	11.4	12.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	3.6	16.4	0.7	7.6	7.6		
LnGrp Delay(d),s/veh	32.8	8.5	33.2	2.2	38.6	39.4		
LnGrp LOS	C	A	C	A	D	D		
Approach Vol, veh/h	242			964	637			
Approach Delay, s/veh	9.6			24.3	39.0			
Approach LOS	A			C	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		64.4		11.8	39.8	24.6		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		72.4		6.0	46.0	22.4		
Max Q Clear Time (g_c+I1), s		3.7		5.2	33.8	17.1		
Green Ext Time (p_c), s		1.8		0.1	2.0	1.7		
Intersection Summary								
HCM 2010 Ctrl Delay			27.4					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	21	397	489	19	291	490		
Future Volume (veh/h)	21	397	489	19	291	490		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1583	1583	1638	1900	1624	1624		
Adj Flow Rate, veh/h	23	432	532	21	316	533		
Adj No. of Lanes	1	1	2	0	2	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	20	20	16	16	17	17		
Cap, veh/h	337	512	733	29	471	1526		
Arrive On Green	0.22	0.22	0.24	0.24	0.16	0.49		
Sat Flow, veh/h	1508	1346	3134	120	3000	3167		
Grp Volume(v), veh/h	23	432	271	282	316	533		
Grp Sat Flow(s),veh/h/ln	1508	1346	1556	1617	1500	1543		
Q Serve(g_s), s	0.5	9.2	6.6	6.6	4.1	4.3		
Cycle Q Clear(g_c), s	0.5	9.2	6.6	6.6	4.1	4.3		
Prop In Lane	1.00	1.00		0.07	1.00			
Lane Grp Cap(c), veh/h	337	512	374	388	471	1526		
V/C Ratio(X)	0.07	0.84	0.72	0.73	0.67	0.35		
Avail Cap(c_a), veh/h	337	512	499	519	875	2190		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	12.6	11.6	14.4	14.4	16.3	6.4		
Incr Delay (d2), s/veh	0.1	12.2	3.5	3.4	1.7	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	6.1	3.1	3.3	1.8	1.8		
LnGrp Delay(d),s/veh	12.7	23.8	17.9	17.8	18.0	6.5		
LnGrp LOS	B	C	B	B	B	A		
Approach Vol, veh/h	455		553			849		
Approach Delay, s/veh	23.2		17.8			10.8		
Approach LOS	C		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.5	15.7				26.1		15.0
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	12.0	13.2				29.2		9.2
Max Q Clear Time (g_c+I1), s	6.1	8.6				6.3		11.2
Green Ext Time (p_c), s	0.6	1.3				3.3		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			15.9					
HCM 2010 LOS			B					

HCM Signalized Intersection Capacity Analysis
20: SR-33 & Baldwin Rd

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	332	31	0	571	604	68
Future Volume (vph)	332	31	0	571	604	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.8	5.8	
Lane Util. Factor	0.97			1.00	0.95	
Frt	0.99			1.00	0.98	
Flt Protected	0.96			1.00	1.00	
Satd. Flow (prot)	3314			1638	3039	
Flt Permitted	0.96			1.00	1.00	
Satd. Flow (perm)	3314			1638	3039	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	34	0	621	657	74
RTOR Reduction (vph)	14	0	0	0	14	0
Lane Group Flow (vph)	381	0	0	621	717	0
Heavy Vehicles (%)	5%	5%	16%	16%	17%	17%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	9.5			20.1	20.1	
Effective Green, g (s)	9.5			20.1	20.1	
Actuated g/C Ratio	0.23			0.49	0.49	
Clearance Time (s)	5.8			5.8	5.8	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	764			799	1482	
v/s Ratio Prot	c0.12			c0.38	0.24	
v/s Ratio Perm						
v/c Ratio	0.50			0.78	0.48	
Uniform Delay, d1	13.8			8.7	7.1	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.5			4.8	0.3	
Delay (s)	14.3			13.5	7.3	
Level of Service	B			B	A	
Approach Delay (s)	14.3			13.5	7.3	
Approach LOS	B			B	A	

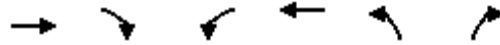
Intersection Summary

HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	15.6
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
21: Rogers Rd & SR-33

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵↵	
Traffic Volume (vph)	522	53	5	284	333	28
Future Volume (vph)	522	53	5	284	333	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.95		1.00	1.00	0.97	
Frt	0.99		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3043		1556	1638	2927	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	3043		1556	1638	2927	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	567	58	5	309	362	30
RTOR Reduction (vph)	16	0	0	0	14	0
Lane Group Flow (vph)	609	0	5	309	378	0
Heavy Vehicles (%)	17%	17%	16%	16%	19%	19%
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	11.9		0.8	16.7	9.3	
Effective Green, g (s)	11.9		0.8	16.7	9.3	
Actuated g/C Ratio	0.32		0.02	0.44	0.25	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	963		33	727	723	
v/s Ratio Prot	c0.20		0.00	c0.19	c0.13	
v/s Ratio Perm						
v/c Ratio	0.63		0.15	0.43	0.52	
Uniform Delay, d1	11.0		18.1	7.2	12.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.4		2.1	0.4	0.7	
Delay (s)	12.3		20.2	7.6	12.9	
Level of Service	B		C	A	B	
Approach Delay (s)	12.3			7.8	12.9	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	15.6
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
 22: Sycamore Ave & Eucalyptus Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	76	480	65	0	351	29	1	27	3	45	357	19
Future Volume (veh/h)	76	480	65	0	351	29	1	27	3	45	357	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1583	1900	1900	1583	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	83	522	71	0	382	32	1	29	3	49	388	21
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	20	20	20	20	20	2	2	2	2	2	2
Cap, veh/h	139	609	79	0	758	64	74	496	50	113	482	25
Arrive On Green	0.53	0.53	0.53	0.00	0.53	0.53	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	116	1158	150	0	1441	121	10	1648	166	119	1603	83
Grp Volume(v), veh/h	676	0	0	0	0	414	33	0	0	458	0	0
Grp Sat Flow(s),veh/h/ln	1424	0	0	0	0	1562	1824	0	0	1805	0	0
Q Serve(g_s), s	13.2	0.0	0.0	0.0	0.0	8.9	0.0	0.0	0.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	22.1	0.0	0.0	0.0	0.0	8.9	0.7	0.0	0.0	12.3	0.0	0.0
Prop In Lane	0.12		0.11	0.00		0.08	0.03		0.09	0.11		0.05
Lane Grp Cap(c), veh/h	827	0	0	0	0	822	620	0	0	620	0	0
V/C Ratio(X)	0.82	0.00	0.00	0.00	0.00	0.50	0.05	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	1046	0	0	0	0	1066	787	0	0	786	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.9	0.0	0.0	0.0	0.0	7.9	12.9	0.0	0.0	17.0	0.0	0.0
Incr Delay (d2), s/veh	4.1	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	0.0	0.0	3.9	0.3	0.0	0.0	6.6	0.0	0.0
LnGrp Delay(d),s/veh	15.0	0.0	0.0	0.0	0.0	8.4	13.0	0.0	0.0	19.7	0.0	0.0
LnGrp LOS	B					A	B			B		
Approach Vol, veh/h		676			414			33			458	
Approach Delay, s/veh		15.0			8.4			13.0			19.7	
Approach LOS		B			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.1		31.9		20.1		31.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.5		35.5		20.5		35.5				
Max Q Clear Time (g_c+1), s		2.7		24.1		14.3		10.9				
Green Ext Time (p_c), s		0.1		3.3		1.3		2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
23: Elm Ave & Eucalyptus Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔			↔	
Traffic Volume (veh/h)	45	45	558	2	4	1	96	205	96	9	147	3
Future Volume (veh/h)	45	45	558	2	4	1	96	205	96	9	147	3
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	1900	1583	1583	1900	1583	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	49	49	607	2	4	1	104	223	104	10	160	3
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	20	20	20	20	20	2	2	2	2	2	2
Cap, veh/h	453	389	668	246	407	87	490	298	139	116	394	7
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	603	784	1346	231	821	175	1218	1203	561	32	1587	29
Grp Volume(v), veh/h	98	0	607	7	0	0	104	0	327	173	0	0
Grp Sat Flow(s),veh/h/ln	1387	0	1346	1227	0	0	1218	0	1764	1647	0	0
Q Serve(g_s), s	0.0	0.0	14.6	0.0	0.0	0.0	0.0	0.0	6.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	14.6	0.1	0.0	0.0	2.7	0.0	6.0	6.1	0.0	0.0
Prop In Lane	0.50		1.00	0.29		0.14	1.00		0.32	0.06		0.02
Lane Grp Cap(c), veh/h	842	0	668	741	0	0	490	0	437	517	0	0
V/C Ratio(X)	0.12	0.00	0.91	0.01	0.00	0.00	0.21	0.00	0.75	0.33	0.00	0.00
Avail Cap(c_a), veh/h	921	0	746	805	0	0	586	0	576	657	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.8	0.0	8.1	4.5	0.0	0.0	11.0	0.0	12.2	11.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	14.2	0.0	0.0	0.0	0.2	0.0	3.8	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	7.9	0.0	0.0	0.0	0.9	0.0	3.4	1.4	0.0	0.0
LnGrp Delay(d),s/veh	4.8	0.0	22.3	4.5	0.0	0.0	11.2	0.0	16.0	11.4	0.0	0.0
LnGrp LOS	A		C	A			B		B	B		
Approach Vol, veh/h		705			7			431			173	
Approach Delay, s/veh		19.9			4.5			14.8			11.4	
Approach LOS		B			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.2		22.0		13.2		22.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		11.5		19.5		11.5		19.5				
Max Q Clear Time (g_c+1), s		8.0		16.6		8.1		2.1				
Green Ext Time (p_c), s		0.7		0.9		0.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			17.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

2040 Plus Project (No Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	452	8	29	438	35	6	29	56	140	67	31
Future Volume (veh/h)	8	452	8	29	438	35	6	29	56	140	67	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	9	491	9	32	476	38	7	32	61	152	73	34
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	20	607	11	55	563	45	156	50	96	206	140	65
Arrive On Green	0.01	0.35	0.35	0.04	0.38	0.38	0.09	0.09	0.09	0.12	0.12	0.12
Sat Flow, veh/h	1675	1722	32	1560	1497	120	1774	574	1095	1774	1203	560
Grp Volume(v), veh/h	9	0	500	32	0	514	7	0	93	152	0	107
Grp Sat Flow(s),veh/h/ln	1675	0	1754	1560	0	1617	1774	0	1670	1774	0	1764
Q Serve(g_s), s	0.3	0.0	13.5	1.1	0.0	15.2	0.2	0.0	2.8	4.3	0.0	3.0
Cycle Q Clear(g_c), s	0.3	0.0	13.5	1.1	0.0	15.2	0.2	0.0	2.8	4.3	0.0	3.0
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.32
Lane Grp Cap(c), veh/h	20	0	618	55	0	608	156	0	147	206	0	205
V/C Ratio(X)	0.46	0.00	0.81	0.58	0.00	0.85	0.04	0.00	0.63	0.74	0.00	0.52
Avail Cap(c_a), veh/h	160	0	1010	149	0	931	247	0	232	206	0	205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	15.4	24.9	0.0	15.0	21.9	0.0	23.1	22.4	0.0	21.8
Incr Delay (d2), s/veh	15.8	0.0	2.6	9.2	0.0	4.5	0.1	0.0	4.5	12.9	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	7.0	0.6	0.0	7.5	0.1	0.0	1.5	2.9	0.0	1.6
LnGrp Delay(d),s/veh	41.5	0.0	18.0	34.1	0.0	19.5	22.0	0.0	27.6	35.3	0.0	24.2
LnGrp LOS	D		B	C		B	C		C	D		C
Approach Vol, veh/h		509			546			100			259	
Approach Delay, s/veh		18.4			20.3			27.2			30.7	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		10.4	5.9	24.3		11.9	4.6	25.5				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		7.3	5.0	30.2		6.1	5.0	30.2				
Max Q Clear Time (g_c+1), s		4.8	3.1	15.5		6.3	2.3	17.2				
Green Ext Time (p_c), s		0.1	0.0	2.5		0.0	0.0	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay				22.0								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	472	7	29	466	30	9	12	20	318	85	40
Future Volume (veh/h)	4	472	7	29	466	30	9	12	20	318	85	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		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	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	4	513	8	32	507	33	10	13	22	346	92	43
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	9	625	10	53	594	39	164	213	293	474	100	47
Arrive On Green	0.01	0.36	0.36	0.03	0.39	0.39	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1675	1728	27	1560	1521	99	264	605	831	1062	282	132
Grp Volume(v), veh/h	4	0	521	32	0	540	45	0	0	481	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1620	1699	0	0	1476	0	0
Q Serve(g_s), s	0.1	0.0	16.7	1.3	0.0	18.9	0.0	0.0	0.0	18.3	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	16.7	1.3	0.0	18.9	1.1	0.0	0.0	19.4	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	9	0	635	53	0	633	670	0	0	621	0	0
V/C Ratio(X)	0.44	0.00	0.82	0.60	0.00	0.85	0.07	0.00	0.00	0.78	0.00	0.00
Avail Cap(c_a), veh/h	135	0	1306	126	0	1206	703	0	0	651	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	18.0	29.6	0.0	17.3	13.4	0.0	0.0	19.2	0.0	0.0
Incr Delay (d2), s/veh	30.8	0.0	2.7	10.4	0.0	3.4	0.0	0.0	0.0	5.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	8.6	0.7	0.0	9.0	0.5	0.0	0.0	8.8	0.0	0.0
LnGrp Delay(d),s/veh	61.6	0.0	20.7	39.9	0.0	20.7	13.4	0.0	0.0	24.7	0.0	0.0
LnGrp LOS	E		C	D		C	B			C		
Approach Vol, veh/h		525			572			45			481	
Approach Delay, s/veh		21.0			21.8			13.4			24.7	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.7	6.1	28.3		27.7	4.3	30.0				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		23.2	5.0	46.2		23.2	5.0	46.2				
Max Q Clear Time (g_c+1), s		3.1	3.3	18.7		21.4	2.1	20.9				
Green Ext Time (p_c), s		0.1	0.0	3.2		0.5	0.0	3.3				
Intersection Summary												
HCM 2010 Ctrl Delay				22.2								
HCM 2010 LOS				C								

HCM Signalized Intersection Capacity Analysis
 26: Las Palmas Ave/W Main Ave & Jennings Rd

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	240	853	508	0	6	483
Future Volume (vph)	240	853	508	0	6	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.8	5.8		5.8	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	0.95
Frt	1.00	1.00	1.00		0.85	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1626	1712	1667		1589	1504
Flt Permitted	0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1626	1712	1667		1589	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	927	552	0	7	525
RTOR Reduction (vph)	0	0	0	0	222	131
Lane Group Flow (vph)	261	927	552	0	42	137
Heavy Vehicles (%)	11%	11%	14%	14%	2%	2%
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases						6
Actuated Green, G (s)	16.1	48.3	28.2		9.6	25.7
Effective Green, g (s)	16.1	48.3	28.2		9.6	25.7
Actuated g/C Ratio	0.23	0.69	0.41		0.14	0.37
Clearance Time (s)	4.0	5.8	5.8		5.8	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	376	1189	676		219	556
v/s Ratio Prot	0.16	c0.54	0.33		0.03	c0.06
v/s Ratio Perm						0.03
v/c Ratio	0.69	0.78	0.82		0.19	0.25
Uniform Delay, d1	24.4	7.1	18.4		26.5	15.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.5	3.3	7.6		0.4	0.2
Delay (s)	29.9	10.4	25.9		27.0	15.4
Level of Service	C	B	C		C	B
Approach Delay (s)		14.7	25.9		21.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay		18.9	HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio		0.74	
Actuated Cycle Length (s)		69.5	Sum of lost time (s) 15.6
Intersection Capacity Utilization		64.9%	ICU Level of Service C
Analysis Period (min)		15	
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
27: SR-33 & New Connection (Project)

2040 Plus Project (No Zach IC) (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	241	545	514	267	197	314
Future Volume (vph)	241	545	514	267	197	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	0.97	1.00	0.95	
Frt	0.94	0.85	1.00	1.00	0.91	
Flt Protected	0.97	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1699	1504	3433	1863	3213	
Flt Permitted	0.97	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1699	1504	3433	1863	3213	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	592	559	290	214	341
RTOR Reduction (vph)	40	284	0	0	273	0
Lane Group Flow (vph)	400	130	559	290	282	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	15.5	15.5	10.7	25.0	9.8	
Effective Green, g (s)	15.5	15.5	10.7	25.0	9.8	
Actuated g/C Ratio	0.31	0.31	0.22	0.51	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	532	470	742	940	636	
v/s Ratio Prot	c0.24		c0.16	0.16	c0.09	
v/s Ratio Perm		0.09				
v/c Ratio	0.75	0.28	0.75	0.31	0.44	
Uniform Delay, d1	15.3	12.8	18.2	7.2	17.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.9	0.3	4.3	0.2	0.5	
Delay (s)	21.2	13.1	22.5	7.4	17.9	
Level of Service	C	B	C	A	B	
Approach Delay (s)	17.3			17.3	17.9	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	49.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
28: Ward Ave & New Connection (Project)

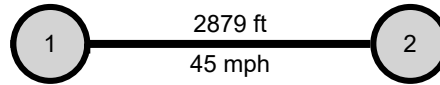
2040 Plus Project (No Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	659	364	262	566	0	225	0	127	0	0	0
Future Volume (veh/h)	0	659	364	262	566	0	225	0	127	0	0	0
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	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	0	716	396	285	615	0	245	0	138	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	872	741	340	1358	0	460	0	212	0	3	0
Arrive On Green	0.00	0.47	0.47	0.19	0.73	0.00	0.13	0.00	0.13	0.00	0.00	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	3442	0	1583	0	1863	0
Grp Volume(v), veh/h	0	716	396	285	615	0	245	0	138	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	1721	0	1583	0	1863	0
Q Serve(g_s), s	0.0	21.7	11.6	10.1	8.7	0.0	4.3	0.0	5.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	21.7	11.6	10.1	8.7	0.0	4.3	0.0	5.4	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	872	741	340	1358	0	460	0	212	0	3	0
V/C Ratio(X)	0.00	0.82	0.53	0.84	0.45	0.00	0.53	0.00	0.65	0.00	0.00	0.00
Avail Cap(c_a), veh/h	488	1295	1101	529	1358	0	999	0	460	0	512	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.0	12.3	25.5	3.6	0.0	26.4	0.0	26.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.7	0.6	6.9	0.2	0.0	1.0	0.0	3.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.8	5.2	5.6	4.5	0.0	2.1	0.0	2.6	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.8	12.9	32.3	3.8	0.0	27.4	0.0	30.3	0.0	0.0	0.0
LnGrp LOS		B	B	C	A		C		C			
Approach Vol, veh/h		1112			900			383			0	
Approach Delay, s/veh		16.1			12.9			28.4			0.0	
Approach LOS		B			B			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.2	17.1	35.1		0.0	0.0	52.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	19.5	45.5		18.0	18.0	47.0				
Max Q Clear Time (g_c+1), s		7.4	12.1	23.7		0.0	0.0	10.7				
Green Ext Time (p_c), s		1.3	0.5	6.9		0.0	0.0	4.8				
Intersection Summary												
HCM 2010 Ctrl Delay				16.8								
HCM 2010 LOS				B								

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	46.13			45.70		
1	Running Speed, mph	42.56			42.95		
1	Through Delay, s/veh	10.98			47.21		
1	Travel Time, s	57.11			92.91		
1	Travel Speed, mph	34.37			21.13		
1	Stop Rate, stops/veh	0.59			0.80		
1	Spatial Stop Rate, stops/mi	1.07			1.46		
1	Through vol/cap Ratio	0.56			0.90		
1	Percent of Base FFS	75.95			45.34		
1	Level of Service	B			D		
1	Auto Traveler Perception Score	2.30			2.36		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	4.12	D
1	Bicycle Segment LOS Score / LOS	4.91	E	5.38	F
1	Transit Segment LOS Score / LOS	6.65	F	6.61	F

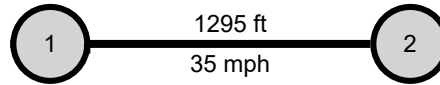
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	57.11	92.91	
Facility Travel Speed, mph	34.37	21.13			
Facility Base Free Flow Speed, mph	45.26	46.59			
Facility Percent of Base FFS	75.95	45.34			
Facility Level of Service	B	D			
Facility Auto Traveler Perception Score	2.30	2.36			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS		F	4.12	D
Bicycle Facility LOS Score / LOS	4.91	E	5.38	F
Transit Facility LOS Score / LOS	6.65	F	6.61	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		0.20	never	
1	Shared Lane Spillback Time, h				0.40		
1	Base Free-Flow Speed, mph	38.00			38.12		
1	Running Time, s	27.03			26.66		
1	Running Speed, mph	32.67			33.12		
1	Through Delay, s/veh	0.69			19.54		
1	Travel Time, s	27.71			46.20		
1	Travel Speed, mph	31.86			19.11		
1	Stop Rate, stops/veh	0.01			0.54		
1	Spatial Stop Rate, stops/mi	0.04			2.22		
1	Through vol/cap Ratio	0.43			0.45		
1	Percent of Base FFS	83.84			50.14		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.15			2.48		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.82	D	3.77	D
1	Bicycle Segment LOS Score / LOS	3.87	D	6.96	F
1	Transit Segment LOS Score / LOS	4.60	E	4.50	E

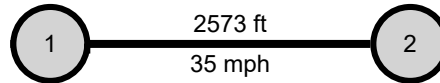
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	27.71	46.20	
Facility Travel Speed, mph	31.86	19.11			
Facility Base Free Flow Speed, mph	38.00	38.12			
Facility Percent of Base FFS	83.84	50.14			
Facility Level of Service	B	C			
Facility Auto Traveler Perception Score	2.15	2.48			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.82	D	3.77	D
Bicycle Facility LOS Score / LOS	3.87	D	6.96	F
Transit Facility LOS Score / LOS	4.60	E	4.50	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2573	2573	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		40.75			40.62	
1	Running Time, s		47.05			45.59	
1	Running Speed, mph		37.28			38.48	
1	Through Delay, s/veh		1.20			0.43	
1	Travel Time, s		48.25			46.01	
1	Travel Speed, mph		36.36			38.13	
1	Stop Rate, stops/veh		0.02			0.01	
1	Spatial Stop Rate, stops/mi		0.03			0.02	
1	Through vol/cap Ratio		0.53			0.22	
1	Percent of Base FFS		89.22			93.86	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.15			2.14	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.86	D	3.52	D
1	Transit Segment LOS Score / LOS	4.75	E	4.51	E

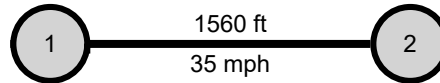
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	48.25	46.01	
Facility Travel Speed, mph	36.36	38.13			
Facility Base Free Flow Speed, mph	40.75	40.62			
Facility Percent of Base FFS	89.22	93.86			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.15	2.14			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.86	D	3.52
Transit Facility LOS Score / LOS	4.75	E	4.51

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward Ave	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	27.94			29.00		
1	Running Speed, mph	38.06			36.68		
1	Through Delay, s/veh	1.08			1.98		
1	Travel Time, s	29.02			30.97		
1	Travel Speed, mph	36.65			34.34		
1	Stop Rate, stops/veh	0.36			0.36		
1	Spatial Stop Rate, stops/mi	1.21			1.21		
1	Through vol/cap Ratio	0.14			0.73		
1	Percent of Base FFS	87.72			82.20		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.54			2.54		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.65	E	4.91	E
1	Transit Segment LOS Score / LOS	6.58	F	6.82	F

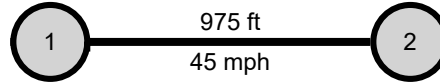
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		29.02		30.97	
Facility Travel Speed, mph		36.65		34.34	
Facility Base Free Flow Speed, mph		41.78		41.78	
Facility Percent of Base FFS		87.72		82.20	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.54		2.54	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.65	E	4.91	E	
Transit Facility LOS Score / LOS	6.58	F	6.82	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	19.35			18.91		
1	Running Speed, mph	34.35			35.16		
1	Through Delay, s/veh	1.69			0.90		
1	Travel Time, s	21.04			19.80		
1	Travel Speed, mph	31.59			33.57		
1	Stop Rate, stops/veh	0.13			0.13		
1	Spatial Stop Rate, stops/mi	0.69			0.69		
1	Through vol/cap Ratio	0.92			0.72		
1	Percent of Base FFS	68.87			73.18		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.45			2.45		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.93	D	3.76	D
1	Transit Segment LOS Score / LOS	6.95	F	6.86	F

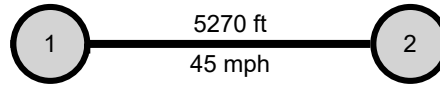
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	21.04	19.80	
Facility Travel Speed, mph	31.59	33.57			
Facility Base Free Flow Speed, mph	45.87	45.87			
Facility Percent of Base FFS	68.87	73.18			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.45	2.45			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.93	D	3.76
Transit Facility LOS Score / LOS	6.95	F	6.86

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	4/12/2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	AM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave_AM.xus	Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1> 7:00
Project Description	Cumulative + Project (No Zacharias IC)				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	84.27			83.03		
1	Running Speed, mph	42.64			43.28		
1	Through Delay, s/veh	30.25			23.89		
1	Travel Time, s	114.52			106.92		
1	Travel Speed, mph	31.38			33.61		
1	Stop Rate, stops/veh	0.79			0.67		
1	Spatial Stop Rate, stops/mi	0.79			0.67		
1	Through vol/cap Ratio	0.95			0.79		
1	Percent of Base FFS	69.49			74.43		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.26			2.24		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.96	D	4.31	E
1	Transit Segment LOS Score / LOS	6.77	F	6.70	F

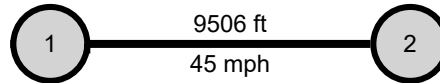
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		114.52		106.92	
Facility Travel Speed, mph		31.38		33.61	
Facility Base Free Flow Speed, mph		45.15		45.15	
Facility Percent of Base FFS		69.49		74.43	
Facility Level of Service		B		B	
Facility Auto Traveler Perception Score		2.26		2.24	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.96	D	4.31	E	
Transit Facility LOS Score / LOS	6.77	F	6.70	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	147.36			148.08		
1	Running Speed, mph	43.98			43.77		
1	Through Delay, s/veh	9.47			22.17		
1	Travel Time, s	156.83			170.24		
1	Travel Speed, mph	41.33			38.07		
1	Stop Rate, stops/veh	0.34			0.71		
1	Spatial Stop Rate, stops/mi	0.19			0.39		
1	Through vol/cap Ratio	0.47			0.96		
1	Percent of Base FFS	89.83			82.75		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.41		

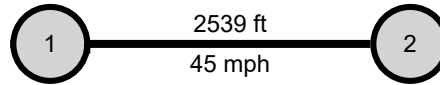
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	4.00	D	4.04
1	Transit Segment LOS Score / LOS	6.74	F	6.78

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		156.83		170.24	
Facility Travel Speed, mph		41.33		38.07	
Facility Base Free Flow Speed, mph		46.00		46.01	
Facility Percent of Base FFS		89.83		82.75	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.17		2.41	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.00	D	4.04	D
Transit Facility LOS Score / LOS	6.74	F	6.78	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_AM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	40.10			43.64		
1	Running Speed, mph	43.17			39.67		
1	Through Delay, s/veh	9.31			31.00		
1	Travel Time, s	49.41			74.64		
1	Travel Speed, mph	35.04			23.19		
1	Stop Rate, stops/veh	0.36			0.81		
1	Spatial Stop Rate, stops/mi	0.76			1.69		
1	Through vol/cap Ratio	0.39			0.98		
1	Percent of Base FFS	76.35			53.27		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.46			2.62		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.10	D	4.80	E
1	Transit Segment LOS Score / LOS	6.60	F	0.70	A

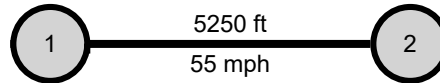
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	49.41	74.64	
Facility Travel Speed, mph	35.04	23.19			
Facility Base Free Flow Speed, mph	45.89	43.54			
Facility Percent of Base FFS	76.35	53.27			
Facility Level of Service	B	C			
Facility Auto Traveler Perception Score	2.46	2.62			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.10	D	4.80
Transit Facility LOS Score / LOS	6.60	F	0.70

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	73.06			82.33		
1	Running Speed, mph	49.00			43.48		
1	Through Delay, s/veh	11.04			0.00		
1	Travel Time, s	84.09			82.33		
1	Travel Speed, mph	42.57			43.48		
1	Stop Rate, stops/veh	0.60			0.00		
1	Spatial Stop Rate, stops/mi	0.60			0.00		
1	Through vol/cap Ratio	0.58			0.00		
1	Percent of Base FFS	85.08			95.92		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.44			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	5.06	F	6.14	F
1	Transit Segment LOS Score / LOS	6.69	F	0.57	A

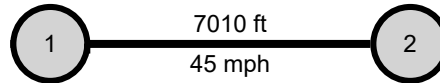
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		84.09		82.33	
Facility Travel Speed, mph		42.57		43.48	
Facility Base Free Flow Speed, mph		50.03		45.33	
Facility Percent of Base FFS		85.08		95.92	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.44		2.34	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	5.06	F	6.14	F	
Transit Facility LOS Score / LOS	6.69	F	0.57	A	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR		Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0	

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	106.66			104.32		
1	Running Speed, mph	44.81			45.82		
1	Through Delay, s/veh	0.00			4.89		
1	Travel Time, s	106.66			109.22		
1	Travel Speed, mph	44.81			43.76		
1	Stop Rate, stops/veh	0.00			0.44		
1	Spatial Stop Rate, stops/mi	0.00			0.33		
1	Through vol/cap Ratio	0.00			0.10		
1	Percent of Base FFS	97.21			94.93		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.40		

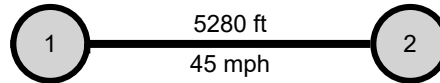
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	3.93	D	E
1	Transit Segment LOS Score / LOS	6.76	F	F

Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		106.66		109.22	
Facility Travel Speed, mph		44.81		43.76	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		97.21		94.93	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.34		2.40	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.93	D	4.53	E
Transit Facility LOS Score / LOS	6.76	F	6.53	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	4/17/2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	AM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Cumulative + Project (No Zacharias IC)				



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	78.72			79.37		
1	Running Speed, mph	45.73			45.36		
1	Through Delay, s/veh	24.16			14.33		
1	Travel Time, s	102.87			93.70		
1	Travel Speed, mph	34.99			38.42		
1	Stop Rate, stops/veh	0.85			0.75		
1	Spatial Stop Rate, stops/mi	0.85			0.75		
1	Through vol/cap Ratio	0.38			0.57		
1	Percent of Base FFS	75.62			83.02		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.48			2.46		

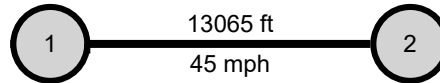
Multimodal Results (Segment)				
1	Pedestrian Segment LOS Score / LOS		F	F
1	Bicycle Segment LOS Score / LOS	3.35	C	D
1	Transit Segment LOS Score / LOS	6.53	F	F

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		102.87		93.70	
Facility Travel Speed, mph		34.99		38.42	
Facility Base Free Flow Speed, mph		46.28		46.28	
Facility Percent of Base FFS		75.62		83.02	
Facility Level of Service		B		B	
Facility Auto Traveler Perception Score		2.48		2.46	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.35	C	3.59	D
Transit Facility LOS Score / LOS	6.53	F	6.67	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			9.02	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.21			46.21		
1	Running Time, s	193.68			201.53		
1	Running Speed, mph	45.99			44.20		
1	Through Delay, s/veh	13.96			189.83		
1	Travel Time, s	207.64			391.36		
1	Travel Speed, mph	42.90			22.76		
1	Stop Rate, stops/veh	0.48			1.76		
1	Spatial Stop Rate, stops/mi	0.19			0.71		
1	Through vol/cap Ratio	0.13			1.36		
1	Percent of Base FFS	92.84			49.25		
1	Level of Service	A			F		
1	Auto Traveler Perception Score	2.38			2.46		

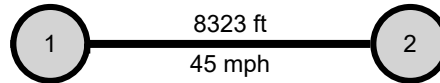
Multimodal Results (Segment)					
1	Pedestrian Segment LOS Score / LOS		F	F	
1	Bicycle Segment LOS Score / LOS	4.61	E	4.57	E
1	Transit Segment LOS Score / LOS	6.55	F	6.87	F

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		207.64		391.36	
Facility Travel Speed, mph		42.90		22.76	
Facility Base Free Flow Speed, mph		46.21		46.21	
Facility Percent of Base FFS		92.84		49.25	
Facility Level of Service		A		D	
Facility Auto Traveler Perception Score		2.38		2.46	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.61	E	4.57	E
Transit Facility LOS Score / LOS	6.55	F	6.87	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

		Northbound			Southbound		
Segment Output Data		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	123.09			125.00		
1	Running Speed, mph	46.10			45.40		
1	Through Delay, s/veh	14.26			14.73		
1	Travel Time, s	137.35			139.73		
1	Travel Speed, mph	41.32			40.61		
1	Stop Rate, stops/veh	0.52			0.63		
1	Spatial Stop Rate, stops/mi	0.33			0.40		
1	Through vol/cap Ratio	0.25			0.72		
1	Percent of Base FFS	88.75			87.24		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.40			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.23	D	4.22	D
1	Transit Segment LOS Score / LOS	6.56	F	6.65	F

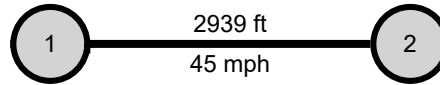
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		137.35		139.73	
Facility Travel Speed, mph		41.32		40.61	
Facility Base Free Flow Speed, mph		46.55		46.55	
Facility Percent of Base FFS		88.75		87.24	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.40		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS		4.23	D	4.22	D
Transit Facility LOS Score / LOS		6.56	F	6.65	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2939	2939	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.28			46.60		
1	Running Time, s	47.78			46.68		
1	Running Speed, mph	41.94			42.93		
1	Through Delay, s/veh	15.16			67.11		
1	Travel Time, s	62.95			113.79		
1	Travel Speed, mph	31.83			17.61		
1	Stop Rate, stops/veh	0.62			0.90		
1	Spatial Stop Rate, stops/mi	1.12			1.62		
1	Through vol/cap Ratio	0.75			0.92		
1	Percent of Base FFS	70.30			37.79		
1	Level of Service	B			E		
1	Auto Traveler Perception Score	2.31			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	4.15	D
1	Bicycle Segment LOS Score / LOS	4.99	E	4.99	E
1	Transit Segment LOS Score / LOS	6.74	F	6.62	F

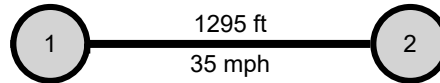
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	62.95		113.79
Facility Travel Speed, mph	31.83		17.61		
Facility Base Free Flow Speed, mph	45.28		46.60		
Facility Percent of Base FFS	70.30		37.79		
Facility Level of Service	B		E		
Facility Auto Traveler Perception Score	2.31		2.39		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			4.15	D
Bicycle Facility LOS Score / LOS	4.99	E	4.99	E
Transit Facility LOS Score / LOS	6.74	F	6.62	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		0.33	never	
1	Shared Lane Spillback Time, h				0.43		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.80			27.13	
1	Running Speed, mph		32.95			32.55	
1	Through Delay, s/veh		0.82			59.39	
1	Travel Time, s		27.62			86.52	
1	Travel Speed, mph		31.97			10.21	
1	Stop Rate, stops/veh		0.08			0.95	
1	Spatial Stop Rate, stops/mi		0.32			3.88	
1	Through vol/cap Ratio		0.39			0.95	
1	Percent of Base FFS		84.14			26.77	
1	Level of Service		B			F	
1	Auto Traveler Perception Score		2.19			2.76	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.74	D	3.95	D
1	Bicycle Segment LOS Score / LOS	3.85	D	6.99	F
1	Transit Segment LOS Score / LOS	4.56	E	4.58	E

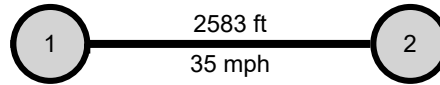
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		27.62		86.52	
Facility Travel Speed, mph		31.97		10.21	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		84.14		26.77	
Facility Level of Service		B		F	
Facility Auto Traveler Perception Score		2.19		2.76	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.74	D	3.95	D
Bicycle Facility LOS Score / LOS	3.85	D	6.99	F
Transit Facility LOS Score / LOS	4.56	E	4.58	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2583	2583	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		40.76			40.62	
1	Running Time, s		46.56			47.52	
1	Running Speed, mph		37.82			37.06	
1	Through Delay, s/veh		0.87			1.19	
1	Travel Time, s		47.43			48.71	
1	Travel Speed, mph		37.13			36.15	
1	Stop Rate, stops/veh		0.01			0.02	
1	Spatial Stop Rate, stops/mi		0.03			0.03	
1	Through vol/cap Ratio		0.42			0.54	
1	Percent of Base FFS		91.10			89.00	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.15			2.15	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.82	D	3.63	D
1	Transit Segment LOS Score / LOS	4.67	E	4.72	E

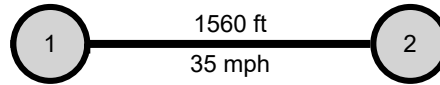
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	47.43		48.71
Facility Travel Speed, mph	37.13		36.15		
Facility Base Free Flow Speed, mph	40.76		40.62		
Facility Percent of Base FFS	91.10		89.00		
Facility Level of Service	A		A		
Facility Auto Traveler Perception Score	2.15		2.15		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.82	D	3.63	D
Transit Facility LOS Score / LOS	4.67	E	4.72	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		41.78			41.78	
1	Running Time, s		28.49			28.01	
1	Running Speed, mph		37.34			37.98	
1	Through Delay, s/veh		1.78			1.32	
1	Travel Time, s		30.26			29.33	
1	Travel Speed, mph		35.14			36.27	
1	Stop Rate, stops/veh		0.42			0.42	
1	Spatial Stop Rate, stops/mi		1.43			1.43	
1	Through vol/cap Ratio		0.55			0.20	
1	Percent of Base FFS		84.12			86.81	
1	Level of Service		B			A	
1	Auto Traveler Perception Score		2.58			2.58	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.87	E	4.65	E
1	Transit Segment LOS Score / LOS	6.73	F	6.63	F

Facility Output Data

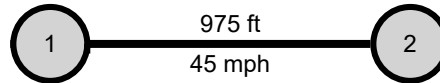
	Eastbound	Westbound
Facility Travel Time, s	30.26	29.33
Facility Travel Speed, mph	35.14	36.27
Facility Base Free Flow Speed, mph	41.78	41.78
Facility Percent of Base FFS	84.12	86.81
Facility Level of Service	B	A
Facility Auto Traveler Perception Score	2.58	2.58

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.87	E	4.65	E
Transit Facility LOS Score / LOS	6.73	F	6.63	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_P	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	18.92			19.23		
1	Running Speed, mph	35.14			34.57		
1	Through Delay, s/veh	1.07			1.58		
1	Travel Time, s	19.99			20.81		
1	Travel Speed, mph	33.25			31.94		
1	Stop Rate, stops/veh	0.15			0.15		
1	Spatial Stop Rate, stops/mi	0.82			0.82		
1	Through vol/cap Ratio	0.75			0.89		
1	Percent of Base FFS	72.50			69.64		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.47			2.48		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.77	D	3.88	D
1	Transit Segment LOS Score / LOS	6.86	F	6.93	F

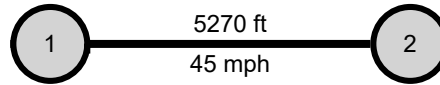
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	19.99	20.81	
Facility Travel Speed, mph	33.25	31.94			
Facility Base Free Flow Speed, mph	45.87	45.87			
Facility Percent of Base FFS	72.50	69.64			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.47	2.48			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.77	D	3.88
Transit Facility LOS Score / LOS	6.86	F	6.93

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave, Sycamore &		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	83.26			82.39		
1	Running Speed, mph	43.15			43.61		
1	Through Delay, s/veh	44.78			15.86		
1	Travel Time, s	128.04			98.26		
1	Travel Speed, mph	28.06			36.57		
1	Stop Rate, stops/veh	0.91			0.62		
1	Spatial Stop Rate, stops/mi	0.91			0.62		
1	Through vol/cap Ratio	0.99			0.81		
1	Percent of Base FFS	62.15			81.00		
1	Level of Service	C			B		
1	Auto Traveler Perception Score	2.28			2.23		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.94	D	4.30	E
1	Transit Segment LOS Score / LOS	6.71	F	6.65	F

Facility Output Data

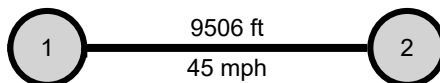
	Eastbound	Westbound
Facility Travel Time, s	128.04	98.26
Facility Travel Speed, mph	28.06	36.57
Facility Base Free Flow Speed, mph	45.15	45.15
Facility Percent of Base FFS	62.15	81.00
Facility Level of Service	C	B
Facility Auto Traveler Perception Score	2.28	2.23

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.94	D	4.30	E
Transit Facility LOS Score / LOS	6.71	F	6.65	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data

		Eastbound			Westbound		
Segment	Movement	EBL	EBT	EBR	WBL	WBT	WBR
		5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	147.45			148.06		
1	Running Speed, mph	43.96			43.77		
1	Through Delay, s/veh	8.58			28.81		
1	Travel Time, s	156.03			176.87		
1	Travel Speed, mph	41.54			36.64		
1	Stop Rate, stops/veh	0.34			0.77		
1	Spatial Stop Rate, stops/mi	0.19			0.43		
1	Through vol/cap Ratio	0.56			0.98		
1	Percent of Base FFS	90.30			79.65		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.98	D	4.04	D
1	Transit Segment LOS Score / LOS	6.74	F	6.77	F

Facility Output Data

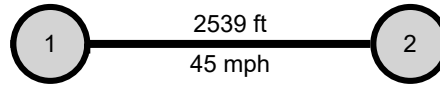
	Eastbound	Westbound
Facility Travel Time, s	156.03	176.87
Facility Travel Speed, mph	41.54	36.64
Facility Base Free Flow Speed, mph	46.00	46.01
Facility Percent of Base FFS	90.30	79.65
Facility Level of Service	A	B
Facility Auto Traveler Perception Score	2.17	2.41

Multimodal Results (Facility)

	Pedestrian Facility LOS Score / LOS			
	Bicycle Facility LOS Score / LOS	3.98	D	4.04
	Transit Facility LOS Score / LOS	6.74	F	6.77

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_PM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	40.42			43.90		
1	Running Speed, mph	42.83			39.43		
1	Through Delay, s/veh	10.77			23.99		
1	Travel Time, s	51.19			67.89		
1	Travel Speed, mph	33.82			25.50		
1	Stop Rate, stops/veh	0.38			0.74		
1	Spatial Stop Rate, stops/mi	0.79			1.54		
1	Through vol/cap Ratio	0.74			0.98		
1	Percent of Base FFS	73.69			58.56		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.47			2.59		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.20	D	4.79	E
1	Transit Segment LOS Score / LOS	6.65	F	0.74	A

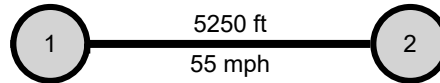
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		51.19		67.89	
Facility Travel Speed, mph		33.82		25.50	
Facility Base Free Flow Speed, mph		45.89		43.54	
Facility Percent of Base FFS		73.69		58.56	
Facility Level of Service		B		C	
Facility Auto Traveler Perception Score		2.47		2.59	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.20	D	4.79	E
Transit Facility LOS Score / LOS	6.65	F	0.74	A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	72.87			80.99		
1	Running Speed, mph	49.13			44.20		
1	Through Delay, s/veh	9.12			0.00		
1	Travel Time, s	81.99			80.99		
1	Travel Speed, mph	43.66			44.20		
1	Stop Rate, stops/veh	0.54			0.00		
1	Spatial Stop Rate, stops/mi	0.54			0.00		
1	Through vol/cap Ratio	0.23			0.00		
1	Percent of Base FFS	87.27			97.50		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	5.12	F	6.07	F
1	Transit Segment LOS Score / LOS	6.67	F	0.44	A

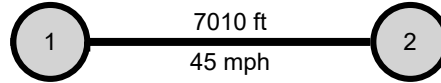
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		81.99		80.99	
Facility Travel Speed, mph		43.66		44.20	
Facility Base Free Flow Speed, mph		50.03		45.33	
Facility Percent of Base FFS		87.27		97.50	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.43		2.34	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	5.12	F	6.07	F	
Transit Facility LOS Score / LOS	6.67	F	0.44	A	

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	PM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Cumulative + Project (No Zacharias IC)				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	106.94			104.24		
1	Running Speed, mph	44.69			45.85		
1	Through Delay, s/veh	0.00			9.92		
1	Travel Time, s	106.94			114.16		
1	Travel Speed, mph	44.69			41.87		
1	Stop Rate, stops/veh	0.00			0.55		
1	Spatial Stop Rate, stops/mi	0.00			0.41		
1	Through vol/cap Ratio	0.00			0.10		
1	Percent of Base FFS	96.95			90.82		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.91	D	4.51	E
1	Transit Segment LOS Score / LOS	6.77	F	6.51	F

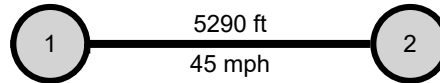
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		106.94		114.16	
Facility Travel Speed, mph		44.69		41.87	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		96.95		90.82	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.34		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.91	D	4.51	E
Transit Facility LOS Score / LOS	6.77	F	6.51	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	4/17/2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	PM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Cumulative + Project (No Zacharias IC)				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5290	5290	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	79.11			79.62		
1	Running Speed, mph	45.59			45.30		
1	Through Delay, s/veh	20.76			15.19		
1	Travel Time, s	99.87			94.81		
1	Travel Speed, mph	36.12			38.04		
1	Stop Rate, stops/veh	0.69			0.75		
1	Spatial Stop Rate, stops/mi	0.68			0.75		
1	Through vol/cap Ratio	0.30			0.62		
1	Percent of Base FFS	78.04			82.21		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.45			2.46		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.55	D	3.60	D
1	Transit Segment LOS Score / LOS	6.63	F	6.68	F

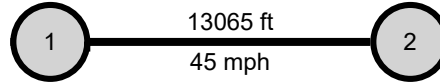
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	99.87	94.81	
Facility Travel Speed, mph	36.12	38.04			
Facility Base Free Flow Speed, mph	46.28	46.28			
Facility Percent of Base FFS	78.04	82.21			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.45	2.46			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.55	D	3.60
Transit Facility LOS Score / LOS	6.63	F	6.68

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (No Zacharias IC)					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.21			46.21		
1	Running Time, s	194.23			199.00		
1	Running Speed, mph	45.86			44.76		
1	Through Delay, s/veh	14.52			23.66		
1	Travel Time, s	208.75			222.66		
1	Travel Speed, mph	42.67			40.01		
1	Stop Rate, stops/veh	0.50			0.77		
1	Spatial Stop Rate, stops/mi	0.20			0.31		
1	Through vol/cap Ratio	0.22			0.85		
1	Percent of Base FFS	92.34			86.57		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.38			2.39		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.71	E	4.56	E
1	Transit Segment LOS Score / LOS	6.61	F	6.80	F

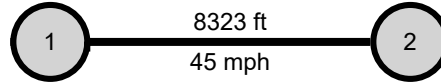
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	208.75	222.66	
Facility Travel Speed, mph	42.67	40.01			
Facility Base Free Flow Speed, mph	46.21	46.21			
Facility Percent of Base FFS	92.34	86.57			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.38	2.39			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.71	E	4.56
Transit Facility LOS Score / LOS	6.61	F	6.80

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	AMG			Number of Intersections	2
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1
Jurisdiction	City of Patterson	Time Period	PM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00
Project Description	Cumulative + Project (No Zacharias IC)				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	122.22			125.84		
1	Running Speed, mph	46.43			45.10		
1	Through Delay, s/veh	12.85			17.75		
1	Travel Time, s	135.07			143.58		
1	Travel Speed, mph	42.01			39.52		
1	Stop Rate, stops/veh	0.51			0.63		
1	Spatial Stop Rate, stops/mi	0.32			0.40		
1	Through vol/cap Ratio	0.03			0.92		
1	Percent of Base FFS	90.25			84.90		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.40			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.41	C	4.25	D
1	Transit Segment LOS Score / LOS	6.41	F	6.69	F

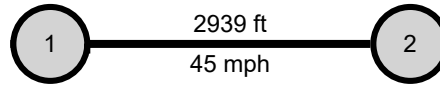
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		135.07		143.58	
Facility Travel Speed, mph		42.01		39.52	
Facility Base Free Flow Speed, mph		46.55		46.55	
Facility Percent of Base FFS		90.25		84.90	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.40		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.41	C	4.25	D	
Transit Facility LOS Score / LOS	6.41	F	6.69	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1 > 7:00	
Project Description	Cumulative+Project (No Zach IC)-Mitigated					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	2	2	2939	2939	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.78			47.09		
1	Running Time, s	46.19			45.06		
1	Running Speed, mph	43.38			44.47		
1	Through Delay, s/veh	11.13			35.00		
1	Travel Time, s	57.32			80.06		
1	Travel Speed, mph	34.96			25.03		
1	Stop Rate, stops/veh	0.57			0.70		
1	Spatial Stop Rate, stops/mi	1.03			1.26		
1	Through vol/cap Ratio	0.40			0.53		
1	Percent of Base FFS	76.37			53.15		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.29			2.33		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	3.89	D
1	Bicycle Segment LOS Score / LOS	4.84	E	4.70	E
1	Transit Segment LOS Score / LOS	6.61	F	6.48	F

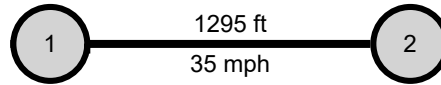
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	57.32	80.06	
Facility Travel Speed, mph	34.96	25.03			
Facility Base Free Flow Speed, mph	45.78	47.09			
Facility Percent of Base FFS	76.37	53.15			
Facility Level of Service	B	C			
Facility Auto Traveler Perception Score	2.29	2.33			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS		F	3.89	D
Bicycle Facility LOS Score / LOS	4.84	E	4.70	E
Transit Facility LOS Score / LOS	6.61	F	6.48	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative+Project (No Zach IC)-Mitigated					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		0.22	never	
1	Shared Lane Spillback Time, h				0.34		never
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.65			27.13	
1	Running Speed, mph		33.13			32.55	
1	Through Delay, s/veh		0.60			26.73	
1	Travel Time, s		27.26			53.86	
1	Travel Speed, mph		32.40			16.39	
1	Stop Rate, stops/veh		0.07			0.57	
1	Spatial Stop Rate, stops/mi		0.30			2.34	
1	Through vol/cap Ratio		0.35			0.64	
1	Percent of Base FFS		85.25			43.01	
1	Level of Service		A			D	
1	Auto Traveler Perception Score		2.18			2.50	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.68	D	4.05	D
1	Bicycle Segment LOS Score / LOS	3.84	D	6.99	F
1	Transit Segment LOS Score / LOS	4.53	E	5.05	F

Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	27.26	53.86	
Facility Travel Speed, mph	32.40	16.39			
Facility Base Free Flow Speed, mph	38.00	38.12			
Facility Percent of Base FFS	85.25	43.01			
Facility Level of Service	A	D			
Facility Auto Traveler Perception Score	2.18	2.50			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.68	D	4.05	D
Bicycle Facility LOS Score / LOS	3.84	D	6.99	F
Transit Facility LOS Score / LOS	4.53	E	5.05	F

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040PP
Description: Patterson NW Annex Segment Analysis

Flow Inputs and Adjustments

Volume, V	5641	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1500	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	3181	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

LOS and Performance Measures

Flow rate, vp	3181	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	20.0	mi/h
Number of lanes, N	2	
Density, D	158.9	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040PP
Description: Patterson NW Annex Segment Analysis

-----Flow Inputs and Adjustments-----

Volume, V	5117	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1361	v
Trucks and buses	22	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, fp	1.00	
Flow rate, vp	3021	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	3021	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	23.3	mi/h
Number of lanes, N	2	
Density, D	129.5	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040PP
Description: Patterson NW Annex

Flow Inputs and Adjustments

Volume, V	5255	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1398	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	3089	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

LOS and Performance Measures

Flow rate, vp	3089	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	24.5	mi/h
Number of lanes, N	2	
Density, D	125.8	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040PP
Description: Patterson NW Annex

----- Flow Inputs and Adjustments -----

Volume, V	4510	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1199	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2651	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2651	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	42.8	mi/h
Number of lanes, N	2	
Density, D	61.9	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040PP
Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	4616	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1228	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, fp	1.00	
Flow rate, vp	2664	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2664	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	42.3	mi/h
Number of lanes, N	2	
Density, D	62.9	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040PP
Description: Patterson NW Annex Segment Analysis

Flow Inputs and Adjustments

Volume, V	5562	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1479	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	3136	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	55.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	55.0	mi/h

LOS and Performance Measures

Flow rate, vp	3136	pc/h/ln
Free-flow speed, FFS	55.0	mi/h
Average passenger-car speed, S	10.9	mi/h
Number of lanes, N	2	
Density, D	286.9	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040PP
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	4409	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1173	v
Trucks and buses	16	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.926	
Driver population factor, fp	1.00	
Flow rate, vp	2533	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	58.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	58.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2533	pc/h/ln
Free-flow speed, FFS	58.0	mi/h
Average passenger-car speed, S	44.2	mi/h
Number of lanes, N	2	
Density, D	57.3	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040PP
Description: Patterson NW Annex

----- Flow Inputs and Adjustments -----

Volume, V	5137	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1366	v
Trucks and buses	19	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.913	
Driver population factor, fp	1.00	
Flow rate, vp	2992	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2992	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	24.8	mi/h
Number of lanes, N	2	
Density, D	120.6	pc/mi/ln
Level of service, LOS	F	

TRAFFIC IMPACT STUDY FOR PROPOSED ZACHARIAS AND BALDWIN MASTER PLAN IN PATTERSON,
CALIFORNIA

Appendix G Intersection Analysis: 2040 cumulative plus project Conditions (with new Zacharias interchange) LOS Calculation
Sheets

February 7, 2020

Appendix G **INTERSECTION ANALYSIS: 2040 CUMULATIVE PLUS
PROJECT CONDITIONS (WITH NEW ZACHARIAS
INTERCHANGE) LOS CALCULATION SHEETS**

Intersection												
Int Delay, s/veh	116.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	354	16	174	678	0	0	0	0	138	1	148
Future Vol, veh/h	0	354	16	174	678	0	0	0	0	138	1	148
Conflicting Peds, #/hr	0	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	20	20	17	0	0	0	0	20	20	17
Mvmt Flow	0	385	17	189	737	0	0	0	0	150	1	161

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	402	0	0	1509	1517	737
Stage 1	-	-	-	-	-	-	1115	1115	-
Stage 2	-	-	-	-	-	-	394	402	-
Critical Hdwy	-	-	-	4.3	-	-	6.6	6.7	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	5.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.6	5.7	-
Follow-up Hdwy	-	-	-	2.38	-	-	3.68	4.18	3.453
Pot Cap-1 Maneuver	0	-	-	1066	-	0	~ 121	109	395
Stage 1	0	-	-	-	-	0	289	263	-
Stage 2	0	-	-	-	-	0	644	570	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1066	-	-	~ 85	0	395
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 85	0	-
Stage 1	-	-	-	-	-	-	289	0	-
Stage 2	-	-	-	-	-	-	451	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.9	\$ 604.9
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1066	-	143
HCM Lane V/C Ratio	-	-	0.177	-	2.182
HCM Control Delay (s)	-	-	9.1	0	\$ 604.9
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.6	-	25.7

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	119.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	99	393	0	0	726	418	126	1	285	0	0	0
Future Vol, veh/h	99	393	0	0	726	418	126	1	285	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	16	0	0	20	10	0	0	16	0	0	0
Mvmt Flow	108	427	0	0	789	454	137	1	310	0	0	0
























Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	1243	0	- - - 0 1659 1886 427
Stage 1	-	-	- - - 643 643 -
Stage 2	-	-	- - - 1016 1243 -
Critical Hdwy	4.1	-	- - - 6.4 6.5 6.36
Critical Hdwy Stg 1	-	-	- - - 5.4 5.5 -
Critical Hdwy Stg 2	-	-	- - - 5.4 5.5 -
Follow-up Hdwy	2.2	-	- - - 3.5 4 3.444
Pot Cap-1 Maneuver	567	- 0 0	- - ~ 109 71 599
Stage 1	-	- 0 0	- - 527 472 -
Stage 2	-	- 0 0	- - 353 249 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	567	- - -	- - ~ 82 0 599
Mov Cap-2 Maneuver	-	- - -	- - ~ 82 0 -
Stage 1	-	- - -	- - 395 0 -
Stage 2	-	- - -	- - 353 0 -

Approach	EB	WB	NB
HCM Control Delay, s	2.6	0	\$ 591.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	204	567	-	-	-
HCM Lane V/C Ratio	2.195	0.19	-	-	-
HCM Control Delay (s)	\$ 591.2	12.8	0	-	-
HCM Lane LOS	F	B	A	-	-
HCM 95th %tile Q(veh)	35.2	0.7	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis 2040 Cumulative Plus Project (With Zach IC)
 3: Sperry Ave & Rogers Rd Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	299	214	76	750	214	188	3	60	90	0	206
Future Volume (vph)	165	299	214	76	750	214	188	3	60	90	0	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	3008	1583	1770	1652	1547	1770	1863	1583		1736	2632
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1656	3008	1583	1770	1652	1547	1770	1863	1583		1736	2632
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	325	233	83	815	233	204	3	65	98	0	224
RTOR Reduction (vph)	0	0	105	0	0	82	0	0	56	0	0	185
Lane Group Flow (vph)	179	325	128	83	815	151	204	3	9	0	98	39
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	9%	20%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8		7	7	5
Permitted Phases			2			6			8			7
Actuated Green, G (s)	14.9	72.8	72.8	10.8	66.7	66.7	19.0	19.0	19.0		8.0	22.9
Effective Green, g (s)	14.9	72.8	72.8	10.8	66.7	66.7	19.0	19.0	19.0		8.0	22.9
Actuated g/C Ratio	0.11	0.55	0.55	0.08	0.50	0.50	0.14	0.14	0.14		0.06	0.17
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	186	1657	872	144	834	781	254	267	227		105	456
v/s Ratio Prot	c0.11	c0.11		0.05	c0.49		c0.12	0.00			c0.06	0.01
v/s Ratio Perm			0.08			0.10			0.01			0.01
v/c Ratio	0.96	0.20	0.15	0.58	0.98	0.19	0.80	0.01	0.04		0.93	0.09
Uniform Delay, d1	58.3	14.9	14.5	58.4	32.0	17.9	54.7	48.5	48.7		61.8	45.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	54.7	0.1	0.2	5.5	25.4	0.1	16.6	0.0	0.1		66.4	0.1
Delay (s)	113.1	15.0	14.6	63.9	57.3	18.1	71.3	48.5	48.8		128.1	45.9
Level of Service	F	B	B	E	E	B	E	D	D		F	D
Approach Delay (s)		38.7			49.7			65.7			70.9	
Approach LOS		D			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			51.0				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			132.1				Sum of lost time (s)				23.5	
Intersection Capacity Utilization			80.3%				ICU Level of Service				D	
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave






















2040 Cumulative Plus Project (With Zach IC)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑		↔	↑↑	↑	↔	↑	↑	↔	↑	↑
Traffic Volume (veh/h)	66	493	8	9	490	15	173	90	26	14	15	74
Future Volume (veh/h)	66	493	8	9	490	15	173	90	26	14	15	74
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		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	1583	1745	1900	1900	1827	1583	1900	1900	1900	1583	1629	1900
Adj Flow Rate, veh/h	72	536	9	10	533	16	188	98	28	15	16	80
Adj No. of Lanes	2	1	0	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	224	736	12	55	1280	490	410	481	409	375	60	299
Arrive On Green	0.08	0.43	0.43	0.02	0.37	0.37	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	2925	1711	29	3510	3471	1329	1320	1900	1615	1071	237	1183
Grp Volume(v), veh/h	72	0	545	10	533	16	188	98	28	15	0	96
Grp Sat Flow(s),veh/h/ln	1463	0	1740	1755	1736	1329	1320	1900	1615	1071	0	1420
Q Serve(g_s), s	1.1	0.0	12.7	0.1	5.6	0.4	6.5	2.0	0.6	0.5	0.0	2.6
Cycle Q Clear(g_c), s	1.1	0.0	12.7	0.1	5.6	0.4	9.1	2.0	0.6	2.5	0.0	2.6
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.83
Lane Grp Cap(c), veh/h	224	0	748	55	1280	490	410	481	409	375	0	359
V/C Ratio(X)	0.32	0.00	0.73	0.18	0.42	0.03	0.46	0.20	0.07	0.04	0.00	0.27
Avail Cap(c_a), veh/h	366	0	1331	432	2647	1013	1078	1441	1225	916	0	1077
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	11.5	23.7	11.5	9.8	18.2	14.3	13.8	15.3	0.0	14.6
Incr Delay (d2), s/veh	0.8	0.0	2.9	1.6	0.5	0.1	0.8	0.2	0.1	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	6.7	0.1	2.7	0.1	2.4	1.1	0.3	0.2	0.0	1.1
LnGrp Delay(d),s/veh	22.1	0.0	14.5	25.3	11.9	9.9	19.0	14.6	13.9	15.4	0.0	15.0
LnGrp LOS	C		B	C	B	A	B	B	B	B		B
Approach Vol, veh/h		617			559			314			111	
Approach Delay, s/veh		15.4			12.1			17.2			15.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	26.7		16.8	8.2	23.7		16.8				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	6.1	37.2		37.0				
Max Q Clear Time (g_c+I), s	14.7	14.7		4.6	3.1	7.6		11.1				
Green Ext Time (p_c), s	0.0	6.3		0.6	0.0	6.8		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay			14.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	335	46	10	406	165	181	417	20	335	205	93
Future Volume (veh/h)	131	335	46	10	406	165	181	417	20	335	205	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1835	1900	1900	1792	1863	1900	1810	1900	1827	1888	1900
Adj Flow Rate, veh/h	142	364	50	11	441	179	197	453	22	364	223	101
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	4	4	0	6	2	0	5	5	4	0	0
Cap, veh/h	229	534	73	29	513	453	234	503	24	436	362	164
Arrive On Green	0.07	0.34	0.34	0.02	0.29	0.29	0.13	0.29	0.29	0.13	0.29	0.29
Sat Flow, veh/h	3312	1575	216	1810	1792	1583	1810	1712	83	3375	1232	558
Grp Volume(v), veh/h	142	0	414	11	441	179	197	0	475	364	0	324
Grp Sat Flow(s),veh/h/ln	1656	0	1792	1810	1792	1583	1810	0	1795	1688	0	1790
Q Serve(g_s), s	3.5	0.0	16.6	0.5	19.5	7.6	8.9	0.0	21.2	8.8	0.0	13.0
Cycle Q Clear(g_c), s	3.5	0.0	16.6	0.5	19.5	7.6	8.9	0.0	21.2	8.8	0.0	13.0
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.05	1.00		0.31
Lane Grp Cap(c), veh/h	229	0	608	29	513	453	234	0	528	436	0	526
V/C Ratio(X)	0.62	0.00	0.68	0.38	0.86	0.40	0.84	0.00	0.90	0.83	0.00	0.62
Avail Cap(c_a), veh/h	238	0	608	130	573	506	256	0	602	437	0	579
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.8	0.0	23.7	40.7	28.2	24.0	35.5	0.0	28.3	35.5	0.0	25.4
Incr Delay (d2), s/veh	3.2	0.0	4.1	16.2	13.4	1.2	18.7	0.0	15.3	12.4	0.0	1.7
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	1.7	0.0	8.8	0.4	11.5	3.5	5.7	0.0	12.7	4.8	0.0	6.6
LnGrp Delay(d),s/veh	41.0	0.0	27.8	56.8	41.6	25.2	54.3	0.0	43.7	47.9	0.0	27.1
LnGrp LOS	D		C	E	D	C	D		D	D		C
Approach Vol, veh/h		556			631			672			688	
Approach Delay, s/veh		31.2			37.2			46.8			38.1	
Approach LOS		C			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	33.8	15.0	29.1	10.0	29.4	15.0	29.2				
Change Period (Y+Rc), s	* 4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	* 6	26.7	* 12	27.0	* 6	26.7	* 11	28.0				
Max Q Clear Time (g_c+I1), s	2.5	18.6	10.9	15.0	5.5	21.5	10.8	23.2				
Green Ext Time (p_c), s	0.0	2.5	0.0	1.5	0.0	2.4	0.0	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay			38.7									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	654	31	39	522	54	54	124	75	80	81	105
Future Volume (veh/h)	77	654	31	39	522	54	54	124	75	80	81	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	84	711	34	42	567	59	59	135	82	87	88	114
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	149	1063	51	93	893	93	312	266	161	304	183	237
Arrive On Green	0.08	0.31	0.31	0.05	0.28	0.28	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1810	3397	162	1757	3149	327	1170	1088	661	1166	749	971
Grp Volume(v), veh/h	84	366	379	42	310	316	59	0	217	87	0	202
Grp Sat Flow(s),veh/h/ln	1810	1750	1809	1757	1722	1754	1170	0	1749	1166	0	1720
Q Serve(g_s), s	2.2	9.1	9.1	1.2	7.9	7.9	2.3	0.0	5.4	3.5	0.0	5.0
Cycle Q Clear(g_c), s	2.2	9.1	9.1	1.2	7.9	7.9	7.3	0.0	5.4	8.8	0.0	5.0
Prop In Lane	1.00		0.09	1.00		0.19	1.00		0.38	1.00		0.56
Lane Grp Cap(c), veh/h	149	548	566	93	488	497	312	0	427	304	0	420
V/C Ratio(X)	0.56	0.67	0.67	0.45	0.63	0.64	0.19	0.00	0.51	0.29	0.00	0.48
Avail Cap(c_a), veh/h	217	787	814	211	775	789	541	0	769	532	0	757
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	14.9	14.9	23.0	15.7	15.7	19.3	0.0	16.3	20.1	0.0	16.2
Incr Delay (d2), s/veh	3.3	2.0	2.0	3.4	1.9	1.9	0.3	0.0	0.9	0.5	0.0	0.9
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	4.7	4.8	0.6	4.0	4.0	0.8	0.0	2.7	1.2	0.0	2.5
LnGrp Delay(d),s/veh	25.4	16.9	16.9	26.4	17.6	17.6	19.6	0.0	17.3	20.6	0.0	17.0
LnGrp LOS	C	B	B	C	B	B	B		B	C		B
Approach Vol, veh/h		829			668			276			289	
Approach Delay, s/veh		17.8			18.2			17.8			18.1	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	22.2		18.7	10.6	20.7		18.7				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.5	22.5		22.0	6.0	22.5		22.0				
Max Q Clear Time (g_c+1), s	11.1	11.1		10.8	4.2	9.9		9.3				
Green Ext Time (p_c), s	0.0	4.5		1.2	0.0	4.1		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			17.9									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	130	580	20	137	508	128	19	93	97	146	120	39
Future Volume (veh/h)	130	580	20	137	508	128	19	93	97	146	120	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1817	1900	1792	1827	1845	1900	1827	1900	1900	1863	1776
Adj Flow Rate, veh/h	141	630	22	149	552	139	21	101	105	159	130	42
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
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, %	0	4	4	6	4	3	0	4	4	0	2	7
Cap, veh/h	155	910	32	188	964	429	52	157	163	198	506	403
Arrive On Green	0.09	0.27	0.27	0.11	0.28	0.28	0.03	0.19	0.19	0.11	0.27	0.27
Sat Flow, veh/h	1810	3402	119	1707	3471	1546	1810	821	854	1810	1863	1482
Grp Volume(v), veh/h	141	320	332	149	552	139	21	0	206	159	130	42
Grp Sat Flow(s),veh/h/ln	1810	1727	1794	1707	1736	1546	1810	0	1675	1810	1863	1482
Q Serve(g_s), s	5.4	11.7	11.7	6.0	9.6	5.0	0.8	0.0	8.0	6.0	3.8	1.5
Cycle Q Clear(g_c), s	5.4	11.7	11.7	6.0	9.6	5.0	0.8	0.0	8.0	6.0	3.8	1.5
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	155	462	480	188	964	429	52	0	320	198	506	403
V/C Ratio(X)	0.91	0.69	0.69	0.79	0.57	0.32	0.40	0.00	0.64	0.80	0.26	0.10
Avail Cap(c_a), veh/h	155	610	634	365	1623	723	155	0	812	222	972	773
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	23.1	23.1	30.4	21.8	20.1	33.5	0.0	26.2	30.5	20.0	19.1
Incr Delay (d2), s/veh	47.1	4.1	4.0	7.4	1.2	0.9	5.0	0.0	4.6	17.2	0.6	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	4.7	6.0	6.3	3.2	4.8	2.2	0.5	0.0	4.1	4.0	2.0	0.6
LnGrp Delay(d),s/veh	78.9	27.2	27.1	37.8	22.9	21.0	38.5	0.0	30.8	47.7	20.6	19.4
LnGrp LOS	E	C	C	D	C	C	D		C	D	C	B
Approach Vol, veh/h		793			840			227			331	
Approach Delay, s/veh		36.4			25.3			31.5			33.5	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	24.8	6.6	25.1	13.0	25.5	12.3	19.4				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	15.0	24.8	6.0	36.6	6.0	32.8	8.6	34.0				
Max Q Clear Time (g_c+I), s	10.0	13.7	2.8	5.8	7.4	11.6	8.0	10.0				
Green Ext Time (p_c), s	0.2	4.6	0.0	1.7	0.0	7.1	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				31.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	306	32	14	444	33	65	97	19	4	44	129
Future Volume (veh/h)	225	306	32	14	444	33	65	97	19	4	44	129
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	0.99		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	245	333	35	15	483	36	71	105	21	4	48	140
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	528	1755	183	705	978	896	219	208	36	98	85	236
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	878	3156	329	1029	1759	1611	465	1053	181	13	431	1194
Grp Volume(v), veh/h	245	181	187	15	483	36	197	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	878	1727	1759	1029	1759	1611	1700	0	0	1637	0	0
Q Serve(g_s), s	9.1	2.0	2.0	0.3	6.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.6	2.0	2.0	2.3	6.5	0.4	3.7	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.19	1.00		1.00	0.36		0.11	0.02		0.73
Lane Grp Cap(c), veh/h	528	960	978	705	978	896	463	0	0	419	0	0
V/C Ratio(X)	0.46	0.19	0.19	0.02	0.49	0.04	0.43	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	641	1184	1205	838	1206	1104	1118	0	0	1116	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	4.2	4.2	4.8	5.2	3.9	13.9	0.0	0.0	14.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.2	0.2	0.0	0.8	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.0	1.0	0.1	3.3	0.2	1.9	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	11.4	4.4	4.4	4.8	6.1	3.9	14.5	0.0	0.0	14.8	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		613			534			197			192	
Approach Delay, s/veh		7.2			5.9			14.5			14.8	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.0		12.5		26.0		12.5				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.4		24.1		26.4		24.1				
Max Q Clear Time (g_c+1), s		17.6		5.7		8.5		6.1				
Green Ext Time (p_c), s		3.8		1.1		5.5		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				8.6								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	935.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	143	167	63	36	135	52	134	418	55	30	275	247
Future Vol, veh/h	143	167	63	36	135	52	134	418	55	30	275	247
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	4	0	14	9	8	4	6	12	0	12	10
Mvmt Flow	155	182	68	39	147	57	146	454	60	33	299	268

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1244	1171	299	1266	1141	485	299	0	0	514	0	0
Stage 1	365	365	-	776	776	-	-	-	-	-	-	-
Stage 2	879	806	-	490	365	-	-	-	-	-	-	-
Critical Hdwy	7.2	6.54	6.2	7.24	6.59	6.28	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.2	5.54	-	6.24	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.59	4.036	3.3	3.626	4.081	3.372	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 145	191	745	138	195	570	1251	-	-	1062	-	0
Stage 1	638	620	-	373	397	-	-	-	-	-	-	0
Stage 2	331	392	-	538	611	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	~ 20	~ 154	745	-	157	569	1251	-	-	1062	-	-
Mov Cap-2 Maneuver	~ 20	~ 154	-	-	157	-	-	-	-	-	-	-
Stage 1	533	597	-	311	331	-	-	-	-	-	-	-
Stage 2	~ 138	327	-	327	588	-	-	-	-	-	-	-






















Approach	EB		WB		NB		SB	
HCM Control Delay, \$	3777.2				1.8		0.8	
HCM LOS	F							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1251	-	-	45	-	569	1062	-
HCM Lane V/C Ratio	0.116	-	-	9.01	-	0.099	0.031	-
HCM Control Delay (s)	8.3	0		\$ 3777.2	-	12	8.5	0
HCM Lane LOS	A	A	-	F	-	B	A	A
HCM 95th %tile Q(veh)	0.4	-	-	48.2	-	0.3	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
10: SR-33 & M St/Walnut Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	173	69	165	147	22	101	255	184	74	567	96
Future Volume (veh/h)	30	173	69	165	147	22	101	255	184	74	567	96
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	33	188	75	179	160	24	110	277	200	80	616	104
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	220	158	63	223	199	30	128	428	309	97	611	103
Arrive On Green	0.12	0.12	0.12	0.13	0.13	0.13	0.08	0.48	0.48	0.06	0.46	0.46
Sat Flow, veh/h	1774	1268	506	1774	1583	238	1587	901	651	1521	1332	225
Grp Volume(v), veh/h	33	0	263	179	0	184	110	0	477	80	0	720
Grp Sat Flow(s),veh/h/ln	1774	0	1773	1774	0	1821	1587	0	1552	1521	0	1557
Q Serve(g_s), s	1.4	0.0	10.8	8.5	0.0	8.5	6.0	0.0	20.2	4.5	0.0	39.9
Cycle Q Clear(g_c), s	1.4	0.0	10.8	8.5	0.0	8.5	6.0	0.0	20.2	4.5	0.0	39.9
Prop In Lane	1.00		0.29	1.00		0.13	1.00		0.42	1.00		0.14
Lane Grp Cap(c), veh/h	220	0	220	223	0	229	128	0	738	97	0	715
V/C Ratio(X)	0.15	0.00	1.19	0.80	0.00	0.80	0.86	0.00	0.65	0.82	0.00	1.01
Avail Cap(c_a), veh/h	220	0	220	592	0	607	128	0	738	105	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	38.1	37.0	0.0	37.0	39.5	0.0	17.3	40.2	0.0	23.5
Incr Delay (d2), s/veh	0.1	0.0	122.8	2.6	0.0	2.5	39.6	0.0	1.5	33.5	0.0	35.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	12.8	4.3	0.0	4.5	4.0	0.0	8.9	2.8	0.0	24.1
LnGrp Delay(d),s/veh	34.1	0.0	160.9	39.5	0.0	39.5	79.1	0.0	18.8	73.7	0.0	59.0
LnGrp LOS	C		F	D		D	E		B	E		F
Approach Vol, veh/h		296			363			587			800	
Approach Delay, s/veh		146.8			39.5			30.1			60.5	
Approach LOS		F			D			C			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.0	9.6	46.2		16.1	11.0	44.8				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 11	6.0	40.9		29.0	7.0	39.9				
Max Q Clear Time (g_c+I1), s		12.8	6.5	22.2		10.5	8.0	41.9				
Green Ext Time (p_c), s		0.0	0.0	0.5		0.4	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			60.5									
HCM 2010 LOS			E									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Cumulative Plus Project (With Zach IC)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	279	6	221	452	164	2	302	331	201	339	4
Future Volume (veh/h)	24	279	6	221	452	164	2	302	331	201	339	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.97	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	1777	1900	1845	1743	1900	1827	1713	1900	1743	1881	1900
Adj Flow Rate, veh/h	26	303	7	240	491	178	2	328	360	218	368	4
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	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, %	0	7	7	3	9	0	4	1	1	9	1	1
Cap, veh/h	225	421	10	416	591	534	389	451	403	281	1305	14
Arrive On Green	0.03	0.24	0.24	0.12	0.34	0.34	0.00	0.28	0.28	0.09	0.36	0.36
Sat Flow, veh/h	1810	1729	40	1757	1743	1573	1740	1627	1453	1660	3620	39
Grp Volume(v), veh/h	26	0	310	240	491	178	2	328	360	218	181	191
Grp Sat Flow(s),veh/h/ln	1810	0	1769	1757	1743	1573	1740	1627	1453	1660	1787	1873
Q Serve(g_s), s	0.7	0.0	10.5	6.2	16.9	5.5	0.1	11.9	15.5	5.6	4.7	4.7
Cycle Q Clear(g_c), s	0.7	0.0	10.5	6.2	16.9	5.5	0.1	11.9	15.5	5.6	4.7	4.7
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	225	0	430	416	591	534	389	451	403	281	644	675
V/C Ratio(X)	0.12	0.00	0.72	0.58	0.83	0.33	0.01	0.73	0.89	0.78	0.28	0.28
Avail Cap(c_a), veh/h	326	0	823	696	1158	1045	598	577	515	281	644	675
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	0.0	22.6	15.2	19.8	16.0	16.9	21.3	22.6	17.4	14.8	14.8
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.5	1.2	0.1	0.0	2.2	13.1	11.7	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	0.3	0.0	5.2	3.1	8.2	2.4	0.0	5.6	7.7	2.3	2.3	2.5
LnGrp Delay(d),s/veh	18.5	0.0	23.5	15.7	21.0	16.2	16.9	23.5	35.7	29.2	14.9	14.9
LnGrp LOS	B		C	B	C	B	B	C	D	C	B	B
Approach Vol, veh/h		336			909			690			590	
Approach Delay, s/veh		23.1			18.6			29.8			20.2	
Approach LOS		C			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	26.7	9.6	23.0	12.1	20.4	4.2	28.4				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	43.3	5.6	23.1	18.5	30.3	8.0	20.7				
Max Q Clear Time (g_c+I), s	12.7	18.9	7.6	17.5	8.2	12.5	2.1	6.7				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.5	0.0	0.4	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			22.6									
HCM 2010 LOS			C									

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	↗
Traffic Vol, veh/h	82	217	153	31	113	292	42	378	11	173	828	18
Future Vol, veh/h	82	217	153	31	113	292	42	378	11	173	828	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	14	14	14	19	19	19
Mvmt Flow	89	236	166	34	123	317	46	411	12	188	900	20

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2005	1791	900	1996	1805	417	920	0	0	423	0	0
Stage 1	1276	1276	-	509	509	-	-	-	-	-	-	-
Stage 2	729	515	-	1487	1296	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.24	-	-	4.29	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.326	-	-	2.371	-	-
Pot Cap-1 Maneuver	~ 44	~ 81	337	45	~ 79	636	695	-	-	1051	-	-
Stage 1	205	238	-	547	538	-	-	-	-	-	-	-
Stage 2	414	535	-	155	232	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 47	337	-	~ 46	636	695	-	-	1051	-	-
Mov Cap-2 Maneuver	-	~ 47	-	-	~ 46	-	-	-	-	-	-	-
Stage 1	187	~ 151	-	499	491	-	-	-	-	-	-	-
Stage 2	142	488	-	-	147	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1	1.6
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	695	-	-	-	337	-	1051	-	-
HCM Lane V/C Ratio	0.066	-	-	-	0.493	-	0.179	-	-
HCM Control Delay (s)	10.5	0	-	-	25.7	-	9.2	0	-
HCM Lane LOS	B	A	-	-	D	-	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	2.6	-	0.7	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	2	105	21	8	55	5	91	1	6	2	1	0
Future Vol, veh/h	2	105	21	8	55	5	91	1	6	2	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	20	20	10	0	20	0	20	0	20	0
Mvmt Flow	2	114	23	9	60	5	99	1	7	2	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	137	0	0	211	213	127	216	222	63
Stage 1	-	-	-	-	-	-	130	130	-	81	81	-
Stage 2	-	-	-	-	-	-	81	83	-	135	141	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.3	6.5	6.4	7.1	6.7	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.7	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.68	4	3.48	3.5	4.18	3.3
Pot Cap-1 Maneuver	1550	-	-	1343	-	-	709	688	877	745	646	1007
Stage 1	-	-	-	-	-	-	832	792	-	932	794	-
Stage 2	-	-	-	-	-	-	885	830	-	873	747	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1550	-	-	1343	-	-	704	682	876	733	641	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	704	682	-	733	641	-
Stage 1	-	-	-	-	-	-	831	791	-	931	788	-
Stage 2	-	-	-	-	-	-	878	824	-	863	746	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.9			10.8			10.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	704	842	1550	-	-	1343	-	-	700
HCM Lane V/C Ratio	0.141	0.009	0.001	-	-	0.006	-	-	0.005
HCM Control Delay (s)	10.9	9.3	7.3	-	-	7.7	-	-	10.2
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔		↕	↑	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	120	103	26	16	17	14	3	67	28	32	37	8
Future Vol, veh/h	120	103	26	16	17	14	3	67	28	32	37	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	200	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	0	14	0	2	20	9	7	0
Mvmt Flow	130	112	28	17	18	15	3	73	30	35	40	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	226	224	45	264	198	73	49	0	0	103	0	0
Stage 1	115	115	-	79	79	-	-	-	-	-	-	-
Stage 2	111	109	-	185	119	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.3	6.5	6.34	4.1	-	-	4.19	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.68	4	3.426	2.2	-	-	2.281	-	-
Pot Cap-1 Maneuver	729	675	1025	654	701	956	1571	-	-	1446	-	-
Stage 1	890	800	-	887	833	-	-	-	-	-	-	-
Stage 2	894	805	-	777	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	689	657	1025	542	683	956	1571	-	-	1446	-	-
Mov Cap-2 Maneuver	689	657	-	542	683	-	-	-	-	-	-	-
Stage 1	888	781	-	885	831	-	-	-	-	-	-	-
Stage 2	858	803	-	632	782	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.4		10.4		0.2		3.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	699	542	683	956	1446	-	-
HCM Lane V/C Ratio	0.002	-	-	0.387	0.032	0.027	0.016	0.024	-	-
HCM Control Delay (s)	7.3	0	-	13.4	11.9	10.4	8.8	7.6	-	-
HCM Lane LOS	A	A	-	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.8	0.1	0.1	0	0.1	-	-

Intersection												
Int Delay, s/veh	18.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	224	125	14	122	20	21	151	10	16	243	8
Future Vol, veh/h	26	224	125	14	122	20	21	151	10	16	243	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	2	2	2	19	19	19	16	16	16
Mvmt Flow	28	243	136	15	133	22	23	164	11	17	264	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	596	524	269	708	523	170	273	0	0	175	0	0
Stage 1	303	303	-	216	216	-	-	-	-	-	-	-
Stage 2	293	221	-	492	307	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.12	6.52	6.22	4.29	-	-	4.26	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.518	4.018	3.318	2.371	-	-	2.344	-	-
Pot Cap-1 Maneuver	411	454	762	350	459	874	1198	-	-	1321	-	-
Stage 1	700	658	-	786	724	-	-	-	-	-	-	-
Stage 2	709	715	-	558	661	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	300	438	762	157	442	874	1198	-	-	1321	-	-
Mov Cap-2 Maneuver	300	438	-	157	442	-	-	-	-	-	-	-
Stage 1	685	648	-	769	709	-	-	-	-	-	-	-
Stage 2	550	700	-	282	651	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	38.7		20.3		0.9		0.5	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1198	-	-	492	402	1321	-	-
HCM Lane V/C Ratio	0.019	-	-	0.828	0.422	0.013	-	-
HCM Control Delay (s)	8.1	0	-	38.7	20.3	7.8	0	-
HCM Lane LOS	A	A	-	E	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	8.2	2	0	-	-

Intersection	
Intersection Delay, s/veh	130.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	84	81	27	51	14	294	391	148	2	259	55
Future Vol, veh/h	7	84	81	27	51	14	294	391	148	2	259	55
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
Heavy Vehicles, %	5	5	5	2	2	2	5	5	5	18	18	18
Mvmt Flow	8	91	88	29	55	15	320	425	161	2	282	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.5	13.1	210	18.9
HCM LOS	B	B	F	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	4%	29%	1%
Vol Thru, %	47%	49%	55%	82%
Vol Right, %	18%	47%	15%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	833	172	92	316
LT Vol	294	7	27	2
Through Vol	391	84	51	259
RT Vol	148	81	14	55
Lane Flow Rate	905	187	100	343
Geometry Grp	1	1	1	1
Degree of Util (X)	1.408	0.347	0.199	0.587
Departure Headway (Hd)	5.599	7.54	8.107	6.732
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	652	480	446	539
Service Time	3.64	5.54	6.107	4.732
HCM Lane V/C Ratio	1.388	0.39	0.224	0.636
HCM Control Delay	210	14.5	13.1	18.9
HCM Lane LOS	F	B	B	C
HCM 95th-tile Q	40.8	1.5	0.7	3.8

Intersection						
Int Delay, s/veh	86.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	60	330	314	291	498	16
Future Vol, veh/h	60	330	314	291	498	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	65	359	341	316	541	17

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1548	550	558	0	-	0
Stage 1	550	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	124	529	946	-	-	-
Stage 1	572	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	70	529	946	-	-	-
Mov Cap-2 Maneuver	70	-	-	-	-	-
Stage 1	322	-	-	-	-	-
Stage 2	352	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	326.3	5.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	946	-	263	-	-
HCM Lane V/C Ratio	0.361	-	1.612	-	-
HCM Control Delay (s)	10.9		326.3	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	1.7	-	26.2	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	29.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	4	625	283	35	273	544
Future Vol, veh/h	4	625	283	35	273	544
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	20	16	16	17	17
Mvmt Flow	4	679	308	38	297	591

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1512	327	0	0	346
Stage 1	327	-	-	-	-
Stage 2	1185	-	-	-	-
Critical Hdwy	6.6	6.4	-	-	4.27
Critical Hdwy Stg 1	5.6	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-
Follow-up Hdwy	3.68	3.48	-	-	2.353
Pot Cap-1 Maneuver	120	~ 675	-	-	1134
Stage 1	692	-	-	-	-
Stage 2	267	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	73	~ 675	-	-	1134
Mov Cap-2 Maneuver	73	-	-	-	-
Stage 1	692	-	-	-	-
Stage 2	163	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	79.6	0	3.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	641	1134
HCM Lane V/C Ratio	-	-	1.067	0.262
HCM Control Delay (s)	-	-	79.6	9.3
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	18.9	1.1

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	198.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		L		T	
Traffic Vol, veh/h	393	9	2	751	466	84
Future Vol, veh/h	393	9	2	751	466	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	16	16	17	17
Mvmt Flow	427	10	2	816	507	91

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1373	553	598	0	-	0
Stage 1	553	-	-	-	-	-
Stage 2	820	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.26	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.344	-	-	-
Pot Cap-1 Maneuver	~ 158	527	914	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 157	527	914	-	-	-
Mov Cap-2 Maneuver	~ 157	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	428	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	840.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	914	-	160	-	-
HCM Lane V/C Ratio	0.002	-	2.731	-	-
HCM Control Delay (s)	8.9		840.5	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0	-	38.8	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	127.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	498	126	6	395	368	52
Future Vol, veh/h	498	126	6	395	368	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	17	17	16	16	19	19
Mvmt Flow	541	137	7	429	400	57

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	678	0	1053 610
Stage 1	-	-	-	-	610 -
Stage 2	-	-	-	-	443 -
Critical Hdwy	-	-	4.26	-	6.59 6.39
Critical Hdwy Stg 1	-	-	-	-	5.59 -
Critical Hdwy Stg 2	-	-	-	-	5.59 -
Follow-up Hdwy	-	-	2.344	-	3.671 3.471
Pot Cap-1 Maneuver	-	-	852	-	~ 233 465
Stage 1	-	-	-	-	511 -
Stage 2	-	-	-	-	613 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	852	-	~ 230 465
Mov Cap-2 Maneuver	-	-	-	-	~ 230 -
Stage 1	-	-	-	-	511 -
Stage 2	-	-	-	-	606 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	\$ 437.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	245	-	-	852	-
HCM Lane V/C Ratio	1.863	-	-	0.008	-
HCM Control Delay (s)	\$ 437.7	-	-	9.3	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	31.8	-	-	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	276.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	53	132	93	0	580	29	84	322	0	0	262	22
Future Vol, veh/h	53	132	93	0	580	29	84	322	0	0	262	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	20	20	20	20	20	2	2	2	2	2	2
Mvmt Flow	58	143	101	0	630	32	91	350	0	0	285	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1160	829	297	951	841	350	309	0	0	350	0	0
Stage 1	297	297	-	532	532	-	-	-	-	-	-	-
Stage 2	863	532	-	419	309	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	159	287	702	222	~ 282	654	1252	-	-	1209	-	-
Stage 1	675	636	-	500	~ 497	-	-	-	-	-	-	-
Stage 2	325	497	-	578	~ 628	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	261	702	101	~ 257	654	1252	-	-	1209	-	-
Mov Cap-2 Maneuver	-	261	-	101	~ 257	-	-	-	-	-	-	-
Stage 1	614	636	-	455	~ 452	-	-	-	-	-	-	-
Stage 2	-	452	-	383	~ 628	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 714.6	1.7	0
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1252	-	-	-	265	1209	-
HCM Lane V/C Ratio	0.073	-	-	-	2.498	-	-
HCM Control Delay (s)	8.1	0	-	-	\$ 714.6	0	-
HCM Lane LOS	A	A	-	-	F	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	54.2	0	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	23	205	1	4	0	244	489	17	1	20	1
Future Vol, veh/h	23	23	205	1	4	0	244	489	17	1	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	20	20	20	20	20	2	2	2	2	2	2
Mvmt Flow	25	25	223	1	4	0	265	532	18	1	22	1





















Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1098	1105	23	1220	1096	541	23	0	0	550	0	0
Stage 1	25	25	-	1071	1071	-	-	-	-	-	-	-
Stage 2	1073	1080	-	149	25	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	176	196	1004	144	198	508	1592	-	-	1020	-	-
Stage 1	948	840	-	247	276	-	-	-	-	-	-	-
Stage 2	246	273	-	813	840	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	140	149	1004	80	150	508	1592	-	-	1020	-	-
Mov Cap-2 Maneuver	140	149	-	80	150	-	-	-	-	-	-	-
Stage 1	720	839	-	188	210	-	-	-	-	-	-	-
Stage 2	183	207	-	613	839	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.9		34.4		2.5		0.4	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	480	128	1020	-	-
HCM Lane V/C Ratio	0.167	-	-	0.568	0.042	0.001	-	-
HCM Control Delay (s)	7.7	0	-	21.9	34.4	8.5	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	3.5	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

2040 Cumulative Plus Project (With Zach IC)
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	533	8	11	403	44	13	137	248	65	43	17
Future Volume (veh/h)	14	533	8	11	403	44	13	137	248	65	43	17
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	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	579	9	12	438	48	14	149	270	71	47	18
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	30	639	10	23	532	58	30	170	309	94	414	159
Arrive On Green	0.02	0.37	0.37	0.01	0.37	0.37	0.02	0.29	0.29	0.05	0.32	0.32
Sat Flow, veh/h	1675	1728	27	1560	1451	159	1774	595	1078	1774	1284	492
Grp Volume(v), veh/h	15	0	588	12	0	486	14	0	419	71	0	65
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1610	1774	0	1673	1774	0	1776
Q Serve(g_s), s	0.6	0.0	22.6	0.5	0.0	19.5	0.6	0.0	17.0	2.8	0.0	1.8
Cycle Q Clear(g_c), s	0.6	0.0	22.6	0.5	0.0	19.5	0.6	0.0	17.0	2.8	0.0	1.8
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.64	1.00		0.28
Lane Grp Cap(c), veh/h	30	0	649	23	0	590	30	0	479	94	0	573
V/C Ratio(X)	0.50	0.00	0.91	0.52	0.00	0.82	0.46	0.00	0.87	0.75	0.00	0.11
Avail Cap(c_a), veh/h	118	0	745	110	0	684	125	0	616	225	0	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.6	0.0	21.2	34.8	0.0	20.4	34.6	0.0	24.1	33.2	0.0	16.9
Incr Delay (d2), s/veh	12.1	0.0	13.6	16.8	0.0	7.1	10.7	0.0	10.9	11.5	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	0.4	0.0	13.4	0.3	0.0	9.8	0.4	0.0	9.2	1.7	0.0	0.9
LnGrp Delay(d),s/veh	46.6	0.0	34.8	51.5	0.0	27.6	45.3	0.0	35.0	44.7	0.0	17.0
LnGrp LOS	D		C	D		C	D		D	D		B
Approach Vol, veh/h		603			498			433				136
Approach Delay, s/veh		35.1			28.1			35.3				31.5
Approach LOS		D			C			D				C
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	26.2	5.1	32.1	5.2	28.7	5.3	31.9				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	9.0	26.2	5.0	30.2	5.0	30.2	5.0	30.2				
Max Q Clear Time (g_c+I1), s	4.8	19.0	2.5	24.6	2.6	3.8	2.6	21.5				
Green Ext Time (p_c), s	0.0	1.4	0.0	1.7	0.0	0.3	0.0	1.9				
Intersection Summary												
HCM 2010 Ctrl Delay			32.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	464	5	17	568	59	66	66	170	188	19	23
Future Volume (veh/h)	2	464	5	17	568	59	66	66	170	188	19	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	504	5	18	617	64	72	72	185	204	21	25
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	5	758	8	34	664	69	152	130	266	341	36	29
Arrive On Green	0.00	0.44	0.44	0.02	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1675	1739	17	1560	1460	151	280	475	969	832	132	107
Grp Volume(v), veh/h	2	0	509	18	0	681	329	0	0	250	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1756	1560	0	1611	1724	0	0	1071	0	0
Q Serve(g_s), s	0.1	0.0	13.4	0.7	0.0	23.2	0.0	0.0	0.0	3.4	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	13.4	0.7	0.0	23.2	9.8	0.0	0.0	13.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.22		0.56	0.82		0.10
Lane Grp Cap(c), veh/h	5	0	765	34	0	733	548	0	0	406	0	0
V/C Ratio(X)	0.44	0.00	0.67	0.53	0.00	0.93	0.60	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	144	0	851	134	0	781	690	0	0	514	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.0	0.0	13.0	28.2	0.0	15.0	18.9	0.0	0.0	20.2	0.0	0.0
Incr Delay (d2), s/veh	54.2	0.0	1.7	12.3	0.0	16.9	1.1	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.7	0.4	0.0	13.7	4.8	0.0	0.0	4.0	0.0	0.0
LnGrp Delay(d),s/veh	83.2	0.0	14.7	40.5	0.0	31.9	20.0	0.0	0.0	21.7	0.0	0.0
LnGrp LOS	F		B	D		C	B			C		
Approach Vol, veh/h		511			699			329			250	
Approach Delay, s/veh		15.0			32.1			20.0			21.7	
Approach LOS		B			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.8	5.3	31.1		21.8	4.2	32.3				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		21.2	5.0	28.2		21.2	5.0	28.2				
Max Q Clear Time (g_c+1), s		11.8	2.7	15.4		15.3	2.1	25.2				
Green Ext Time (p_c), s		1.2	0.0	2.4		0.7	0.0	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			23.5									
HCM 2010 LOS			C									

Intersection						
Int Delay, s/veh	125.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	423	736	445	3	20	906
Future Vol, veh/h	423	736	445	3	20	906
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	14	14	2	2
Mvmt Flow	460	800	484	3	22	985

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	487	0	-	0	2206 486
Stage 1	-	-	-	-	486 -
Stage 2	-	-	-	-	1720 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1031	-	-	-	49 ~ 581
Stage 1	-	-	-	-	618 -
Stage 2	-	-	-	-	159 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1031	-	-	-	27 ~ 581
Mov Cap-2 Maneuver	-	-	-	-	27 -
Stage 1	-	-	-	-	342 -
Stage 2	-	-	-	-	159 -

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	\$ 338
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1031	-	-	-	27	581
HCM Lane V/C Ratio	0.446	-	-	-	0.805	1.695
HCM Control Delay (s)	11.3	-	-	-	\$ 318.6	\$ 338.4
HCM Lane LOS	B	-	-	-	F	F
HCM 95th %tile Q(veh)	2.3	-	-	-	2.5	57

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	291.7
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	60	558	674	258	469	104
Future Vol, veh/h	60	558	674	258	469	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	607	733	280	510	113
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	141.4	485.2	139
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	72%	10%	0%
Vol Thru, %	28%	0%	82%
Vol Right, %	0%	90%	18%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	932	618	573
LT Vol	674	60	0
Through Vol	258	0	469
RT Vol	0	558	104
Lane Flow Rate	1013	672	623
Geometry Grp	1	1	1
Degree of Util (X)	2.019	1.215	1.198
Departure Headway (Hd)	8.101	8.017	8.946
Convergence, Y/N	Yes	Yes	Yes
Cap	456	457	411
Service Time	6.101	6.017	6.946
HCM Lane V/C Ratio	2.221	1.47	1.516
HCM Control Delay	485.2	141.4	139
HCM Lane LOS	F	F	F
HCM 95th-tile Q	62	21.6	19.3

Intersection	
Intersection Delay, s/veh	260.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	363	398	103	675	0	340	0	255	0	0	0
Future Vol, veh/h	0	363	398	103	675	0	340	0	255	0	0	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	395	433	112	734	0	370	0	277	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	277.3	327.7	151	0
HCM LOS	F	F	F	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	57%	0%	13%	0%
Vol Thru, %	0%	48%	87%	100%
Vol Right, %	43%	52%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	595	761	778	0
LT Vol	340	0	103	0
Through Vol	0	363	675	0
RT Vol	255	398	0	0
Lane Flow Rate	647	827	846	0
Geometry Grp	1	1	1	1
Degree of Util (X)	1.237	1.543	1.658	0
Departure Headway (Hd)	8.288	8.302	8.503	14.225
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	446	447	440	0
Service Time	6.288	6.302	6.503	12.225
HCM Lane V/C Ratio	1.451	1.85	1.923	0
HCM Control Delay	151	277.3	327.7	17.2
HCM Lane LOS	F	F	F	N
HCM 95th-tile Q	22	36.3	41.2	0

Intersection												
Int Delay, s/veh	1113.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Vol, veh/h	0	200	40	426	184	0	0	0	0	499	1	153
Future Vol, veh/h	0	200	40	426	184	0	0	0	0	499	1	153
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	14	0	0	0	0	0	20	4	2
Mvmt Flow	0	217	43	463	200	0	0	0	0	542	1	166

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	260	0	0		1365	1386	200
Stage 1	-	-	-	-	-	-		1126	1126	-
Stage 2	-	-	-	-	-	-		239	260	-
Critical Hdwy	-	-	-	4.24	-	-		6.6	6.54	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.6	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.6	5.54	-
Follow-up Hdwy	-	-	-	2.326	-	-		3.68	4.036	3.318
Pot Cap-1 Maneuver	0	-	-	1238	-	0		~ 149	142	841
Stage 1	0	-	-	-	-	0		~ 286	278	-
Stage 2	0	-	-	-	-	0		760	689	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	1238	-	-		~ 86	0	841
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 86	0	-
Stage 1	-	-	-	-	-	-		~ 286	0	-
Stage 2	-	-	-	-	-	-		~ 440	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.7	\$ 2556.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1238	-	109
HCM Lane V/C Ratio	-	-	0.374	-	6.512
HCM Control Delay (s)	-	-	9.6	\$ 2556.7	
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	1.8	-	78.5

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	105.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	157	542	0	0	591	350	19	3	608	0	0	0
Future Vol, veh/h	157	542	0	0	591	350	19	3	608	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	8	0	0	10	20	0	20	20	0	0	0
Mvmt Flow	171	589	0	0	642	380	21	3	661	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	1022	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.2	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.29	-	-
Pot Cap-1 Maneuver	649	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	649	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	2.8	0	\$ 376.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	389	649	-	-	-
HCM Lane V/C Ratio	1.76	0.263	-	-	-
HCM Control Delay (s)	\$ 376.6	12.5	0	-	-
HCM Lane LOS	F	B	A	-	-
HCM 95th %tile Q(veh)	43	1.1	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis 2040 Cumulative Plus Project (With Zach IC)
 3: Sperry Ave & Rogers Rd Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	315	568	267	113	474	227	278	8	117	139	0	189	
Future Volume (vph)	315	568	267	113	474	227	278	8	117	139	0	189	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.88	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	
Satd. Flow (prot)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	
Satd. Flow (perm)	1656	3282	1583	1770	1610	1583	1770	1863	1583		1787	2493	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	342	617	290	123	515	247	302	9	127	151	0	205	
RTOR Reduction (vph)	0	0	166	0	0	165	0	0	103	0	0	145	
Lane Group Flow (vph)	342	617	124	123	515	82	302	9	24	0	151	60	
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov	
Protected Phases	5	2		1	6		8	8		7	7	5	
Permitted Phases			2			6			8			7	
Actuated Green, G (s)	23.6	48.9	48.9	12.6	35.9	35.9	21.3	21.3	21.3		10.0	33.6	
Effective Green, g (s)	23.6	48.9	48.9	12.6	35.9	35.9	21.3	21.3	21.3		10.0	33.6	
Actuated g/C Ratio	0.21	0.43	0.43	0.11	0.31	0.31	0.19	0.19	0.19		0.09	0.29	
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5		6.0	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	341	1404	677	195	505	497	329	347	294		156	732	
v/s Ratio Prot	c0.21	0.19		0.07	c0.32		c0.17	0.00			c0.08	0.02	
v/s Ratio Perm			0.08			0.05			0.01			0.01	
v/c Ratio	1.00	0.44	0.18	0.63	1.02	0.17	0.92	0.03	0.08		0.97	0.08	
Uniform Delay, d1	45.3	23.0	20.3	48.6	39.2	28.4	45.6	38.0	38.4		52.0	29.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	49.5	0.5	0.3	6.5	45.1	0.2	29.2	0.0	0.1		61.8	0.0	
Delay (s)	94.8	23.5	20.6	55.1	84.3	28.5	74.9	38.0	38.5		113.7	29.2	
Level of Service	F	C	C	E	F	C	E	D	D		F	C	
Approach Delay (s)		42.4			64.7			63.6			65.1		
Approach LOS		D			E			E			E		
Intersection Summary													
HCM 2000 Control Delay			55.0		HCM 2000 Level of Service						E		
HCM 2000 Volume to Capacity ratio			0.98										
Actuated Cycle Length (s)			114.3		Sum of lost time (s)					23.5			
Intersection Capacity Utilization			79.1%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↘		↖↗	↕↕	↖	↖	↕	↖	↖	↘	↘
Traffic Volume (veh/h)	123	515	101	8	582	70	22	51	44	122	83	265
Future Volume (veh/h)	123	515	101	8	582	70	22	51	44	122	83	265
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1583	1767	1900	1900	1827	1583	1900	1900	1900	1583	1649	1900
Adj Flow Rate, veh/h	134	560	110	9	633	76	24	55	48	133	90	288
Adj No. of Lanes	2	1	0	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	238	657	129	48	1355	525	178	593	504	425	108	345
Arrive On Green	0.08	0.46	0.46	0.01	0.39	0.39	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	2925	1435	282	3510	3471	1346	1021	1900	1615	1093	346	1107
Grp Volume(v), veh/h	134	0	670	9	633	76	24	55	48	133	0	378
Grp Sat Flow(s),veh/h/ln	1463	0	1717	1755	1736	1346	1021	1900	1615	1093	0	1453
Q Serve(g_s), s	3.0	0.0	23.6	0.2	9.2	2.5	1.5	1.4	1.4	6.7	0.0	16.4
Cycle Q Clear(g_c), s	3.0	0.0	23.6	0.2	9.2	2.5	17.9	1.4	1.4	8.1	0.0	16.4
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	238	0	786	48	1355	525	178	593	504	425	0	453
V/C Ratio(X)	0.56	0.00	0.85	0.19	0.47	0.14	0.14	0.09	0.10	0.31	0.00	0.83
Avail Cap(c_a), veh/h	401	0	943	310	1738	674	415	1035	880	679	0	792
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	16.4	33.1	15.4	13.4	30.1	16.6	16.6	19.4	0.0	21.7
Incr Delay (d2), s/veh	2.1	0.0	8.1	1.8	0.5	0.3	0.3	0.1	0.1	0.4	0.0	4.1
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	1.3	0.0	12.7	0.1	4.5	0.9	0.4	0.7	0.6	2.0	0.0	7.0
LnGrp Delay(d),s/veh	32.1	0.0	24.5	34.9	16.0	13.6	30.4	16.6	16.7	19.8	0.0	25.8
LnGrp LOS	C		C	C	B	B	C	B	B	B		C
Approach Vol, veh/h		804			718			127			511	
Approach Delay, s/veh		25.7			16.0			19.2			24.3	
Approach LOS		C			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	36.8		25.7	10.0	32.2		25.7				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	9.3	34.0		37.0				
Max Q Clear Time (g_c+1/2), s	12.2	25.6		18.4	5.0	11.2		19.9				
Green Ext Time (p_c), s	0.0	5.5		2.8	0.1	7.9		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			21.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗		↖	↗	↖	↔	↗		↖	↗	
Traffic Volume (veh/h)	144	502	139	11	461	186	96	278	12	235	430	119
Future Volume (veh/h)	144	502	139	11	461	186	96	278	12	235	430	119
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		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	1856	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	157	546	151	12	501	202	104	302	13	255	467	129
Adj No. of Lanes	2	1	0	1	1	1	1	1	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	219	574	159	28	664	587	126	553	24	318	470	130
Arrive On Green	0.06	0.41	0.41	0.02	0.36	0.36	0.07	0.31	0.31	0.09	0.33	0.33
Sat Flow, veh/h	3476	1401	387	1660	1827	1615	1810	1807	78	3476	1434	396
Grp Volume(v), veh/h	157	0	697	12	501	202	104	0	315	255	0	596
Grp Sat Flow(s),veh/h/ln	1738	0	1788	1660	1827	1615	1810	0	1885	1738	0	1830
Q Serve(g_s), s	4.7	0.0	39.6	0.8	25.2	9.5	6.0	0.0	14.6	7.5	0.0	34.1
Cycle Q Clear(g_c), s	4.7	0.0	39.6	0.8	25.2	9.5	6.0	0.0	14.6	7.5	0.0	34.1
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.04	1.00		0.22
Lane Grp Cap(c), veh/h	219	0	732	28	664	587	126	0	576	318	0	600
V/C Ratio(X)	0.72	0.00	0.95	0.43	0.75	0.34	0.83	0.00	0.55	0.80	0.00	0.99
Avail Cap(c_a), veh/h	245	0	746	95	738	653	126	0	576	361	0	600
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	30.0	51.1	29.3	24.3	48.2	0.0	30.4	46.7	0.0	35.2
Incr Delay (d2), s/veh	6.7	0.0	22.3	20.6	5.2	0.7	32.6	0.0	1.1	9.4	0.0	35.0
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	2.5	0.0	23.9	0.5	13.6	4.4	4.1	0.0	7.8	4.0	0.0	23.1
LnGrp Delay(d),s/veh	55.0	0.0	52.3	71.7	34.5	25.0	80.8	0.0	31.4	56.2	0.0	70.2
LnGrp LOS	D		D	E	C	C	F		C	E		E
Approach Vol, veh/h		854			715			419			851	
Approach Delay, s/veh		52.8			32.5			43.7			66.0	
Approach LOS		D			C			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	6.0	48.5	11.5	39.0	10.8	43.6	13.8	36.7				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	43.8	* 7.3	34.4	* 7.4	42.4	* 11	30.8				
Max Q Clear Time (g_c+1), s	12	41.6	8.0	36.1	6.7	27.2	9.5	16.6				
Green Ext Time (p_c), s	0.0	1.4	0.0	0.0	0.0	6.0	0.1	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			50.3									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	556	34	84	686	91	10	32	22	38	28	35
Future Volume (veh/h)	88	556	34	84	686	91	10	32	22	38	28	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	96	604	37	91	746	99	11	35	24	41	30	38
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	170	1227	75	165	1129	150	254	110	75	263	80	101
Arrive On Green	0.09	0.36	0.36	0.09	0.36	0.36	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1810	3361	206	1810	3114	413	1348	1050	720	1359	761	964
Grp Volume(v), veh/h	96	315	326	91	420	425	11	0	59	41	0	68
Grp Sat Flow(s),veh/h/ln	1810	1755	1811	1810	1754	1773	1348	0	1769	1359	0	1725
Q Serve(g_s), s	2.3	6.2	6.2	2.1	8.9	8.9	0.3	0.0	1.4	1.3	0.0	1.6
Cycle Q Clear(g_c), s	2.3	6.2	6.2	2.1	8.9	8.9	2.0	0.0	1.4	2.7	0.0	1.6
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	170	641	661	165	636	643	254	0	185	263	0	181
V/C Ratio(X)	0.57	0.49	0.49	0.55	0.66	0.66	0.04	0.00	0.32	0.16	0.00	0.38
Avail Cap(c_a), veh/h	265	854	881	281	869	878	780	0	876	793	0	854
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	10.9	10.9	19.3	11.9	11.9	19.4	0.0	18.4	19.6	0.0	18.5
Incr Delay (d2), s/veh	2.9	0.8	0.8	2.9	1.7	1.7	0.1	0.0	1.0	0.3	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.1	3.2	1.2	4.6	4.7	0.1	0.0	0.7	0.5	0.0	0.8
LnGrp Delay(d),s/veh	22.2	11.7	11.7	22.2	13.6	13.5	19.5	0.0	19.4	19.9	0.0	19.8
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		737			936			70			109	
Approach Delay, s/veh		13.1			14.4			19.4			19.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	22.7		11.2	10.7	22.6		11.2				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	21.6	21.6		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+I), s	8.2	8.2		4.7	4.3	10.9		4.0				
Green Ext Time (p_c), s	0.0	4.2		0.4	0.0	5.1		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				14.4								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	355	46	275	435	135	32	118	90	166	400	62
Future Volume (veh/h)	134	355	46	275	435	135	32	118	90	166	400	62
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1841	1900	1881	1845	1900	1845	1873	1900	1881	1900	1900
Adj Flow Rate, veh/h	146	386	50	299	473	147	35	128	98	180	435	67
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
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	3	3	1	3	0	3	1	1	1	0	0
Cap, veh/h	158	582	75	339	963	441	72	238	182	168	563	465
Arrive On Green	0.09	0.19	0.19	0.19	0.27	0.27	0.04	0.24	0.24	0.09	0.30	0.30
Sat Flow, veh/h	1774	3111	400	1792	3505	1606	1757	979	749	1792	1900	1570
Grp Volume(v), veh/h	146	216	220	299	473	147	35	0	226	180	435	67
Grp Sat Flow(s),veh/h/ln	1774	1749	1762	1792	1752	1606	1757	0	1728	1792	1900	1570
Q Serve(g_s), s	6.4	9.0	9.2	12.8	8.9	5.8	1.5	0.0	9.0	7.4	16.5	2.5
Cycle Q Clear(g_c), s	6.4	9.0	9.2	12.8	8.9	5.8	1.5	0.0	9.0	7.4	16.5	2.5
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	158	327	330	339	963	441	72	0	420	168	563	465
V/C Ratio(X)	0.93	0.66	0.67	0.88	0.49	0.33	0.49	0.00	0.54	1.07	0.77	0.14
Avail Cap(c_a), veh/h	158	555	559	364	1467	672	136	0	745	168	851	703
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	29.7	29.8	31.1	24.0	22.8	37.0	0.0	26.0	35.7	25.3	20.4
Incr Delay (d2), s/veh	50.5	4.8	4.9	20.7	0.8	0.9	5.1	0.0	2.3	89.3	4.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	4.7	4.9	8.3	4.4	2.7	0.8	0.0	4.5	7.8	9.3	1.1
LnGrp Delay(d),s/veh	86.2	34.5	34.7	51.8	24.8	23.8	42.1	0.0	28.2	125.0	30.2	20.7
LnGrp LOS	F	C	C	D	C	C	D		C	F	C	C
Approach Vol, veh/h		582			919			261			682	
Approach Delay, s/veh		47.5			33.4			30.1			54.3	
Approach LOS		D			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.9	20.8	7.8	29.4	14.0	27.7	12.0	25.2				
Change Period (Y+Rc), s	6.0	6.0	4.6	6.0	7.0	6.0	4.6	6.0				
Max Green Setting (Gmax), s	10.0	25.0	6.1	35.3	7.0	33.0	7.4	34.0				
Max Q Clear Time (g_c+1/4), s	11.8	11.2	3.5	18.5	8.4	10.9	9.4	11.0				
Green Ext Time (p_c), s	0.1	3.5	0.0	4.8	0.0	6.3	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay				42.3								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	359	81	31	483	20	39	38	6	3	59	148
Future Volume (veh/h)	201	359	81	31	483	20	39	38	6	3	59	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	218	390	88	34	525	22	42	41	7	3	64	161
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	517	1557	348	638	1017	898	247	201	26	96	95	233
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	873	2796	625	930	1827	1612	561	1022	134	8	487	1189
Grp Volume(v), veh/h	218	239	239	34	525	22	90	0	0	228	0	0
Grp Sat Flow(s),veh/h/ln	873	1721	1700	930	1827	1612	1717	0	0	1683	0	0
Q Serve(g_s), s	8.0	2.7	2.8	0.8	6.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.8	2.7	2.8	3.5	6.9	0.2	1.6	0.0	0.0	4.8	0.0	0.0
Prop In Lane	1.00		0.37	1.00		1.00	0.47		0.08	0.01		0.71
Lane Grp Cap(c), veh/h	517	958	947	638	1017	898	474	0	0	425	0	0
V/C Ratio(X)	0.42	0.25	0.25	0.05	0.52	0.02	0.19	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	630	1181	1167	758	1254	1106	1101	0	0	1147	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	4.4	4.4	5.3	5.3	3.8	13.1	0.0	0.0	14.4	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.3	0.3	0.1	0.9	0.0	0.2	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.3	1.3	0.2	3.6	0.1	0.8	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	11.1	4.7	4.7	5.4	6.2	3.9	13.2	0.0	0.0	15.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		696			581			90			228	
Approach Delay, s/veh		6.7			6.0			13.2			15.4	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.0		12.4		26.0		12.4				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.4		24.1		26.4		24.1				
Max Q Clear Time (g_c+I1), s		16.8		3.6		8.9		6.8				
Green Ext Time (p_c), s		4.6		0.4		6.0		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				8.1								
HCM 2010 LOS				A								

Intersection												
Int Delay, s/veh	502.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	216	148	173	21	76	9	158	383	69	20	251	184
Future Vol, veh/h	216	148	173	21	76	9	158	383	69	20	251	184
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	25	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	4	6	0	2	0	6	3	7	16	5	4
Mvmt Flow	235	161	188	23	83	10	172	416	75	22	273	200

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1161	1152	273	1290	1115	454	273	0	0	491	0	0
Stage 1	317	317	-	798	798	-	-	-	-	-	-	-
Stage 2	844	835	-	492	317	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.54	6.26	7.1	6.52	6.2	4.16	-	-	4.26	-	-
Critical Hdwy Stg 1	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.54	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.036	3.354	3.5	4.018	3.3	2.254	-	-	2.344	-	-
Pot Cap-1 Maneuver	~ 169	196	756	142	208	610	1267	-	-	1004	-	0
Stage 1	686	651	-	382	398	-	-	-	-	-	-	0
Stage 2	352	380	-	562	654	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	~ 86	~ 155	756	-	164	610	1267	-	-	1004	-	-
Mov Cap-2 Maneuver	~ 86	~ 155	-	-	164	-	-	-	-	-	-	-
Stage 1	556	634	-	310	323	-	-	-	-	-	-	-
Stage 2	~ 209	308	-	307	637	-	-	-	-	-	-	-






















Approach	EB		WB		NB		SB	
HCM Control Delay, \$	1423.6				2.1		0.6	
HCM LOS	F							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	1267	-	-	145	-	610	1004	-
HCM Lane V/C Ratio	0.136	-	-	4.025	-	0.016	0.022	-
HCM Control Delay (s)	8.3	0		\$ 1423.6	-	11	8.7	0
HCM Lane LOS	A	A		F	-	B	A	A
HCM 95th %tile Q(veh)	0.5	-	-	58.6	-	0	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
10: SR-33 & M St/Walnut Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	87	57	74	83	12	61	411	135	95	484	22
Future Volume (veh/h)	12	87	57	74	83	12	61	411	135	95	484	22
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1583	1583	1900	1583	1583	1900
Adj Flow Rate, veh/h	13	95	62	80	90	13	66	447	147	103	526	24
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	219	130	85	221	199	29	100	423	139	125	582	27
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.07	0.37	0.37	0.08	0.39	0.39
Sat Flow, veh/h	1774	1054	688	1774	1592	230	1508	1142	375	1508	1503	69
Grp Volume(v), veh/h	13	0	157	80	0	103	66	0	594	103	0	550
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1774	0	1822	1508	0	1517	1508	0	1571
Q Serve(g_s), s	0.4	0.0	5.3	2.5	0.0	3.2	2.6	0.0	22.7	4.1	0.0	20.2
Cycle Q Clear(g_c), s	0.4	0.0	5.3	2.5	0.0	3.2	2.6	0.0	22.7	4.1	0.0	20.2
Prop In Lane	1.00		0.39	1.00		0.13	1.00		0.25	1.00		0.04
Lane Grp Cap(c), veh/h	219	0	215	221	0	227	100	0	562	125	0	608
V/C Ratio(X)	0.06	0.00	0.73	0.36	0.00	0.45	0.66	0.00	1.06	0.83	0.00	0.90
Avail Cap(c_a), veh/h	232	0	227	860	0	883	148	0	562	155	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	25.9	24.6	0.0	24.9	27.9	0.0	19.3	27.7	0.0	17.7
Incr Delay (d2), s/veh	0.0	0.0	9.1	0.4	0.0	0.5	2.8	0.0	53.8	20.8	0.0	16.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.1	1.3	0.0	1.6	1.2	0.0	17.8	2.4	0.0	11.5
LnGrp Delay(d),s/veh	23.8	0.0	35.0	24.9	0.0	25.4	30.7	0.0	73.1	48.5	0.0	34.3
LnGrp LOS	C		C	C		C	C		F	D		C
Approach Vol, veh/h		170			183			660			653	
Approach Delay, s/veh		34.1			25.2			68.8			36.6	
Approach LOS		C			C			E			D	
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	9.1	27.6		12.8	8.0	28.6				
Change Period (Y+Rc), s		* 4.2	4.0	4.9		5.2	4.0	4.9				
Max Green Setting (Gmax), s		* 8	6.3	22.7		29.7	6.0	23.0				
Max Q Clear Time (g_c+I1), s		7.3	6.1	24.7		5.2	4.6	22.2				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.2	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			47.9									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Cumulative Plus Project (With Zach IC)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	290	10	238	378	82	27	279	372	161	324	4
Future Volume (veh/h)	22	290	10	238	378	82	27	279	372	161	324	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	0.99		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1869	1900	1810	1900	1900	1900	1845	1900	1881	1810	1900
Adj Flow Rate, veh/h	24	315	11	259	411	89	29	303	404	175	352	4
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	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, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	289	420	15	409	651	541	444	506	449	294	1211	14
Arrive On Green	0.03	0.23	0.23	0.14	0.34	0.34	0.03	0.29	0.29	0.09	0.35	0.35
Sat Flow, veh/h	1723	1794	63	1723	1900	1577	1810	1752	1554	1792	3483	40
Grp Volume(v), veh/h	24	0	326	259	411	89	29	303	404	175	174	182
Grp Sat Flow(s),veh/h/ln	1723	0	1856	1723	1900	1577	1810	1752	1554	1792	1720	1802
Q Serve(g_s), s	0.7	0.0	11.3	7.4	12.6	2.7	0.8	10.3	17.3	4.5	5.1	5.1
Cycle Q Clear(g_c), s	0.7	0.0	11.3	7.4	12.6	2.7	0.8	10.3	17.3	4.5	5.1	5.1
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	289	0	435	409	651	541	444	506	449	294	598	627
V/C Ratio(X)	0.08	0.00	0.75	0.63	0.63	0.16	0.07	0.60	0.90	0.60	0.29	0.29
Avail Cap(c_a), veh/h	379	0	778	635	1152	956	596	583	517	308	598	627
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	24.7	16.5	19.1	15.9	16.3	21.2	23.7	16.8	16.4	16.4
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.6	0.4	0.1	0.0	0.6	15.9	1.8	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	0.3	0.0	5.9	3.5	6.7	1.2	0.4	5.1	9.4	2.3	2.4	2.5
LnGrp Delay(d),s/veh	19.5	0.0	25.7	17.1	19.5	16.0	16.4	21.8	39.7	18.6	16.5	16.5
LnGrp LOS	B		C	B	B	B	B	C	D	B	B	B
Approach Vol, veh/h		350			759			736			531	
Approach Delay, s/veh		25.2			18.3			31.4			17.2	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	28.4	10.2	25.0	13.4	20.9	6.1	29.0				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	42.1	6.8	23.1	18.5	29.1	8.0	21.9				
Max Q Clear Time (g_c+I), s	12.7	14.6	6.5	19.3	9.4	13.3	2.8	7.1				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.4	0.0	0.4	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			23.1									
HCM 2010 LOS			C									

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕			↕			↕	↕
Traffic Vol, veh/h	48	159	159	28	120	138	121	561	13	119	846	31
Future Vol, veh/h	48	159	159	28	120	138	121	561	13	119	846	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	20	20	20	20	20	20
Mvmt Flow	52	173	173	30	130	150	132	610	14	129	920	34

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2199	2066	920	2249	2093	617	954	0	0	624	0	0
Stage 1	1178	1178	-	881	881	-	-	-	-	-	-	-
Stage 2	1021	888	-	1368	1212	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.38	-	-	2.38	-	-
Pot Cap-1 Maneuver	~ 32	~ 54	328	~ 30	~ 52	490	653	-	-	876	-	-
Stage 1	233	265	-	341	365	-	-	-	-	-	-	-
Stage 2	285	362	-	181	255	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 25	328	-	~ 25	490	653	-	-	876	-	-
Mov Cap-2 Maneuver	-	~ 25	-	-	~ 25	-	-	-	-	-	-	-
Stage 1	161	181	-	235	252	-	-	-	-	-	-	-
Stage 2	66	250	-	~ 3	174	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB		
HCM Control Delay, s						2.1			1.2
HCM LOS									

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	653	-	-	-	-	328	-	876	-
HCM Lane V/C Ratio	0.201	-	-	-	-	0.527	-	0.148	-
HCM Control Delay (s)	11.9	0	-	-	-	27.6	-	9.8	0
HCM Lane LOS	B	A	-	-	-	D	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	-	-	2.9	-	0.5	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	1	80	50	44	462	1	67	2	37	0	3	1
Future Vol, veh/h	1	80	50	44	462	1	67	2	37	0	3	1
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	125	-	-	100	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	20	4	8	0	15	0	3	20	3	0	20	20
Mvmt Flow	1	87	54	48	502	1	73	2	40	0	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	503	0	0	141	0	0	717	715	114	736	742	503
Stage 1	-	-	-	-	-	-	116	116	-	599	599	-
Stage 2	-	-	-	-	-	-	601	599	-	137	143	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.13	6.7	6.23	7.1	6.7	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.7	-	6.1	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.7	-	6.1	5.7	-
Follow-up Hdwy	2.38	-	-	2.2	-	-	3.527	4.18	3.327	3.5	4.18	3.48
Pot Cap-1 Maneuver	975	-	-	1455	-	-	343	335	936	337	323	534
Stage 1	-	-	-	-	-	-	886	766	-	492	463	-
Stage 2	-	-	-	-	-	-	485	463	-	871	745	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	975	-	-	1455	-	-	331	324	936	312	312	534
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	324	-	312	312	-
Stage 1	-	-	-	-	-	-	885	765	-	492	448	-
Stage 2	-	-	-	-	-	-	465	448	-	830	744	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.7			15.4			15.5		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	331	853	975	-	-	1455	-	-	348
HCM Lane V/C Ratio	0.22	0.05	0.001	-	-	0.033	-	-	0.012
HCM Control Delay (s)	18.9	9.4	8.7	-	-	7.6	-	-	15.5
HCM Lane LOS	C	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0.2	0	-	-	0.1	-	-	0

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↑	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	36	52	4	29	69	68	1	49	33	55	66	29
Future Vol, veh/h	36	52	4	29	69	68	1	49	33	55	66	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	200	-	-	170	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	0	4	0	20	20	4	13	0
Mvmt Flow	39	57	4	32	75	74	1	53	36	60	72	32

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	356	299	88	294	279	53	104	0	0	89	0	0
Stage 1	208	208	-	55	55	-	-	-	-	-	-	-
Stage 2	148	91	-	239	224	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.3	6.5	6.24	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.68	4	3.336	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	599	613	970	624	632	1009	1500	-	-	1494	-	-
Stage 1	794	730	-	914	853	-	-	-	-	-	-	-
Stage 2	855	820	-	726	722	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	487	588	970	558	606	1009	1500	-	-	1494	-	-
Mov Cap-2 Maneuver	487	588	-	558	606	-	-	-	-	-	-	-
Stage 1	793	701	-	913	852	-	-	-	-	-	-	-
Stage 2	722	819	-	638	693	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	10.6	0.1	2.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1500	-	-	553	558	606	1009	1494	-	-
HCM Lane V/C Ratio	0.001	-	-	0.181	0.056	0.124	0.073	0.04	-	-
HCM Control Delay (s)	7.4	0	-	12.9	11.8	11.8	8.9	7.5	-	-
HCM Lane LOS	A	A	-	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.2	0.4	0.2	0.1	-	-

Intersection												
Int Delay, s/veh	90.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	486	47	23	205	23	13	118	20	30	228	17
Future Vol, veh/h	26	486	47	23	205	23	13	118	20	30	228	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	8	8	8	18	18	18	16	16	16
Mvmt Flow	28	528	51	25	223	25	14	128	22	33	248	18

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	614	501	257	780	499	139	266	0	0	150	0	0
Stage 1	323	323	-	167	167	-	-	-	-	-	-	-
Stage 2	291	178	-	613	332	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.18	6.58	6.28	4.28	-	-	4.26	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.18	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.572	4.072	3.372	2.362	-	-	2.344	-	-
Pot Cap-1 Maneuver	404	~ 472	782	306	465	893	1211	-	-	1350	-	-
Stage 1	689	650	-	821	749	-	-	-	-	-	-	-
Stage 2	717	752	-	470	634	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	231	~ 452	782	-	445	893	1211	-	-	1350	-	-
Mov Cap-2 Maneuver	231	~ 452	-	-	445	-	-	-	-	-	-	-
Stage 1	680	631	-	810	739	-	-	-	-	-	-	-
Stage 2	480	742	-	69	616	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	199.6		0.7	0.8
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1211	-	-	448	-	1350	-
HCM Lane V/C Ratio	0.012	-	-	1.356	-	0.024	-
HCM Control Delay (s)	8	0	-	199.6	-	7.7	0
HCM Lane LOS	A	A	-	F	-	A	A
HCM 95th %tile Q(veh)	0	-	-	28.1	-	0.1	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	189.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	104	77	17	198	135	143	227	365	17	366	49
Future Vol, veh/h	2	104	77	17	198	135	143	227	365	17	366	49
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
Heavy Vehicles, %	2	2	2	8	8	8	9	9	9	14	14	14
Mvmt Flow	2	113	84	18	215	147	155	247	397	18	398	53
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	24.6	51	354.7	92.2
HCM LOS	C	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	1%	5%	4%
Vol Thru, %	31%	57%	57%	85%
Vol Right, %	50%	42%	39%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	735	183	350	432
LT Vol	143	2	17	17
Through Vol	227	104	198	366
RT Vol	365	77	135	49
Lane Flow Rate	799	199	380	470
Geometry Grp	1	1	1	1
Degree of Util (X)	1.723	0.496	0.862	1.05
Departure Headway (Hd)	8.083	11.109	9.867	9.614
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	455	326	369	380
Service Time	6.083	9.109	7.867	7.614
HCM Lane V/C Ratio	1.756	0.61	1.03	1.237
HCM Control Delay	354.7	24.6	51	92.2
HCM Lane LOS	F	C	F	F
HCM 95th-tile Q	46.4	2.6	8.2	13.4

Intersection						
Int Delay, s/veh	8.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	4	174	562	255	475	54
Future Vol, veh/h	4	174	562	255	475	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	11	14	14
Mvmt Flow	4	189	611	277	516	59

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2045	546	575	0	-	0
Stage 1	546	-	-	-	-	-
Stage 2	1499	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	62	538	1003	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	204	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	538	1003	-	-	-
Mov Cap-2 Maneuver	17	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	204	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.2	9.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1003	-	319	-	-
HCM Lane V/C Ratio	0.609	-	0.607	-	-
HCM Control Delay (s)	14	0	32.2	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	4.3	-	3.7	-	-

Intersection						
Int Delay, s/veh	94.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	346	503	13	315	217
Future Vol, veh/h	65	346	503	13	315	217
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	11	11	14	14
Mvmt Flow	71	376	547	14	342	236

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1474	554	0	0	561
Stage 1	554	-	-	-	-
Stage 2	920	-	-	-	-
Critical Hdwy	6.49	6.29	-	-	4.24
Critical Hdwy Stg 1	5.49	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-
Follow-up Hdwy	3.581	3.381	-	-	2.326
Pot Cap-1 Maneuver	134	519	-	-	953
Stage 1	562	-	-	-	-
Stage 2	377	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	79	519	-	-	953
Mov Cap-2 Maneuver	79	-	-	-	-
Stage 1	562	-	-	-	-
Stage 2	221	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	327.2	0	6.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	276	953
HCM Lane V/C Ratio	-	-	1.619	0.359
HCM Control Delay (s)	-	-	327.2	10.9
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	27.4	1.6

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	16.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	171	16	0	582	525	59
Future Vol, veh/h	171	16	0	582	525	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	1	11	14	14
Mvmt Flow	186	17	0	633	571	64

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1236	603	635	0	0
Stage 1	603	-	-	-	-
Stage 2	633	-	-	-	-
Critical Hdwy	6.49	6.29	4.11	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.209	-	-
Pot Cap-1 Maneuver	188	486	953	-	-
Stage 1	533	-	-	-	-
Stage 2	516	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	188	486	953	-	-
Mov Cap-2 Maneuver	188	-	-	-	-
Stage 1	533	-	-	-	-
Stage 2	516	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	121	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	953	-	198	-	-
HCM Lane V/C Ratio	-	-	1.027	-	-
HCM Control Delay (s)	0	-	121	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	9.1	-	-

Intersection						
Int Delay, s/veh	21					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	522	53	5	284	244	21
Future Vol, veh/h	522	53	5	284	244	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	14	14	18	18
Mvmt Flow	567	58	5	309	265	23

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	625	0	915 596
Stage 1	-	-	-	-	596 -
Stage 2	-	-	-	-	319 -
Critical Hdwy	-	-	4.24	-	6.58 6.38
Critical Hdwy Stg 1	-	-	-	-	5.58 -
Critical Hdwy Stg 2	-	-	-	-	5.58 -
Follow-up Hdwy	-	-	2.326	-	3.662 3.462
Pot Cap-1 Maneuver	-	-	901	-	284 475
Stage 1	-	-	-	-	520 -
Stage 2	-	-	-	-	702 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	901	-	282 475
Mov Cap-2 Maneuver	-	-	-	-	282 -
Stage 1	-	-	-	-	520 -
Stage 2	-	-	-	-	697 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	89.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	291	-	-	901	-
HCM Lane V/C Ratio	0.99	-	-	0.006	-
HCM Control Delay (s)	89.4	-	-	9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	10.2	-	-	0	-

Intersection												
Int Delay, s/veh	203.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	76	481	66	0	267	22	2	40	4	44	349	19
Future Vol, veh/h	76	481	66	0	267	22	2	40	4	44	349	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	83	523	72	0	290	24	2	43	4	48	379	21

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	692	537	390	832	545	45	400	0	0	47	0	0
Stage 1	486	486	-	49	49	-	-	-	-	-	-	-
Stage 2	206	51	-	783	496	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	350	~ 442	645	281	436	1005	1159	-	-	1560	-	-
Stage 1	552	541	-	947	840	-	-	-	-	-	-	-
Stage 2	782	841	-	377	534	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	146	~ 423	645	-	418	1005	1159	-	-	1560	-	-
Mov Cap-2 Maneuver	146	~ 423	-	-	418	-	-	-	-	-	-	-
Stage 1	551	~ 519	-	945	838	-	-	-	-	-	-	-
Stage 2	498	839	-	-	513	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	446.3		0.4	0.8
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1159	-	-	354	-	1560	-	-
HCM Lane V/C Ratio	0.002	-	-	1.913	-	0.031	-	-
HCM Control Delay (s)	8.1	0	-	\$ 446.3	-	7.4	0	-
HCM Lane LOS	A	A	-	F	-	A	A	-
HCM 95th %tile Q(veh)	0	-	-	45.9	-	0.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	22.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	42	515	2	4	1	74	158	74	10	173	3
Future Vol, veh/h	42	42	515	2	4	1	74	158	74	10	173	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	9	9	9	2	2	2	2	2	2
Mvmt Flow	46	46	560	2	4	1	80	172	80	11	188	3





















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	587	624	190	887	585	212	191	0	0	252	0	0
Stage 1	212	212	-	372	372	-	-	-	-	-	-	-
Stage 2	375	412	-	515	213	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	412	394	837	257	414	811	1383	-	-	1313	-	-
Stage 1	777	716	-	634	607	-	-	-	-	-	-	-
Stage 2	634	584	-	530	713	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	384	364	837	72	383	811	1383	-	-	1313	-	-
Mov Cap-2 Maneuver	384	364	-	72	383	-	-	-	-	-	-	-
Stage 1	724	710	-	591	566	-	-	-	-	-	-	-
Stage 2	586	544	-	163	707	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	40.1		26.3		1.9		0.4	
HCM LOS	E		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1383	-	-	713	177	1313	-	-
HCM Lane V/C Ratio	0.058	-	-	0.913	0.043	0.008	-	-
HCM Control Delay (s)	7.8	0	-	40.1	26.3	7.8	0	-
HCM Lane LOS	A	A	-	E	D	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	12.2	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
24: Sycamore Ave & Las Palmas Ave

2040 Cumulative Plus Project (With Zach IC)
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	435	8	29	441	35	6	30	58	161	78	36
Future Volume (veh/h)	8	435	8	29	441	35	6	30	58	161	78	36
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	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	9	473	9	32	479	38	7	33	63	175	85	39
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	19	587	11	61	614	49	16	66	127	178	250	115
Arrive On Green	0.01	0.35	0.35	0.04	0.38	0.38	0.01	0.12	0.12	0.10	0.21	0.21
Sat Flow, veh/h	1616	1659	32	1691	1624	129	1774	574	1096	1774	1210	555
Grp Volume(v), veh/h	9	0	482	32	0	517	7	0	96	175	0	124
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1669	1774	0	1765
Q Serve(g_s), s	0.3	0.0	12.8	0.9	0.0	12.9	0.2	0.0	2.7	4.9	0.0	3.0
Cycle Q Clear(g_c), s	0.3	0.0	12.8	0.9	0.0	12.9	0.2	0.0	2.7	4.9	0.0	3.0
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.31
Lane Grp Cap(c), veh/h	19	0	598	61	0	662	16	0	193	178	0	365
V/C Ratio(X)	0.47	0.00	0.81	0.53	0.00	0.78	0.43	0.00	0.50	0.98	0.00	0.34
Avail Cap(c_a), veh/h	163	0	1266	170	0	1312	178	0	779	178	0	824
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	14.5	23.5	0.0	13.6	24.5	0.0	20.6	22.3	0.0	16.8
Incr Delay (d2), s/veh	17.2	0.0	2.6	6.9	0.0	2.0	16.5	0.0	2.0	61.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	6.3	0.5	0.0	6.6	0.2	0.0	1.3	5.4	0.0	1.5
LnGrp Delay(d),s/veh	41.6	0.0	17.1	30.4	0.0	15.7	41.0	0.0	22.6	83.7	0.0	17.4
LnGrp LOS	D		B	C		B	D		C	F		B
Approach Vol, veh/h		491			549			103			299	
Approach Delay, s/veh		17.6			16.6			23.9			56.2	
Approach LOS		B			B			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	9.0	11.5	5.8	23.4	4.5	16.1	4.6	24.6				
Change Period (Y+Rc), s	4.0	5.8	4.0	5.8	4.0	5.8	4.0	5.8				
Max Green Setting (Gmax), s	5.0	23.2	5.0	37.2	5.0	23.2	5.0	37.2				
Max Q Clear Time (g_c+I1), s	6.9	4.7	2.9	14.8	2.2	5.0	2.3	14.9				
Green Ext Time (p_c), s	0.0	0.4	0.0	2.8	0.0	0.5	0.0	3.0				
Intersection Summary												
HCM 2010 Ctrl Delay			25.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 25: Elm Ave & Las Palmas Ave

2040 Cumulative Plus Project (With Zach IC)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	472	7	29	466	30	9	12	20	336	89	43
Future Volume (veh/h)	4	472	7	29	466	30	9	12	20	336	89	43
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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	4	513	8	32	507	33	10	13	22	365	97	47
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	9	581	9	57	622	40	171	225	315	497	107	52
Arrive On Green	0.01	0.35	0.35	0.03	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1616	1666	26	1691	1649	107	274	590	827	1058	281	136
Grp Volume(v), veh/h	4	0	521	32	0	540	45	0	0	509	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1692	0	0	1475	0	0
Q Serve(g_s), s	0.2	0.0	19.1	1.2	0.0	18.2	0.0	0.0	0.0	20.4	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	19.1	1.2	0.0	18.2	1.1	0.0	0.0	21.5	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	9	0	590	57	0	663	711	0	0	656	0	0
V/C Ratio(X)	0.46	0.00	0.88	0.56	0.00	0.81	0.06	0.00	0.00	0.78	0.00	0.00
Avail Cap(c_a), veh/h	123	0	749	128	0	778	831	0	0	768	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.7	0.0	20.2	31.4	0.0	18.5	13.0	0.0	0.0	19.2	0.0	0.0
Incr Delay (d2), s/veh	33.9	0.0	10.1	8.4	0.0	5.8	0.0	0.0	0.0	4.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	10.5	0.7	0.0	9.8	0.5	0.0	0.0	9.4	0.0	0.0
LnGrp Delay(d),s/veh	66.6	0.0	30.3	39.8	0.0	24.3	13.0	0.0	0.0	23.5	0.0	0.0
LnGrp LOS	E		C	D		C	B			C		
Approach Vol, veh/h		525			572			45			509	
Approach Delay, s/veh		30.5			25.2			13.0			23.5	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.9	6.2	28.8		30.9	4.4	30.7				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		30.2	5.0	29.2		30.2	5.0	29.2				
Max Q Clear Time (g_c+1), s		3.1	3.2	21.1		23.5	2.2	20.2				
Green Ext Time (p_c), s		0.2	0.0	1.9		1.7	0.0	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			26.0									
HCM 2010 LOS			C									

Intersection						
Int Delay, s/veh	15.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	241	856	480	0	6	496
Future Vol, veh/h	241	856	480	0	6	496
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	11	5	5	2	2
Mvmt Flow	262	930	522	0	7	539

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	522	0	-	0	1976 522
Stage 1	-	-	-	-	522 -
Stage 2	-	-	-	-	1454 -
Critical Hdwy	4.21	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.299	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1000	-	-	-	68 555
Stage 1	-	-	-	-	595 -
Stage 2	-	-	-	-	215 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1000	-	-	-	50 555
Mov Cap-2 Maneuver	-	-	-	-	50 -
Stage 1	-	-	-	-	439 -
Stage 2	-	-	-	-	215 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	59
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1000	-	-	-	50	555
HCM Lane V/C Ratio	0.262	-	-	-	0.13	0.971
HCM Control Delay (s)	9.9	-	-	-	87.5	58.7
HCM Lane LOS	A	-	-	-	F	F
HCM 95th %tile Q(veh)	1.1	-	-	-	0.4	13.3

Intersection	
Intersection Delay, s/veh	334.2
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	194	709	548	302	287	302
Future Vol, veh/h	194	709	548	302	287	302
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	211	771	596	328	312	328
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	387.9	409.5	143.1
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	64%	21%	0%
Vol Thru, %	36%	0%	49%
Vol Right, %	0%	79%	51%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	850	903	589
LT Vol	548	194	0
Through Vol	302	0	287
RT Vol	0	709	302
Lane Flow Rate	924	982	640
Geometry Grp	1	1	1
Degree of Util (X)	1.838	1.8	1.196
Departure Headway (Hd)	9.537	7.91	10.101
Convergence, Y/N	Yes	Yes	Yes
Cap	388	471	365
Service Time	7.537	5.91	8.101
HCM Lane V/C Ratio	2.381	2.085	1.753
HCM Control Delay	409.5	387.9	143.1
HCM Lane LOS	F	F	F
HCM 95th-tile Q	45.3	51.5	17.7




















Intersection	
Intersection Delay, s/veh	400.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	698	346	302	548	0	351	0	205	0	0	0
Future Vol, veh/h	0	698	346	302	548	0	351	0	205	0	0	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	759	376	328	596	0	382	0	223	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	546.1	401.8	126.5	0
HCM LOS	F	F	F	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	63%	0%	36%	0%
Vol Thru, %	0%	67%	64%	100%
Vol Right, %	37%	33%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	556	1044	850	0
LT Vol	351	0	302	0
Through Vol	0	698	548	0
RT Vol	205	346	0	0
Lane Flow Rate	604	1135	924	0
Geometry Grp	1	1	1	1
Degree of Util (X)	1.164	2.154	1.823	0
Departure Headway (Hd)	8.918	8.446	9.17	16.375
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	411	443	407	0
Service Time	6.918	6.446	7.17	14.375
HCM Lane V/C Ratio	1.47	2.562	2.27	0
HCM Control Delay	126.5	546.1	401.8	19.4
HCM Lane LOS	F	F	F	N
HCM 95th-tile Q	18	66.7	46.2	0

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 1: I-5 SB Ramps & Sperry Ave Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	354	16	174	678	0	0	0	0	138	1	148
Future Volume (vph)	0	354	16	174	678	0	0	0	0	138	1	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		0.99		1.00	1.00					1.00	0.86	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3521		1429	1540					1429	1324	
Flt Permitted		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3521		1429	1540					1429	1324	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	385	17	189	737	0	0	0	0	150	1	161
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	133	0
Lane Group Flow (vph)	0	399	0	170	756	0	0	0	0	135	44	0
Confl. Peds. (#/hr)						1						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	1%	20%	20%	17%	0%	0%	0%	0%	20%	20%	17%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		12.3		48.0	48.0					15.5	15.5	
Effective Green, g (s)		12.3		48.0	48.0					15.5	15.5	
Actuated g/C Ratio		0.14		0.53	0.53					0.17	0.17	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		481		762	821					246	228	
v/s Ratio Prot		c0.11		0.12	c0.49					c0.09	0.03	
v/s Ratio Perm												
v/c Ratio		0.83		0.22	0.92					0.55	0.19	
Uniform Delay, d1		37.8		11.1	19.3					34.1	31.9	
Progression Factor		1.00		0.16	0.42					1.00	1.00	
Incremental Delay, d2		11.2		0.1	12.2					8.5	1.9	
Delay (s)		49.1		1.9	20.2					42.6	33.8	
Level of Service		D		A	C					D	C	
Approach Delay (s)		49.1			16.9			0.0			37.6	
Approach LOS		D			B			A			D	
Intersection Summary												
HCM 2000 Control Delay			28.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			14.2			
Intersection Capacity Utilization			67.8%			ICU Level of Service				C		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 2: I-5 NB Ramps & Sperry Ave Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗		↕	↗↗			
Traffic Volume (vph)	99	393	0	0	726	418	126	1	285	0	0	0
Future Volume (vph)	99	393	0	0	726	418	126	1	285	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.99			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		3169			3008	1468		1810	2450			
Flt Permitted		0.99			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		3169			3008	1468		1810	2450			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	427	0	0	789	454	137	1	310	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	142	0	0	154	0	0	0
Lane Group Flow (vph)	0	535	0	0	789	312	0	138	156	0	0	0
Heavy Vehicles (%)	0%	16%	0%	0%	20%	10%	0%	0%	16%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2!	4	4	6			
Permitted Phases						6			4			
Actuated Green, G (s)		31.7			30.2	61.9		12.8	43.0			
Effective Green, g (s)		31.7			30.2	61.9		12.8	43.0			
Actuated g/C Ratio		0.35			0.34	0.69		0.14	0.48			
Clearance Time (s)		5.1			5.1	5.1		5.1	5.1			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		1116			1009	1092		257	1309			
v/s Ratio Prot		c0.17			c0.26	0.10		c0.08	0.04			
v/s Ratio Perm						0.11			0.02			
v/c Ratio		0.48			0.78	0.29		0.54	0.12			
Uniform Delay, d1		22.7			26.9	5.5		35.8	13.0			
Progression Factor		0.14			0.45	0.00		1.00	1.00			
Incremental Delay, d2		0.9			3.4	0.1		2.2	0.0			
Delay (s)		4.1			15.6	0.1		38.0	13.1			
Level of Service		A			B	A		D	B			
Approach Delay (s)		4.1			9.9			20.7			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 3: Sperry Ave & Rogers Rd

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔↔	↑↑	↗	↖	↑↑	↗	↖	↑	↗	↖	↕	↗	
Traffic Volume (vph)	165	299	214	76	750	214	188	3	60	90	0	206	
Future Volume (vph)	165	299	214	76	750	214	188	3	60	90	0	206	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3213	3008	1583	1770	3139	1547	1770	1863	1583	1649	1380	1421	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3213	3008	1583	1770	3139	1547	1770	1863	1583	1649	1380	1421	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	179	325	233	83	815	233	204	3	65	98	0	224	
RTOR Reduction (vph)	0	0	135	0	0	144	0	0	54	0	108	95	
Lane Group Flow (vph)	179	325	98	83	815	89	204	3	11	88	10	21	
Confl. Peds. (#/hr)							1						
Heavy Vehicles (%)	9%	20%	2%	2%	15%	3%	2%	2%	2%	4%	2%	8%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov	
Protected Phases	5	2		1	6		8	8		7	7	5	
Permitted Phases			2			6			8			7	
Actuated Green, G (s)	9.1	37.8	37.8	7.8	34.5	34.5	15.6	15.6	15.6	7.3	7.3	16.4	
Effective Green, g (s)	9.1	37.8	37.8	7.8	34.5	34.5	15.6	15.6	15.6	7.3	7.3	16.4	
Actuated g/C Ratio	0.10	0.42	0.42	0.09	0.38	0.38	0.17	0.17	0.17	0.08	0.08	0.18	
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	324	1263	664	153	1203	593	306	322	274	133	111	361	
v/s Ratio Prot	c0.06	0.11		0.05	c0.26		c0.12	0.00		c0.05	0.01	0.01	
v/s Ratio Perm			0.06			0.06			0.01			0.01	
v/c Ratio	0.55	0.26	0.15	0.54	0.68	0.15	0.67	0.01	0.04	0.66	0.09	0.06	
Uniform Delay, d1	38.5	17.0	16.1	39.4	23.1	18.2	34.8	30.8	31.0	40.2	38.3	30.4	
Progression Factor	0.80	0.55	0.62	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.5	0.4	3.9	3.1	0.5	5.4	0.0	0.1	11.7	0.3	0.1	
Delay (s)	32.6	9.8	10.5	43.3	26.2	18.7	40.2	30.8	31.0	51.8	38.6	30.5	
Level of Service	C	A	B	D	C	B	D	C	C	D	D	C	
Approach Delay (s)		15.6			25.9			37.9			39.3		
Approach LOS		B			C			D			D		
Intersection Summary													
HCM 2000 Control Delay			25.9		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.65										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)					23.5			
Intersection Capacity Utilization			57.4%		ICU Level of Service					B			
Analysis Period (min)			15										

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗		↖↗	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	66	493	8	9	490	15	173	90	26	14	15	74
Future Volume (veh/h)	66	493	8	9	490	15	173	90	26	14	15	74
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		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	1583	1745	1900	1900	1827	1583	1900	1900	1900	1583	1629	1900
Adj Flow Rate, veh/h	72	536	9	10	533	16	188	98	28	15	16	80
Adj No. of Lanes	2	2	0	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	234	1295	22	55	1123	430	436	492	418	399	61	307
Arrive On Green	0.08	0.39	0.39	0.02	0.32	0.32	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	2925	3337	56	3510	3471	1329	1320	1900	1615	1071	237	1183
Grp Volume(v), veh/h	72	266	279	10	533	16	188	98	28	15	0	96
Grp Sat Flow(s),veh/h/ln	1463	1658	1735	1755	1736	1329	1320	1900	1615	1071	0	1420
Q Serve(g_s), s	1.0	5.1	5.1	0.1	5.3	0.4	5.8	1.8	0.6	0.5	0.0	2.3
Cycle Q Clear(g_c), s	1.0	5.1	5.1	0.1	5.3	0.4	8.1	1.8	0.6	2.2	0.0	2.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.83
Lane Grp Cap(c), veh/h	234	643	673	55	1123	430	436	492	418	399	0	368
V/C Ratio(X)	0.31	0.41	0.41	0.18	0.47	0.04	0.43	0.20	0.07	0.04	0.00	0.26
Avail Cap(c_a), veh/h	436	1419	1484	483	2930	1122	1215	1613	1371	1031	0	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	9.7	9.7	21.2	11.8	10.1	16.0	12.6	12.2	13.5	0.0	12.8
Incr Delay (d2), s/veh	0.7	0.9	0.9	1.6	0.7	0.1	0.7	0.2	0.1	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.5	2.6	0.1	2.6	0.1	2.2	1.0	0.3	0.1	0.0	0.9
LnGrp Delay(d),s/veh	19.6	10.6	10.6	22.7	12.4	10.2	16.7	12.8	12.2	13.5	0.0	13.2
LnGrp LOS	B	B	B	C	B	B	B	B	B	B		B
Approach Vol, veh/h		617			559			314			111	
Approach Delay, s/veh		11.7			12.6			15.1			13.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	22.6		15.8	8.0	19.8		15.8				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	6.5	36.8		37.0				
Max Q Clear Time (g_c+1/2), s	7.1	7.1		4.3	3.0	7.3		10.1				
Green Ext Time (p_c), s	0.0	6.3		0.6	0.0	6.8		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay			12.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	335	46	10	406	165	181	417	20	335	205	93
Future Volume (veh/h)	131	335	46	10	406	165	181	417	20	335	205	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1835	1900	1900	1792	1863	1900	1810	1900	1827	1900	1863
Adj Flow Rate, veh/h	142	364	50	11	441	179	197	453	22	364	223	101
Adj No. of Lanes	1	2	0	1	2	1	2	1	0	2	1	1
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, %	6	4	4	0	6	2	0	5	5	4	0	2
Cap, veh/h	176	911	124	30	714	332	288	518	25	450	672	560
Arrive On Green	0.10	0.30	0.30	0.02	0.21	0.21	0.08	0.30	0.30	0.13	0.35	0.35
Sat Flow, veh/h	1707	3076	419	1810	3406	1583	3510	1712	83	3375	1900	1583
Grp Volume(v), veh/h	142	205	209	11	441	179	197	0	475	364	223	101
Grp Sat Flow(s),veh/h/ln	1707	1744	1751	1810	1703	1583	1755	0	1795	1688	1900	1583
Q Serve(g_s), s	6.0	6.9	7.0	0.4	8.6	7.4	4.0	0.0	18.5	7.7	6.3	3.2
Cycle Q Clear(g_c), s	6.0	6.9	7.0	0.4	8.6	7.4	4.0	0.0	18.5	7.7	6.3	3.2
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	176	516	519	30	714	332	288	0	543	450	672	560
V/C Ratio(X)	0.81	0.40	0.40	0.37	0.62	0.54	0.68	0.00	0.88	0.81	0.33	0.18
Avail Cap(c_a), veh/h	228	648	650	148	1089	506	463	0	669	496	737	614
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	20.6	20.7	35.8	26.4	25.9	32.8	0.0	24.3	30.9	17.4	16.4
Incr Delay (d2), s/veh	11.7	1.1	1.1	15.6	1.9	2.9	1.1	0.0	10.7	7.9	0.3	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	8.4	3.5	3.5	0.3	4.2	3.5	2.0	0.0	10.7	4.1	3.3	1.4
LnGrp Delay(d),s/veh	43.9	21.7	21.7	51.4	28.2	28.8	33.9	0.0	35.0	38.9	17.7	16.6
LnGrp LOS	D	C	C	D	C	C	C		C	D	B	B
Approach Vol, veh/h		556			631			672			688	
Approach Delay, s/veh		27.4			28.8			34.7			28.7	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	27.3	10.2	30.6	11.8	20.9	14.0	26.8				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	27.3	* 9.7	28.5	* 9.8	23.5	* 11	27.4				
Max Q Clear Time (g_c+1), s	12.5	9.0	6.0	8.3	8.0	10.6	9.7	20.5				
Green Ext Time (p_c), s	0.0	3.8	0.1	1.5	0.0	4.8	0.1	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay				30.0								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	654	31	39	522	54	54	124	75	80	81	105
Future Volume (veh/h)	77	654	31	39	522	54	54	124	75	80	81	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1845	1813	1900	1863	1886	1900	1881	1900	1900
Adj Flow Rate, veh/h	84	711	34	42	567	59	59	135	82	87	88	114
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	5	5	2	0	0	1	0	0
Cap, veh/h	150	1059	51	93	889	92	312	266	161	304	183	237
Arrive On Green	0.08	0.31	0.31	0.05	0.28	0.28	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1810	3397	162	1757	3149	327	1170	1088	661	1166	749	971
Grp Volume(v), veh/h	84	366	379	42	310	316	59	0	217	87	0	202
Grp Sat Flow(s),veh/h/ln	1810	1750	1809	1757	1722	1754	1170	0	1749	1166	0	1720
Q Serve(g_s), s	2.2	9.1	9.1	1.2	7.8	7.9	2.3	0.0	5.3	3.5	0.0	5.0
Cycle Q Clear(g_c), s	2.2	9.1	9.1	1.2	7.8	7.9	7.3	0.0	5.3	8.8	0.0	5.0
Prop In Lane	1.00		0.09	1.00		0.19	1.00		0.38	1.00		0.56
Lane Grp Cap(c), veh/h	150	546	564	93	486	495	312	0	427	304	0	420
V/C Ratio(X)	0.56	0.67	0.67	0.45	0.64	0.64	0.19	0.00	0.51	0.29	0.00	0.48
Avail Cap(c_a), veh/h	236	789	816	211	759	773	543	0	771	534	0	759
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.0	14.9	14.9	22.9	15.7	15.7	19.3	0.0	16.3	20.1	0.0	16.1
Incr Delay (d2), s/veh	3.3	2.0	2.0	3.4	2.0	2.0	0.3	0.0	0.9	0.5	0.0	0.9
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	1.2	4.7	4.8	0.6	4.0	4.1	0.8	0.0	2.7	1.2	0.0	2.5
LnGrp Delay(d),s/veh	25.3	17.0	16.9	26.3	17.6	17.6	19.6	0.0	17.2	20.6	0.0	17.0
LnGrp LOS	C	B	B	C	B	B	B		B	C		B
Approach Vol, veh/h		829			668			276			289	
Approach Delay, s/veh		17.8			18.2			17.7			18.1	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	22.1		18.7	10.6	20.6		18.7				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	22.5	22.5		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+1), s	11.1	11.1		10.8	4.2	9.9		9.3				
Green Ext Time (p_c), s	0.0	4.5		1.2	0.0	4.0		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay				18.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	580	20	137	508	128	19	93	97	146	120	39
Future Volume (veh/h)	130	580	20	137	508	128	19	93	97	146	120	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1817	1900	1792	1830	1900	1900	1827	1827	1900	1863	1776
Adj Flow Rate, veh/h	141	630	22	149	552	139	21	101	105	159	130	42
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
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, %	0	4	4	6	4	4	0	4	4	0	2	7
Cap, veh/h	182	1143	40	191	909	228	362	463	393	370	472	375
Arrive On Green	0.10	0.34	0.34	0.11	0.33	0.33	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1810	3402	119	1707	2747	689	1227	1827	1551	1194	1863	1481
Grp Volume(v), veh/h	141	320	332	149	349	342	21	101	105	159	130	42
Grp Sat Flow(s),veh/h/ln	1810	1727	1794	1707	1739	1698	1227	1827	1551	1194	1863	1481
Q Serve(g_s), s	4.6	9.1	9.1	5.1	10.1	10.2	0.8	2.6	3.3	7.3	3.4	1.3
Cycle Q Clear(g_c), s	4.6	9.1	9.1	5.1	10.1	10.2	4.2	2.6	3.3	9.9	3.4	1.3
Prop In Lane	1.00		0.07	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	580	603	191	575	562	362	463	393	370	472	375
V/C Ratio(X)	0.78	0.55	0.55	0.78	0.61	0.61	0.06	0.22	0.27	0.43	0.28	0.11
Avail Cap(c_a), veh/h	301	774	805	454	924	902	744	1032	876	741	1052	836
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	26.4	16.3	16.3	26.0	16.9	16.9	19.7	17.8	18.0	21.7	18.0	17.3
Incr Delay (d2), s/veh	7.0	1.7	1.7	6.8	2.2	2.3	0.1	0.5	0.8	1.7	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.5	4.7	2.8	5.2	5.1	0.3	1.4	1.5	2.6	1.8	0.6
LnGrp Delay(d),s/veh	33.4	18.0	18.0	32.8	19.1	19.2	19.9	18.3	18.8	23.4	18.7	17.6
LnGrp LOS	C	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		793			840			227			331	
Approach Delay, s/veh		20.7			21.5			18.7			20.8	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	2.7	26.2		21.2	13.0	25.9		21.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	27.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+1), s	11.1	11.1		11.9	6.6	12.2		6.2				
Green Ext Time (p_c), s	0.2	5.8		2.8	0.1	7.1		2.0				
Intersection Summary												
HCM 2010 Ctrl Delay				20.8								
HCM 2010 LOS				C								

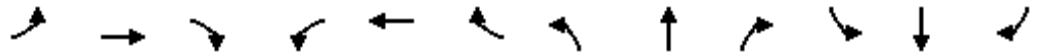
HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	306	32	14	444	33	65	97	19	4	44	129
Future Volume (veh/h)	225	306	32	14	444	33	65	97	19	4	44	129
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	0.99		0.96	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1818	1900	1900	1759	1900	1900	1886	1900	1900	1873	1900
Adj Flow Rate, veh/h	245	333	35	15	483	36	71	105	21	4	48	140
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	0	8	0	0	0	0	0	0	0
Cap, veh/h	528	1756	183	705	979	896	219	208	36	98	85	235
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	878	3156	329	1029	1759	1611	465	1053	181	13	431	1194
Grp Volume(v), veh/h	245	181	187	15	483	36	197	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	878	1727	1759	1029	1759	1611	1700	0	0	1637	0	0
Q Serve(g_s), s	9.1	2.0	2.0	0.3	6.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.6	2.0	2.0	2.3	6.5	0.4	3.7	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.19	1.00		1.00	0.36		0.11	0.02		0.73
Lane Grp Cap(c), veh/h	528	961	978	705	979	896	462	0	0	418	0	0
V/C Ratio(X)	0.46	0.19	0.19	0.02	0.49	0.04	0.43	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	643	1187	1209	840	1209	1107	1113	0	0	1111	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	4.2	4.2	4.8	5.2	3.9	13.9	0.0	0.0	14.1	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.2	0.2	0.0	0.8	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.0	1.0	0.1	3.3	0.2	1.9	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	11.4	4.4	4.4	4.8	6.1	3.9	14.5	0.0	0.0	14.9	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		613			534			197			192	
Approach Delay, s/veh		7.2			5.9			14.5			14.9	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.0		12.5		26.0		12.5				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.5		24.0		26.5		24.0				
Max Q Clear Time (g_c+1), s		17.6		5.7		8.5		6.1				
Green Ext Time (p_c), s		3.8		1.1		5.5		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				8.6								
HCM 2010 LOS				A								

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 9: SR-33 & Sperry Ave Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	167	63	36	135	52	134	418	55	30	275	247
Future Volume (vph)	143	167	63	36	135	52	134	418	55	30	275	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1641	1771		1583	1668		1736	1750		1805	1696	1468
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1641	1771		1583	1668		1736	1750		1805	1696	1468
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	182	68	39	147	57	146	454	60	33	299	268
RTOR Reduction (vph)	0	18	0	0	17	0	0	5	0	0	0	182
Lane Group Flow (vph)	155	232	0	39	187	0	146	509	0	33	299	86
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	10%	4%	0%	14%	9%	8%	4%	6%	12%	0%	12%	10%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	14.5	14.5		9.9	9.9		8.8	32.0		1.9	25.1	25.1
Effective Green, g (s)	14.5	14.5		9.9	9.9		8.8	32.0		1.9	25.1	25.1
Actuated g/C Ratio	0.19	0.19		0.13	0.13		0.11	0.41		0.02	0.32	0.32
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	305	330		201	212		196	719		44	547	473
v/s Ratio Prot	0.09	c0.13		0.02	c0.11		c0.08	c0.29		0.02	0.18	
v/s Ratio Perm												0.06
v/c Ratio	0.51	0.70		0.19	0.88		0.74	0.71		0.75	0.55	0.18
Uniform Delay, d1	28.4	29.6		30.4	33.4		33.4	19.0		37.7	21.7	19.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	6.7		0.5	31.2		14.2	5.8		51.4	3.9	0.8
Delay (s)	29.8	36.3		30.9	64.6		47.6	24.8		89.1	25.6	19.8
Level of Service	C	D		C	E		D	C		F	C	B
Approach Delay (s)		33.8			59.2			29.9			26.5	
Approach LOS		C			E			C			C	

Intersection Summary		
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.77	
Actuated Cycle Length (s)	77.8	Sum of lost time (s) 19.5
Intersection Capacity Utilization	64.0%	ICU Level of Service B
Analysis Period (min)	15	

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
10: SR-33 & M St/Walnut Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖↗	↖		↖	↑↑	↗	↖	↑↗	
Traffic Volume (veh/h)	30	173	69	165	147	22	101	255	184	74	567	96
Future Volume (veh/h)	30	173	69	165	147	22	101	255	184	74	567	96
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1667	1667	1667	1597	1597	1900
Adj Flow Rate, veh/h	33	188	75	179	160	24	110	277	200	80	616	104
Adj No. of Lanes	1	1	0	2	1	0	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, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	77	204	81	474	410	61	306	905	600	118	711	120
Arrive On Green	0.04	0.16	0.16	0.14	0.26	0.26	0.09	0.29	0.29	0.08	0.27	0.27
Sat Flow, veh/h	1774	1268	506	3442	1583	238	1587	3167	1417	1521	2598	438
Grp Volume(v), veh/h	33	0	263	179	0	184	110	277	200	80	359	361
Grp Sat Flow(s),veh/h/ln	1774	0	1773	1721	0	1821	1587	1583	1417	1521	1517	1519
Q Serve(g_s), s	1.0	0.0	7.9	2.6	0.0	4.5	2.6	3.7	1.3	2.8	12.2	12.2
Cycle Q Clear(g_c), s	1.0	0.0	7.9	2.6	0.0	4.5	2.6	3.7	1.3	2.8	12.2	12.2
Prop In Lane	1.00		0.29	1.00		0.13	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	77	0	285	474	0	471	306	905	600	118	415	416
V/C Ratio(X)	0.43	0.00	0.92	0.38	0.00	0.39	0.36	0.31	0.33	0.68	0.87	0.87
Avail Cap(c_a), veh/h	197	0	285	1844	0	1073	340	1112	693	281	645	646
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	25.2	0.0	22.4	21.2	0.0	16.5	13.5	15.1	2.5	24.3	18.7	18.7
Incr Delay (d2), s/veh	1.4	0.0	33.0	0.2	0.0	0.2	0.3	0.1	0.1	2.5	4.8	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	6.5	1.2	0.0	2.3	1.1	1.6	1.0	1.2	5.6	5.7
LnGrp Delay(d),s/veh	26.6	0.0	55.4	21.4	0.0	16.7	13.7	15.2	2.6	26.8	23.5	23.7
LnGrp LOS	C		E	C		B	B	B	A	C	C	C
Approach Vol, veh/h		296			363			587			800	
Approach Delay, s/veh		52.2			19.0			10.6			23.9	
Approach LOS		D			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	12.9	8.2	20.4	6.3	19.2	8.9	19.7				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 8.7	10.0	19.0	6.0	* 32	6.0	23.0				
Max Q Clear Time (g_c+1), s	14.6	9.9	4.8	5.7	3.0	6.5	4.6	14.2				
Green Ext Time (p_c), s	0.1	0.0	0.0	0.3	0.0	0.4	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			23.3									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	279	6	221	452	164	2	302	331	201	339	4
Future Volume (veh/h)	24	279	6	221	452	164	2	302	331	201	339	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.97	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	1777	1900	1845	1743	1900	1827	1881	1583	1743	1881	1900
Adj Flow Rate, veh/h	26	303	7	240	491	178	2	328	360	218	368	4
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	2	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, %	0	7	7	3	9	0	4	1	20	9	1	1
Cap, veh/h	222	419	10	414	590	532	403	1049	395	760	1322	14
Arrive On Green	0.03	0.24	0.24	0.12	0.34	0.34	0.00	0.29	0.29	0.07	0.37	0.37
Sat Flow, veh/h	1810	1729	40	1757	1743	1573	1740	3574	1344	3221	3620	39
Grp Volume(v), veh/h	26	0	310	240	491	178	2	328	360	218	181	191
Grp Sat Flow(s),veh/h/ln	1810	0	1769	1757	1743	1573	1740	1787	1344	1610	1787	1873
Q Serve(g_s), s	0.7	0.0	10.6	6.3	17.1	5.6	0.1	4.7	17.1	2.9	4.7	4.7
Cycle Q Clear(g_c), s	0.7	0.0	10.6	6.3	17.1	5.6	0.1	4.7	17.1	2.9	4.7	4.7
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	222	0	429	414	590	532	403	1049	395	760	652	684
V/C Ratio(X)	0.12	0.00	0.72	0.58	0.83	0.33	0.00	0.31	0.91	0.29	0.28	0.28
Avail Cap(c_a), veh/h	321	0	769	687	1101	994	609	1326	499	804	652	684
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	0.0	23.0	15.4	20.1	16.3	16.4	18.1	22.5	13.2	14.8	14.8
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.5	1.2	0.1	0.0	0.1	16.4	0.1	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	0.3	0.0	5.3	3.0	8.4	2.4	0.0	2.3	8.1	1.3	2.3	2.4
LnGrp Delay(d),s/veh	18.8	0.0	23.8	15.9	21.3	16.4	16.4	18.2	38.9	13.3	14.9	14.9
LnGrp LOS	B		C	B	C	B	B	B	D	B	B	B
Approach Vol, veh/h		336			909			690			590	
Approach Delay, s/veh		23.5			18.9			29.0			14.3	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	26.9	8.9	24.3	12.2	20.6	4.2	29.0				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	41.7	5.8	24.5	18.5	28.7	8.0	22.3				
Max Q Clear Time (g_c+I), s	12.7	19.1	4.9	19.1	8.3	12.6	2.1	6.7				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.2	0.0	0.3	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			21.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

2040 Plus Project (With Zach IC) (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	217	153	31	113	292	42	378	11	173	828	18
Future Volume (veh/h)	82	217	153	31	113	292	42	378	11	173	828	18
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	1863	1900	1863	1863	1667	1667	1900	1597	1597	1900
Adj Flow Rate, veh/h	89	236	166	34	123	317	46	411	12	188	900	20
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	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, %	2	2	2	2	2	2	14	14	14	19	19	19
Cap, veh/h	337	482	409	144	390	409	77	869	25	228	1148	26
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.05	0.28	0.28	0.15	0.38	0.38
Sat Flow, veh/h	945	1863	1583	186	1508	1583	1587	3142	92	1521	3034	67
Grp Volume(v), veh/h	89	236	166	157	0	317	46	207	216	188	450	470
Grp Sat Flow(s),veh/h/ln	945	1863	1583	1694	0	1583	1587	1583	1651	1521	1517	1585
Q Serve(g_s), s	3.9	4.9	4.0	0.0	0.0	8.5	1.3	5.0	5.0	5.5	12.0	12.0
Cycle Q Clear(g_c), s	7.0	4.9	4.0	3.1	0.0	8.5	1.3	5.0	5.0	5.5	12.0	12.0
Prop In Lane	1.00		1.00	0.22		1.00	1.00		0.06	1.00		0.04
Lane Grp Cap(c), veh/h	337	482	409	534	0	409	77	438	457	228	574	600
V/C Ratio(X)	0.26	0.49	0.41	0.29	0.00	0.77	0.60	0.47	0.47	0.82	0.78	0.78
Avail Cap(c_a), veh/h	465	733	623	744	0	623	194	644	671	299	729	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	14.4	14.1	13.7	0.0	15.7	21.3	13.8	13.8	18.9	12.6	12.6
Incr Delay (d2), s/veh	0.4	0.8	0.6	0.3	0.0	3.4	7.3	0.8	0.8	13.2	4.3	4.2
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	0.0	2.6	1.8	1.7	0.0	4.1	0.7	2.2	2.3	3.1	5.7	5.9
LnGrp Delay(d),s/veh	17.0	15.2	14.7	14.0	0.0	19.1	28.6	14.6	14.5	32.0	16.9	16.7
LnGrp LOS	B	B	B	B		B	C	B	B	C	B	B
Approach Vol, veh/h		491			474			469			1108	
Approach Delay, s/veh		15.3			17.4			15.9			19.4	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	18.5		16.4	6.2	23.1		16.4				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	18.6	18.6		18.0	5.6	22.0		18.0				
Max Q Clear Time (g_c+1), s	7.0	7.0		9.0	3.3	14.0		10.5				
Green Ext Time (p_c), s	0.1	1.7		1.7	0.0	3.3		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				17.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

2040 Plus Project (With Zach IC) (Mitigated)

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	105	21	8	55	5	91	1	6	2	1	0
Future Volume (veh/h)	2	105	21	8	55	5	91	1	6	2	1	0
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		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1583	1583	1739	1900	1583	1617	1900	1900	1781	1900
Adj Flow Rate, veh/h	2	114	23	9	60	5	99	1	7	2	1	0
Adj No. of Lanes	1	2	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	20	20	10	10	20	0	0	20	20	20
Cap, veh/h	6	961	508	18	436	36	345	21	144	6	3	0
Arrive On Green	0.00	0.27	0.27	0.01	0.28	0.28	0.12	0.12	0.12	0.00	0.00	0.00
Sat Flow, veh/h	1810	3610	1313	1508	1581	132	2925	175	1224	1149	575	0
Grp Volume(v), veh/h	2	114	23	9	0	65	99	0	8	3	0	0
Grp Sat Flow(s),veh/h/ln	1810	1805	1313	1508	0	1713	1463	0	1399	1724	0	0
Q Serve(g_s), s	0.0	0.7	0.3	0.2	0.0	0.9	0.9	0.0	0.2	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.7	0.3	0.2	0.0	0.9	0.9	0.0	0.2	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.88	0.67		0.00
Lane Grp Cap(c), veh/h	6	961	508	18	0	472	345	0	165	9	0	0
V/C Ratio(X)	0.33	0.12	0.05	0.50	0.00	0.14	0.29	0.00	0.05	0.35	0.00	0.00
Avail Cap(c_a), veh/h	301	961	508	251	0	472	779	0	372	344	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.0	8.4	5.8	14.8	0.0	8.2	12.1	0.0	11.8	14.9	0.0	0.0
Incr Delay (d2), s/veh	29.3	0.1	0.0	19.4	0.0	0.1	0.5	0.0	0.1	23.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.1	0.2	0.0	0.4	0.4	0.0	0.1	0.1	0.0	0.0
LnGrp Delay(d),s/veh	44.2	8.4	5.8	34.1	0.0	8.3	12.6	0.0	11.9	38.0	0.0	0.0
LnGrp LOS	D	A	A	C		A	B		B	D		
Approach Vol, veh/h		139			74			107			3	
Approach Delay, s/veh		8.5			11.5			12.5			37.9	
Approach LOS		A			B			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.0	4.9	12.5		4.6	4.6	12.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		8.0	5.0	8.0		6.0	5.0	8.0				
Max Q Clear Time (g_c+1), s		2.9	2.2	2.7		2.1	2.0	2.9				
Green Ext Time (p_c), s		0.1	0.0	0.3		0.0	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				10.8								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖↗	↖		↖	↑↑	↗	↖↗	↖	
Traffic Volume (veh/h)	120	103	26	16	17	14	3	67	28	32	37	8
Future Volume (veh/h)	120	103	26	16	17	14	3	67	28	32	37	8
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	1583	1786	1900	1900	1863	1583	1743	1797	1900
Adj Flow Rate, veh/h	130	112	28	17	18	15	3	73	30	35	40	9
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	20	0	0	0	2	20	9	7	7
Cap, veh/h	174	371	93	63	164	136	7	741	311	131	349	79
Arrive On Green	0.10	0.26	0.26	0.02	0.18	0.18	0.00	0.21	0.21	0.04	0.25	0.25
Sat Flow, veh/h	1774	1439	360	2925	902	752	1810	3539	1346	3221	1421	320
Grp Volume(v), veh/h	130	0	140	17	0	33	3	73	30	35	0	49
Grp Sat Flow(s),veh/h/ln	1774	0	1799	1463	0	1654	1810	1770	1346	1610	0	1741
Q Serve(g_s), s	2.7	0.0	2.4	0.2	0.0	0.6	0.1	0.6	0.7	0.4	0.0	0.8
Cycle Q Clear(g_c), s	2.7	0.0	2.4	0.2	0.0	0.6	0.1	0.6	0.7	0.4	0.0	0.8
Prop In Lane	1.00		0.20	1.00		0.45	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	174	0	464	63	0	300	7	741	311	131	0	428
V/C Ratio(X)	0.75	0.00	0.30	0.27	0.00	0.11	0.40	0.10	0.10	0.27	0.00	0.11
Avail Cap(c_a), veh/h	418	0	1097	383	0	822	237	1759	698	421	0	888
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	11.4	18.4	0.0	13.1	19.0	12.2	11.6	17.8	0.0	11.2
Incr Delay (d2), s/veh	6.3	0.0	0.4	2.2	0.0	0.2	31.8	0.1	0.1	1.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.2	0.1	0.0	0.3	0.1	0.3	0.3	0.2	0.0	0.4
LnGrp Delay(d),s/veh	23.1	0.0	11.8	20.7	0.0	13.2	50.8	12.3	11.7	18.9	0.0	11.3
LnGrp LOS	C		B	C		B	D	B	B	B		B
Approach Vol, veh/h		270			50			106			84	
Approach Delay, s/veh		17.2			15.8			13.2			14.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	13.1	4.8	14.8	4.2	14.5	7.7	11.8				
Change Period (Y+Rc), s	4.0	5.1	4.0	* 4.9	4.0	* 5.1	4.0	4.9				
Max Green Setting (Gmax), s	5.0	19.0	5.0	* 23	5.0	* 20	9.0	19.0				
Max Q Clear Time (g_c+1), s	12.4	2.7	2.2	4.4	2.1	2.8	4.7	2.6				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.7	0.0	0.2	0.1	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			15.8									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	224	125	14	122	20	21	151	10	16	243	8
Future Volume (veh/h)	26	224	125	14	122	20	21	151	10	16	243	8
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	1810	1810	1810	1863	1863	1863	1597	1597	1597	1638	1638	1900
Adj Flow Rate, veh/h	28	243	136	15	133	22	23	164	11	17	264	9
Adj No. of Lanes	1	2	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, %	5	5	5	2	2	2	19	19	19	16	16	16
Cap, veh/h	246	491	219	426	231	230	43	602	269	33	590	20
Arrive On Green	0.14	0.14	0.14	0.12	0.12	0.12	0.03	0.20	0.20	0.02	0.19	0.19
Sat Flow, veh/h	1723	3438	1538	3442	1863	1583	1521	3034	1357	1560	3071	104
Grp Volume(v), veh/h	28	243	136	15	133	22	23	164	11	17	133	140
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1721	1863	1583	1521	1517	1357	1560	1556	1620
Q Serve(g_s), s	0.6	2.7	3.5	0.2	2.8	0.5	0.6	1.9	0.3	0.4	3.2	3.2
Cycle Q Clear(g_c), s	0.6	2.7	3.5	0.2	2.8	0.5	0.6	1.9	0.3	0.4	3.2	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	246	491	219	426	231	230	43	602	269	33	299	311
V/C Ratio(X)	0.11	0.50	0.62	0.04	0.58	0.10	0.54	0.27	0.04	0.51	0.45	0.45
Avail Cap(c_a), veh/h	256	511	229	595	322	307	201	706	316	206	362	377
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	15.6	16.5	16.8	16.1	17.2	15.4	20.0	14.1	13.5	20.2	14.9	14.9
Incr Delay (d2), s/veh	0.2	0.8	4.7	0.0	2.3	0.2	10.2	0.2	0.1	11.4	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.3	1.8	0.1	1.6	0.2	0.4	0.8	0.1	0.3	1.4	1.5
LnGrp Delay(d),s/veh	15.8	17.3	21.5	16.1	19.5	15.6	30.2	14.4	13.6	31.6	15.9	15.9
LnGrp LOS	B	B	C	B	B	B	C	B	B	C	B	B
Approach Vol, veh/h		407			170			198			290	
Approach Delay, s/veh		18.6			18.7			16.2			16.8	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	14.1		11.7	5.2	13.8		11.0				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	9.7		6.2	5.5	9.7		7.2				
Max Q Clear Time (g_c+I), s	12.4	3.9		5.5	2.6	5.2		4.8				
Green Ext Time (p_c), s	0.0	0.4		0.2	0.0	0.5		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
16: Baldwin Rd & Zacharias Rd

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↗	↖	↗	
Traffic Volume (veh/h)	7	84	81	27	51	14	294	391	148	2	259	55
Future Volume (veh/h)	7	84	81	27	51	14	294	391	148	2	259	55
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	1810	1810	1900	1863	1863	1900	1810	1810	1810	1610	1610	1900
Adj Flow Rate, veh/h	8	91	88	29	55	15	320	425	161	2	282	60
Adj No. of Lanes	1	2	0	2	2	0	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, %	5	5	5	2	2	2	5	5	5	18	18	18
Cap, veh/h	183	185	161	399	322	84	379	1273	569	4	385	81
Arrive On Green	0.11	0.11	0.11	0.12	0.12	0.12	0.22	0.37	0.37	0.00	0.15	0.15
Sat Flow, veh/h	1723	1741	1520	3442	2776	728	1723	3438	1538	1533	2519	528
Grp Volume(v), veh/h	8	90	89	29	34	36	320	425	161	2	170	172
Grp Sat Flow(s),veh/h/ln	1723	1719	1541	1721	1770	1734	1723	1719	1538	1533	1530	1517
Q Serve(g_s), s	0.2	2.6	2.9	0.4	0.9	1.0	9.4	4.7	3.9	0.1	5.6	5.7
Cycle Q Clear(g_c), s	0.2	2.6	2.9	0.4	0.9	1.0	9.4	4.7	3.9	0.1	5.6	5.7
Prop In Lane	1.00		0.99	1.00		0.42	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	183	183	164	399	205	201	379	1273	569	4	234	232
V/C Ratio(X)	0.04	0.49	0.55	0.07	0.17	0.18	0.84	0.33	0.28	0.48	0.73	0.74
Avail Cap(c_a), veh/h	196	195	175	521	268	263	489	1273	569	160	278	276
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	21.2	22.3	22.4	20.8	21.1	21.1	19.7	12.0	11.7	26.3	21.3	21.4
Incr Delay (d2), s/veh	0.1	2.0	3.0	0.1	0.4	0.4	10.2	0.2	0.3	65.9	7.5	8.7
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	0.1	1.3	1.4	0.2	0.5	0.5	5.5	2.2	1.7	0.1	2.8	3.0
LnGrp Delay(d),s/veh	21.3	24.3	25.4	20.9	21.4	21.5	30.0	12.1	12.0	92.2	28.8	30.1
LnGrp LOS	C	C	C	C	C	C	C	B	B	F	C	C
Approach Vol, veh/h		187			99			906			344	
Approach Delay, s/veh		24.7			21.3			18.4			29.8	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	25.4		11.4	15.6	13.9		11.9				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	19.1		6.0	15.0	9.6		8.0				
Max Q Clear Time (g_c+I), s	12.1	6.7		4.9	11.4	7.7		3.0				
Green Ext Time (p_c), s	0.0	2.5		0.1	0.3	0.3		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			21.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	60	330	314	291	498	16		
Future Volume (veh/h)	60	330	314	291	498	16		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1638	1638	1624	1900		
Adj Flow Rate, veh/h	65	359	341	316	541	17		
Adj No. of Lanes	1	2	1	2	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	5	5	16	16	17	17		
Cap, veh/h	235	1083	411	1876	762	24		
Arrive On Green	0.14	0.14	0.26	0.60	0.25	0.25		
Sat Flow, veh/h	1723	2707	1560	3194	3135	96		
Grp Volume(v), veh/h	65	359	341	316	273	285		
Grp Sat Flow(s),veh/h/ln	1723	1354	1560	1556	1543	1607		
Q Serve(g_s), s	1.5	4.1	9.2	2.0	7.2	7.2		
Cycle Q Clear(g_c), s	1.5	4.1	9.2	2.0	7.2	7.2		
Prop In Lane	1.00	1.00	1.00			0.06		
Lane Grp Cap(c), veh/h	235	1083	411	1876	385	401		
V/C Ratio(X)	0.28	0.33	0.83	0.17	0.71	0.71		
Avail Cap(c_a), veh/h	240	1090	736	2950	596	621		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.2	9.2	15.4	3.9	15.2	15.2		
Incr Delay (d2), s/veh	0.6	0.2	4.4	0.0	2.4	2.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	3.6	4.4	0.8	3.3	3.4		
LnGrp Delay(d),s/veh	17.9	9.4	19.8	3.9	17.6	17.6		
LnGrp LOS	B	A	B	A	B	B		
Approach Vol, veh/h	424			657	558			
Approach Delay, s/veh	10.7			12.2	17.6			
Approach LOS	B			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.6		11.9	15.7	16.9		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		42.2		6.2	21.0	17.2		
Max Q Clear Time (g_c+I1), s		4.0		6.1	11.2	9.2		
Green Ext Time (p_c), s		2.0		0.0	0.7	1.9		
Intersection Summary								
HCM 2010 Ctrl Delay			13.6					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	4	625	283	35	273	544		
Future Volume (veh/h)	4	625	283	35	273	544		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1583	1583	1638	1900	1624	1624		
Adj Flow Rate, veh/h	4	679	308	38	297	591		
Adj No. of Lanes	1	1	2	0	2	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	20	20	16	16	17	17		
Cap, veh/h	320	504	592	72	488	1483		
Arrive On Green	0.21	0.21	0.21	0.21	0.16	0.48		
Sat Flow, veh/h	1508	1346	2874	342	3000	3167		
Grp Volume(v), veh/h	4	679	170	176	297	591		
Grp Sat Flow(s),veh/h/ln	1508	1346	1556	1578	1500	1543		
Q Serve(g_s), s	0.1	8.0	3.7	3.7	3.5	4.6		
Cycle Q Clear(g_c), s	0.1	8.0	3.7	3.7	3.5	4.6		
Prop In Lane	1.00	1.00		0.22	1.00			
Lane Grp Cap(c), veh/h	320	504	330	334	488	1483		
V/C Ratio(X)	0.01	1.35	0.52	0.52	0.61	0.40		
Avail Cap(c_a), veh/h	320	504	429	435	2067	3303		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	11.7	11.8	13.2	13.2	14.7	6.3		
Incr Delay (d2), s/veh	0.0	168.8	1.3	1.3	1.2	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	28.8	1.7	1.7	1.5	2.0		
LnGrp Delay(d),s/veh	11.8	180.6	14.4	14.5	15.9	6.5		
LnGrp LOS	B	F	B	B	B	A		
Approach Vol, veh/h	683		346		888			
Approach Delay, s/veh	179.6		14.4		9.6			
Approach LOS	F		B		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.1	13.8				23.9		13.8
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	20.0	10.4				40.4		8.0
Max Q Clear Time (g_c+I), s	11.5	5.7				6.6		10.0
Green Ext Time (p_c), s	1.0	0.7				4.0		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			71.0					
HCM 2010 LOS			E					

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 20: SR-33 & Baldwin Rd

Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT		T	T	TT	
Traffic Volume (vph)	393	9	2	751	466	84
Future Volume (vph)	393	9	2	751	466	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.97		1.00	1.00	0.95	
Frt	1.00		1.00	1.00	0.98	
Flt Protected	0.95		0.95	1.00	1.00	
Satd. Flow (prot)	3335		1556	1638	3015	
Flt Permitted	0.95		0.95	1.00	1.00	
Satd. Flow (perm)	3335		1556	1638	3015	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	427	10	2	816	507	91
RTOR Reduction (vph)	2	0	0	0	22	0
Lane Group Flow (vph)	435	0	2	816	576	0
Heavy Vehicles (%)	5%	5%	16%	16%	17%	17%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	10.5		1.0	33.5	28.5	
Effective Green, g (s)	10.5		1.0	33.5	28.5	
Actuated g/C Ratio	0.19		0.02	0.60	0.51	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	629		27	986	1545	
v/s Ratio Prot	c0.13		0.00	c0.50	0.19	
v/s Ratio Perm						
v/c Ratio	0.69		0.07	0.83	0.37	
Uniform Delay, d1	21.0		26.8	8.8	8.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	3.3		1.2	5.8	0.2	
Delay (s)	24.3		28.0	14.6	8.3	
Level of Service	C		C	B	A	
Approach Delay (s)	24.3			14.6	8.3	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	15.6
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 21: Rogers Rd & SR-33

Timing Plan: AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵↵↵	
Traffic Volume (vph)	498	126	6	395	368	52
Future Volume (vph)	498	126	6	395	368	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.95		1.00	1.00	0.97	
Frt	0.97		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	2992		1556	1638	2912	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	2992		1556	1638	2912	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	541	137	7	429	400	57
RTOR Reduction (vph)	43	0	0	0	23	0
Lane Group Flow (vph)	635	0	7	429	434	0
Heavy Vehicles (%)	17%	17%	16%	16%	19%	19%
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	14.0		0.8	18.8	10.6	
Effective Green, g (s)	14.0		0.8	18.8	10.6	
Actuated g/C Ratio	0.34		0.02	0.46	0.26	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1021		30	751	752	
v/s Ratio Prot	0.21		0.00	c0.26	c0.15	
v/s Ratio Perm						
v/c Ratio	0.62		0.23	0.57	0.58	
Uniform Delay, d1	11.3		19.8	8.1	13.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2		4.0	1.1	1.1	
Delay (s)	12.5		23.8	9.2	14.3	
Level of Service	B		C	A	B	
Approach Delay (s)	12.5			9.4	14.3	
Approach LOS	B			A	B	
Intersection Summary						
HCM 2000 Control Delay			12.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			41.0		Sum of lost time (s)	15.6
Intersection Capacity Utilization			42.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
 22: Sycamore Ave & Eucalyptus Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	53	132	93	0	580	29	84	322	0	0	262	22
Future Volume (veh/h)	53	132	93	0	580	29	84	322	0	0	262	22
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	1900	1583	1900	1900	1583	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	58	143	101	0	630	32	91	350	0	0	285	24
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	20	20	20	20	20	2	2	2	2	2	2
Cap, veh/h	104	209	119	0	733	37	150	432	0	0	589	50
Arrive On Green	0.49	0.49	0.49	0.00	0.49	0.49	0.35	0.35	0.00	0.00	0.35	0.35
Sat Flow, veh/h	55	427	242	0	1494	76	207	1244	0	0	1695	143
Grp Volume(v), veh/h	302	0	0	0	0	662	441	0	0	0	0	309
Grp Sat Flow(s),veh/h/ln	725	0	0	0	0	1570	1451	0	0	0	0	1838
Q Serve(g_s), s	4.3	0.0	0.0	0.0	0.0	20.6	9.0	0.0	0.0	0.0	0.0	7.3
Cycle Q Clear(g_c), s	24.9	0.0	0.0	0.0	0.0	20.6	16.3	0.0	0.0	0.0	0.0	7.3
Prop In Lane	0.19		0.33	0.00		0.05	0.21		0.00	0.00		0.08
Lane Grp Cap(c), veh/h	433	0	0	0	0	770	583	0	0	0	0	639
V/C Ratio(X)	0.70	0.00	0.00	0.00	0.00	0.86	0.76	0.00	0.00	0.00	0.00	0.48
Avail Cap(c_a), veh/h	460	0	0	0	0	806	676	0	0	0	0	745
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	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	11.0	0.0	0.0	0.0	0.0	12.5	17.2	0.0	0.0	0.0	0.0	14.2
Incr Delay (d2), s/veh	4.3	0.0	0.0	0.0	0.0	9.0	4.2	0.0	0.0	0.0	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	3.5	0.0	0.0	0.0	0.0	10.8	7.1	0.0	0.0	0.0	0.0	3.8
LnGrp Delay(d),s/veh	15.3	0.0	0.0	0.0	0.0	21.5	21.5	0.0	0.0	0.0	0.0	14.8
LnGrp LOS	B					C	C					B
Approach Vol, veh/h		302				662		441				309
Approach Delay, s/veh		15.3				21.5		21.5				14.8
Approach LOS		B				C		C				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.8		31.7		23.8		31.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		28.5		22.5		28.5				
Max Q Clear Time (g_c+1), s		18.3		26.9		9.3		22.6				
Green Ext Time (p_c), s		1.0		0.3		1.3		2.0				
Intersection Summary												
HCM 2010 Ctrl Delay				19.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 23: Elm Ave & Eucalyptus Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↗		↔		↖	↖			↔	
Traffic Volume (veh/h)	23	23	205	1	4	0	244	489	17	1	20	1
Future Volume (veh/h)	23	23	205	1	4	0	244	489	17	1	20	1
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	1900	1583	1583	1900	1583	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	25	25	223	1	4	0	265	532	18	1	22	1
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	20	20	20	20	20	2	2	2	2	2	2
Cap, veh/h	309	205	288	190	300	0	887	787	27	151	764	33
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.00	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	472	958	1346	111	1399	0	1383	1791	61	16	1739	76
Grp Volume(v), veh/h	50	0	223	5	0	0	265	0	550	24	0	0
Grp Sat Flow(s),veh/h/ln1430	0	1346	1511	0	0	1383	0	1852	1831	0	0	0
Q Serve(g_s), s	0.0	0.0	4.1	0.0	0.0	0.0	3.2	0.0	6.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	4.1	0.1	0.0	0.0	3.4	0.0	6.2	0.2	0.0	0.0
Prop In Lane	0.50		1.00	0.20		0.00	1.00		0.03	0.04		0.04
Lane Grp Cap(c), veh/h	514	0	288	490	0	0	887	0	813	948	0	0
V/C Ratio(X)	0.10	0.00	0.77	0.01	0.00	0.00	0.30	0.00	0.68	0.03	0.00	0.00
Avail Cap(c_a), veh/h	773	0	544	756	0	0	1372	0	1462	1566	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.3	0.0	9.6	8.0	0.0	0.0	5.0	0.0	5.8	4.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	4.4	0.0	0.0	0.0	0.2	0.0	1.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.3	0.0	1.8	0.0	0.0	0.0	0.0	1.3	0.0	3.3	0.1	0.0	0.0
LnGrp Delay(d),s/veh	8.4	0.0	14.0	8.0	0.0	0.0	5.2	0.0	6.8	4.1	0.0	0.0
LnGrp LOS	A		B	A			A		A	A		
Approach Vol, veh/h		273			5			815			24	
Approach Delay, s/veh		13.0			8.0			6.3			4.1	
Approach LOS		B			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.9		10.1		15.9		10.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.5		10.5		20.5		10.5				
Max Q Clear Time (g_c+1), s		8.2		6.1		2.2		2.1				
Green Ext Time (p_c), s		3.3		0.4		0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				7.9								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
24: Sycamore Ave & Las Palmas Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	533	8	11	403	44	13	137	248	65	43	17
Future Volume (veh/h)	14	533	8	11	403	44	13	137	248	65	43	17
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	1759	1759	1900	1638	1638	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	579	9	12	438	48	14	149	270	71	47	18
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	30	634	10	23	528	58	490	164	298	128	92	35
Arrive On Green	0.02	0.37	0.37	0.01	0.36	0.36	0.28	0.28	0.28	0.07	0.07	0.07
Sat Flow, veh/h	1675	1728	27	1560	1451	159	1774	595	1078	1774	1284	492
Grp Volume(v), veh/h	15	0	588	12	0	486	14	0	419	71	0	65
Grp Sat Flow(s),veh/h/ln	1675	0	1755	1560	0	1610	1774	0	1673	1774	0	1776
Q Serve(g_s), s	0.7	0.0	25.3	0.6	0.0	21.8	0.5	0.0	19.2	3.1	0.0	2.8
Cycle Q Clear(g_c), s	0.7	0.0	25.3	0.6	0.0	21.8	0.5	0.0	19.2	3.1	0.0	2.8
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.64	1.00		0.28
Lane Grp Cap(c), veh/h	30	0	644	23	0	586	490	0	462	128	0	128
V/C Ratio(X)	0.50	0.00	0.91	0.53	0.00	0.83	0.03	0.00	0.91	0.56	0.00	0.51
Avail Cap(c_a), veh/h	106	0	735	98	0	675	542	0	511	139	0	139
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.6	0.0	23.9	38.8	0.0	23.0	20.9	0.0	27.7	35.5	0.0	35.4
Incr Delay (d2), s/veh	12.6	0.0	14.7	17.4	0.0	7.7	0.0	0.0	18.7	4.1	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	14.9	0.4	0.0	10.8	0.2	0.0	11.2	1.6	0.0	1.5
LnGrp Delay(d),s/veh	51.2	0.0	38.6	56.2	0.0	30.6	20.9	0.0	46.4	39.6	0.0	38.5
LnGrp LOS	D		D	E		C	C		D	D		D
Approach Vol, veh/h		603			498			433			136	
Approach Delay, s/veh		38.9			31.2			45.6			39.1	
Approach LOS		D			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.7	5.2	34.9		11.5	5.4	34.6				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		24.2	5.0	33.2		6.2	5.0	33.2				
Max Q Clear Time (g_c+I1), s		21.2	2.6	27.3		5.1	2.7	23.8				
Green Ext Time (p_c), s		0.7	0.0	1.8		0.0	0.0	1.9				
Intersection Summary												
HCM 2010 Ctrl Delay			38.4									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	464	5	17	568	59	66	66	170	188	19	23
Future Volume (veh/h)	2	464	5	17	568	59	66	66	170	188	19	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1900	1638	1638	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	504	5	18	617	64	72	72	185	204	21	25
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	16	16	16	2	2	2	2	2	2
Cap, veh/h	5	789	8	33	690	72	148	134	275	332	35	30
Arrive On Green	0.00	0.45	0.45	0.02	0.47	0.47	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1675	1739	17	1560	1460	151	283	471	969	813	124	104
Grp Volume(v), veh/h	2	0	509	18	0	681	329	0	0	250	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1756	1560	0	1611	1723	0	0	1041	0	0
Q Serve(g_s), s	0.1	0.0	14.4	0.7	0.0	25.0	0.0	0.0	0.0	4.5	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	14.4	0.7	0.0	25.0	10.8	0.0	0.0	15.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.09	0.22		0.56	0.82		0.10
Lane Grp Cap(c), veh/h	5	0	797	33	0	761	557	0	0	397	0	0
V/C Ratio(X)	0.44	0.00	0.64	0.54	0.00	0.89	0.59	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	129	0	1090	120	0	1000	820	0	0	596	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.3	0.0	13.6	31.4	0.0	15.6	20.5	0.0	0.0	22.3	0.0	0.0
Incr Delay (d2), s/veh	54.5	0.0	0.9	12.9	0.0	8.5	1.0	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	7.1	0.4	0.0	12.8	5.3	0.0	0.0	4.4	0.0	0.0
LnGrp Delay(d),s/veh	86.7	0.0	14.5	44.3	0.0	24.1	21.5	0.0	0.0	24.0	0.0	0.0
LnGrp LOS	F		B	D		C	C			C		
Approach Vol, veh/h		511			699			329			250	
Approach Delay, s/veh		14.7			24.6			21.5			24.0	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.2	5.4	35.2		24.2	4.2	36.4				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		29.2	5.0	40.2		29.2	5.0	40.2				
Max Q Clear Time (g_c+1), s		12.8	2.7	16.4		17.3	2.1	27.0				
Green Ext Time (p_c), s		1.7	0.0	3.0		1.1	0.0	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			21.1									
HCM 2010 LOS			C									

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 26: Las Palmas Ave/W Main Ave & Jennings Rd

Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	423	736	445	3	20	906
Future Volume (vph)	423	736	445	3	20	906
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	1.00	1.00		1.00	0.95
Frt	1.00	1.00	1.00		0.86	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1626	1712	1665		1592	1504
Flt Permitted	0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1626	1712	1665		1592	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	460	800	484	3	22	985
RTOR Reduction (vph)	0	0	0	0	422	439
Lane Group Flow (vph)	460	800	487	0	83	63
Heavy Vehicles (%)	11%	11%	14%	14%	2%	2%
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	29.7	65.2	31.5		11.0	11.0
Effective Green, g (s)	29.7	65.2	31.5		11.0	11.0
Actuated g/C Ratio	0.34	0.74	0.36		0.13	0.13
Clearance Time (s)	4.0	5.8	5.8		5.8	5.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	550	1271	597		199	188
v/s Ratio Prot	c0.28	0.47	c0.29		c0.05	
v/s Ratio Perm						0.04
v/c Ratio	0.84	0.63	0.82		0.41	0.33
Uniform Delay, d1	26.8	5.5	25.5		35.4	35.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.6	1.0	8.4		1.4	1.1
Delay (s)	37.4	6.4	34.0		36.8	36.1
Level of Service	D	A	C		D	D
Approach Delay (s)		17.8	34.0		36.5	
Approach LOS		B	C		D	
Intersection Summary						
HCM 2000 Control Delay			27.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.76			
Actuated Cycle Length (s)			87.8		Sum of lost time (s)	15.6
Intersection Capacity Utilization			79.8%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 27: SR-33 & New Connection (Project) Timing Plan: AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	558	674	258	469	104
Future Volume (vph)	60	558	674	258	469	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	0.97	1.00	0.95	
Frt	0.88	0.85	1.00	1.00	0.97	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1621	1504	3433	1863	3443	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1621	1504	3433	1863	3443	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	607	733	280	510	113
RTOR Reduction (vph)	229	280	0	0	20	0
Lane Group Flow (vph)	109	54	733	280	603	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	9.3	9.3	18.7	39.1	15.9	
Effective Green, g (s)	9.3	9.3	18.7	39.1	15.9	
Actuated g/C Ratio	0.16	0.16	0.33	0.68	0.28	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	262	243	1118	1269	953	
v/s Ratio Prot	c0.07		c0.21	0.15	c0.18	
v/s Ratio Perm		0.04				
v/c Ratio	0.42	0.22	0.66	0.22	0.63	
Uniform Delay, d1	21.6	20.9	16.6	3.4	18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.5	1.4	0.1	1.4	
Delay (s)	22.7	21.4	18.0	3.5	19.6	
Level of Service	C	C	B	A	B	
Approach Delay (s)	22.0			14.0	19.6	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

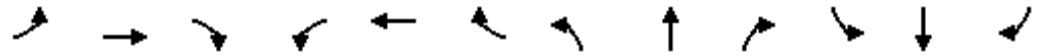
HCM 2010 Signalized Intersection Summary
28: Ward Ave & New Connection (Project)

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	363	398	103	675	0	340	0	255	0	0	0
Future Volume (veh/h)	0	363	398	103	675	0	340	0	255	0	0	0
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	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	0	395	433	112	734	0	370	0	277	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	677	575	148	1019	0	871	0	401	0	4	0
Arrive On Green	0.00	0.36	0.36	0.08	0.55	0.00	0.25	0.00	0.25	0.00	0.00	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	3442	0	1583	0	1863	0
Grp Volume(v), veh/h	0	395	433	112	734	0	370	0	277	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	1721	0	1583	0	1863	0
Q Serve(g_s), s	0.0	7.7	10.8	2.8	13.3	0.0	4.0	0.0	7.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.7	10.8	2.8	13.3	0.0	4.0	0.0	7.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	4	677	575	148	1019	0	871	0	401	0	4	0
V/C Ratio(X)	0.00	0.58	0.75	0.75	0.72	0.00	0.42	0.00	0.69	0.00	0.00	0.00
Avail Cap(c_a), veh/h	197	1105	939	347	1262	0	1414	0	651	0	745	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.6	12.6	20.2	7.6	0.0	14.1	0.0	15.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	2.0	7.5	1.5	0.0	0.3	0.0	2.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	5.0	1.7	7.2	0.0	1.9	0.0	3.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	12.4	14.6	27.7	9.2	0.0	14.4	0.0	17.4	0.0	0.0	0.0
LnGrp LOS		B	B	C	A		B		B			
Approach Vol, veh/h		828			846			647			0	
Approach Delay, s/veh		13.5			11.6			15.7			0.0	
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		15.9	8.3	20.9		0.0	0.0	29.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	8.8	26.7		18.0	5.0	30.5				
Max Q Clear Time (g_c+1), s		9.1	4.8	12.8		0.0	0.0	15.3				
Green Ext Time (p_c), s		2.3	0.1	3.6		0.0	0.0	4.7				
Intersection Summary												
HCM 2010 Ctrl Delay				13.4								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 1: I-5 SB Ramps & Sperry Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↖					↖	↕	
Traffic Volume (vph)	0	200	40	426	184	0	0	0	0	499	1	153
Future Volume (vph)	0	200	40	426	184	0	0	0	0	499	1	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1		4.0	4.0					5.1	5.1	
Lane Util. Factor		0.95		0.95	0.95					0.95	0.95	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		0.98		1.00	1.00					1.00	0.93	
Flt Protected		1.00		0.95	0.98					0.95	0.97	
Satd. Flow (prot)		3397		1504	1675					1429	1467	
Flt Permitted		1.00		0.95	0.98					0.95	0.97	
Satd. Flow (perm)		3397		1504	1675					1429	1467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	217	43	463	200	0	0	0	0	542	1	166
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	34	0
Lane Group Flow (vph)	0	242	0	329	334	0	0	0	0	363	312	0
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	4%	0%	14%	0%	0%	0%	0%	0%	20%	4%	2%
Turn Type		NA		Split	NA					Split	NA	
Protected Phases		4		3	3					6	6	
Permitted Phases												
Actuated Green, G (s)		12.0		24.2	24.2					39.6	39.6	
Effective Green, g (s)		12.0		24.2	24.2					39.6	39.6	
Actuated g/C Ratio		0.13		0.27	0.27					0.44	0.44	
Clearance Time (s)		5.1		4.0	4.0					5.1	5.1	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		452		404	450					628	645	
v/s Ratio Prot		c0.07		c0.22	0.20					c0.25	0.21	
v/s Ratio Perm												
v/c Ratio		0.53		0.81	0.74					0.58	0.48	
Uniform Delay, d1		36.4		30.8	30.1					18.9	17.9	
Progression Factor		1.00		0.11	0.09					1.00	1.00	
Incremental Delay, d2		1.2		9.6	5.2					3.8	2.6	
Delay (s)		37.6		12.9	8.0					22.8	20.5	
Level of Service		D		B	A					C	C	
Approach Delay (s)		37.6			10.4			0.0			21.7	
Approach LOS		D			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			19.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			14.2			
Intersection Capacity Utilization			57.0%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 2: I-5 NB Ramps & Sperry Ave Timing Plan: PM Peak



























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗		↕	↗↗			
Traffic Volume (vph)	157	542	0	0	591	350	19	3	608	0	0	0
Future Volume (vph)	157	542	0	0	591	350	19	3	608	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	5.1		5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00		1.00	0.88			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.99			1.00	1.00		0.96	1.00			
Satd. Flow (prot)		3292			3282	1346		1776	2369			
Flt Permitted		0.99			1.00	1.00		0.96	1.00			
Satd. Flow (perm)		3292			3282	1346		1776	2369			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	589	0	0	642	380	21	3	661	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	151	0	0	0
Lane Group Flow (vph)	0	760	0	0	642	380	0	24	510	0	0	0
Heavy Vehicles (%)	10%	8%	0%	0%	10%	20%	0%	20%	20%	0%	0%	0%
Turn Type	Split	NA			NA	custom	Split	NA	custom			
Protected Phases	2!	2			6	2 4!	4	4!	6			
Permitted Phases					6				4			
Actuated Green, G (s)		37.5			25.2	79.8		12.0	37.2			
Effective Green, g (s)		37.5			25.2	79.8		12.0	37.2			
Actuated g/C Ratio		0.42			0.28	0.89		0.13	0.41			
Clearance Time (s)		5.1			5.1			5.1	5.1			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		1371			918	1346		236	1113			
v/s Ratio Prot		c0.23			c0.20	0.17		0.01	c0.13			
v/s Ratio Perm						0.11			0.09			
v/c Ratio		0.55			0.70	0.28		0.10	0.46			
Uniform Delay, d1		19.9			29.0	0.8		34.3	19.1			
Progression Factor		0.40			0.45	1.00		1.00	1.00			
Incremental Delay, d2		1.4			2.0	0.1		0.2	0.3			
Delay (s)		9.3			14.9	0.9		34.5	19.4			
Level of Service		A			B	A		C	B			
Approach Delay (s)		9.3			9.7			19.9			0.0	
Approach LOS		A			A			B			A	

Intersection Summary		
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.60	B
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	64.0%	15.3
Analysis Period (min)	15	ICU Level of Service
		B

! Phase conflict between lane groups.
 c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 3: Sperry Ave & Rogers Rd Timing Plan: PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	315	568	267	113	474	227	278	8	117	139	0	189	
Future Volume (vph)	315	568	267	113	474	227	278	8	117	139	0	189	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (prot)	3213	3282	1583	1770	3059	1583	1770	1863	1583	1698	1362	1346	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (perm)	3213	3282	1583	1770	3059	1583	1770	1863	1583	1698	1362	1346	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	342	617	290	123	515	247	302	9	127	151	0	205	
RTOR Reduction (vph)	0	0	189	0	0	177	0	0	100	0	106	87	
Lane Group Flow (vph)	342	617	101	123	515	70	302	9	27	124	11	28	
Heavy Vehicles (%)	9%	10%	2%	2%	18%	2%	2%	2%	2%	1%	2%	14%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	pm+ov	
Protected Phases	5	2		1	6		8	8		7	7	5	
Permitted Phases			2			6			8			7	
Actuated Green, G (s)	13.1	31.2	31.2	9.4	25.5	25.5	19.2	19.2	19.2	8.7	8.7	21.8	
Effective Green, g (s)	13.1	31.2	31.2	9.4	25.5	25.5	19.2	19.2	19.2	8.7	8.7	21.8	
Actuated g/C Ratio	0.15	0.35	0.35	0.10	0.28	0.28	0.21	0.21	0.21	0.10	0.10	0.24	
Clearance Time (s)	6.5	6.5	6.5	4.5	6.5	6.5	4.5	4.5	4.5	6.0	6.0	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	467	1137	548	184	866	448	377	397	337	164	131	423	
v/s Ratio Prot	c0.11	c0.19		0.07	c0.17		c0.17	0.00		c0.07	0.01	0.01	
v/s Ratio Perm			0.06			0.04			0.02			0.01	
v/c Ratio	0.73	0.54	0.18	0.67	0.59	0.16	0.80	0.02	0.08	0.76	0.09	0.07	
Uniform Delay, d1	36.8	23.7	20.5	38.8	27.8	24.2	33.6	28.0	28.3	39.6	37.0	26.3	
Progression Factor	0.89	0.84	1.13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.0	1.6	0.6	8.9	3.0	0.7	11.6	0.0	0.1	17.9	0.3	0.1	
Delay (s)	37.6	21.6	23.7	47.7	30.8	24.9	45.2	28.0	28.4	57.5	37.3	26.3	
Level of Service	D	C	C	D	C	C	D	C	C	E	D	C	
Approach Delay (s)		26.4			31.5			40.0			40.8		
Approach LOS		C			C			D			D		
Intersection Summary													
HCM 2000 Control Delay			31.7		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)					23.5			
Intersection Capacity Utilization			58.7%		ICU Level of Service					B			
Analysis Period (min)			15										
c Critical Lane Group													

HCM 2010 Signalized Intersection Summary
4: Park Center Dr & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↔		↔↔	↑↑	↔	↔	↑	↔	↔	↔	↔
Traffic Volume (veh/h)	123	515	101	8	582	70	22	51	44	122	83	265
Future Volume (veh/h)	123	515	101	8	582	70	22	51	44	122	83	265
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		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	1583	1767	1900	1900	1827	1583	1900	1900	1900	1583	1649	1900
Adj Flow Rate, veh/h	134	560	110	9	633	76	24	55	48	133	90	288
Adj No. of Lanes	2	2	0	2	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	9	9	0	4	20	0	0	0	20	0	0
Cap, veh/h	271	1130	221	49	1131	433	214	615	522	458	112	358
Arrive On Green	0.09	0.40	0.40	0.01	0.33	0.33	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	2925	2794	547	3510	3471	1329	1021	1900	1615	1093	346	1107
Grp Volume(v), veh/h	134	336	334	9	633	76	24	55	48	133	0	378
Grp Sat Flow(s),veh/h/ln	1463	1679	1662	1755	1736	1329	1021	1900	1615	1093	0	1453
Q Serve(g_s), s	2.5	8.5	8.5	0.1	8.6	2.3	1.3	1.1	1.2	5.5	0.0	13.5
Cycle Q Clear(g_c), s	2.5	8.5	8.5	0.1	8.6	2.3	14.8	1.1	1.2	6.6	0.0	13.5
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	271	679	672	49	1131	433	214	615	522	458	0	470
V/C Ratio(X)	0.49	0.49	0.50	0.18	0.56	0.18	0.11	0.09	0.09	0.29	0.00	0.80
Avail Cap(c_a), veh/h	478	1099	1089	370	2072	793	547	1234	1049	815	0	944
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.6	12.6	12.6	27.8	15.8	13.7	24.4	13.4	13.4	15.7	0.0	17.6
Incr Delay (d2), s/veh	1.4	1.2	1.2	1.8	0.9	0.4	0.2	0.1	0.1	0.3	0.0	3.3
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	1.1	4.1	4.1	0.1	4.2	0.9	0.4	0.6	0.5	1.7	0.0	5.8
LnGrp Delay(d),s/veh	26.0	13.8	13.9	29.5	16.8	14.1	24.6	13.5	13.5	16.1	0.0	20.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	B		C
Approach Vol, veh/h		804			718			127			511	
Approach Delay, s/veh		15.9			16.6			15.6			19.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	28.7		22.9	9.8	24.2		22.9				
Change Period (Y+Rc), s	4.5	5.7		4.5	4.5	5.7		4.5				
Max Green Setting (Gmax), s	37.3	37.3		37.0	9.3	34.0		37.0				
Max Q Clear Time (g_c+1/2), s	10.5	10.5		15.5	4.5	10.6		16.8				
Green Ext Time (p_c), s	0.0	7.9		2.9	0.1	8.0		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				17.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
5: Baldwin Rd & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	502	139	11	461	186	96	278	12	235	430	119
Future Volume (veh/h)	144	502	139	11	461	186	96	278	12	235	430	119
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1856	1900	1743	1827	1900	1900	1900	1900	1881	1900	1900
Adj Flow Rate, veh/h	157	546	151	12	501	202	104	302	13	255	467	129
Adj No. of Lanes	1	2	0	1	2	1	2	1	0	2	1	1
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	3	3	9	4	0	0	0	0	1	0	0
Cap, veh/h	196	927	255	30	866	403	265	489	21	349	561	477
Arrive On Green	0.11	0.34	0.34	0.02	0.25	0.25	0.08	0.27	0.27	0.10	0.30	0.30
Sat Flow, veh/h	1792	2720	749	1660	3471	1615	3510	1808	78	3476	1900	1615
Grp Volume(v), veh/h	157	353	344	12	501	202	104	0	315	255	467	129
Grp Sat Flow(s),veh/h/ln	1792	1764	1705	1660	1736	1615	1755	0	1886	1738	1900	1615
Q Serve(g_s), s	5.9	11.3	11.4	0.5	8.7	7.3	1.9	0.0	10.0	4.9	15.7	4.2
Cycle Q Clear(g_c), s	5.9	11.3	11.4	0.5	8.7	7.3	1.9	0.0	10.0	4.9	15.7	4.2
Prop In Lane	1.00		0.44	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	196	601	581	30	866	403	265	0	510	349	561	477
V/C Ratio(X)	0.80	0.59	0.59	0.40	0.58	0.50	0.39	0.00	0.62	0.73	0.83	0.27
Avail Cap(c_a), veh/h	233	791	765	146	1410	656	308	0	744	396	800	680
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	18.6	18.6	33.2	22.5	22.0	30.1	0.0	21.9	29.9	22.5	18.5
Incr Delay (d2), s/veh	13.0	2.0	2.0	17.8	1.3	2.1	0.4	0.0	1.2	4.6	5.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.8	5.7	0.4	4.3	3.5	1.0	0.0	5.3	2.6	9.0	1.9
LnGrp Delay(d),s/veh	42.8	20.5	20.7	51.1	23.8	24.1	30.5	0.0	23.1	34.5	27.7	18.8
LnGrp LOS	D	C	C	D	C	C	C		C	C	C	B
Approach Vol, veh/h		854			715			419			851	
Approach Delay, s/veh		24.7			24.4			24.9			28.4	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	28.8	9.4	24.8	11.7	22.6	11.1	23.1				
Change Period (Y+Rc), s	4.2	5.5	* 4.2	4.6	* 4.2	5.5	* 4.2	4.6				
Max Green Setting (Gmax), s	6	30.7	* 6	28.8	* 8.9	27.8	* 7.8	27.0				
Max Q Clear Time (g_c+1), s	12.5	13.4	3.9	17.7	7.9	10.7	6.9	12.0				
Green Ext Time (p_c), s	0.0	6.7	0.0	2.5	0.0	6.4	0.1	1.7				
Intersection Summary												
HCM 2010 Ctrl Delay				25.7								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
6: American Eagle Ave & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	556	34	84	686	91	10	32	22	38	28	35
Future Volume (veh/h)	88	556	34	84	686	91	10	32	22	38	28	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1847	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	96	604	37	91	746	99	11	35	24	41	30	38
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	170	1225	75	165	1129	150	254	109	75	262	80	101
Arrive On Green	0.09	0.36	0.36	0.09	0.36	0.36	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1810	3356	205	1810	3114	413	1348	1039	713	1359	761	964
Grp Volume(v), veh/h	96	315	326	91	420	425	11	0	59	41	0	68
Grp Sat Flow(s),veh/h/ln	1810	1755	1806	1810	1754	1773	1348	0	1752	1359	0	1725
Q Serve(g_s), s	2.3	6.2	6.2	2.1	8.9	8.9	0.3	0.0	1.4	1.3	0.0	1.6
Cycle Q Clear(g_c), s	2.3	6.2	6.2	2.1	8.9	8.9	2.0	0.0	1.4	2.7	0.0	1.6
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.41	1.00		0.56
Lane Grp Cap(c), veh/h	170	641	659	165	636	643	254	0	184	262	0	181
V/C Ratio(X)	0.57	0.49	0.49	0.55	0.66	0.66	0.04	0.00	0.32	0.16	0.00	0.38
Avail Cap(c_a), veh/h	265	771	793	367	869	878	780	0	868	793	0	854
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	10.9	10.9	19.3	11.9	11.9	19.4	0.0	18.4	19.7	0.0	18.5
Incr Delay (d2), s/veh	2.9	0.8	0.8	2.9	1.7	1.7	0.1	0.0	1.0	0.3	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.1	3.2	1.2	4.6	4.7	0.1	0.0	0.7	0.5	0.0	0.8
LnGrp Delay(d),s/veh	22.2	11.8	11.7	22.2	13.6	13.5	19.5	0.0	19.4	19.9	0.0	19.8
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		737			936			70			109	
Approach Delay, s/veh		13.1			14.4			19.4			19.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	22.7		11.2	10.7	22.6		11.2				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	19.5	19.5		22.0	6.5	22.0		22.0				
Max Q Clear Time (g_c+I), s	11.5	8.2		4.7	4.3	10.9		4.0				
Green Ext Time (p_c), s	0.1	3.8		0.4	0.0	5.1		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				14.4								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
7: Ward Ave & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	355	46	275	435	135	32	118	90	166	400	62
Future Volume (veh/h)	134	355	46	275	435	135	32	118	90	166	400	62
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
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	1863	1841	1900	1881	1857	1900	1845	1881	1863	1881	1900	1900
Adj Flow Rate, veh/h	146	386	50	299	473	147	35	128	98	180	435	67
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
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	3	3	1	3	3	3	1	2	1	0	0
Cap, veh/h	184	652	84	356	767	236	218	616	518	429	622	516
Arrive On Green	0.10	0.21	0.21	0.20	0.29	0.29	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1774	3111	400	1792	2645	816	881	1881	1582	1161	1900	1577
Grp Volume(v), veh/h	146	216	220	299	314	306	35	128	98	180	435	67
Grp Sat Flow(s),veh/h/ln	1774	1749	1762	1792	1765	1696	881	1881	1582	1161	1900	1577
Q Serve(g_s), s	5.5	7.6	7.7	10.9	10.5	10.6	2.5	3.3	3.0	9.0	13.6	2.0
Cycle Q Clear(g_c), s	5.5	7.6	7.7	10.9	10.5	10.6	16.1	3.3	3.0	12.4	13.6	2.0
Prop In Lane	1.00		0.23	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	366	369	356	511	492	218	616	518	429	622	516
V/C Ratio(X)	0.79	0.59	0.60	0.84	0.61	0.62	0.16	0.21	0.19	0.42	0.70	0.13
Avail Cap(c_a), veh/h	261	462	466	658	829	797	370	939	790	628	949	788
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	24.3	24.3	26.2	20.9	20.9	27.0	16.5	16.4	21.0	20.0	16.1
Incr Delay (d2), s/veh	10.4	3.2	3.3	5.3	2.6	2.7	0.7	0.4	0.4	1.4	3.0	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	8.2	4.0	4.1	5.9	5.4	5.3	0.6	1.8	1.4	3.1	7.7	0.9
LnGrp Delay(d),s/veh	40.2	27.5	27.6	31.5	23.5	23.7	27.7	16.9	16.8	22.4	23.0	16.3
LnGrp LOS	D	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		582			919			261			682	
Approach Delay, s/veh		30.7			26.2			18.3			22.2	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.5	20.3		28.3	14.1	25.7		28.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	7.0	6.0		6.0				
Max Green Setting (Gmax), s	25.0	18.0		34.0	10.0	32.0		34.0				
Max Q Clear Time (g_c+1/2g), s	11.9	9.7		15.6	7.5	12.6		18.1				
Green Ext Time (p_c), s	0.7	2.5		6.5	0.1	6.2		2.0				
Intersection Summary												
HCM 2010 Ctrl Delay			25.3									
HCM 2010 LOS			C									

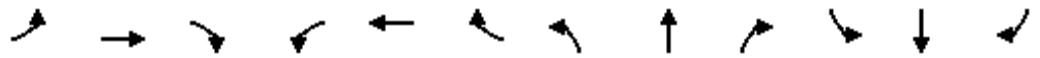
HCM 2010 Signalized Intersection Summary
8: Del Puerto Ave & Sperry Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	359	81	31	483	20	39	38	6	3	59	148
Future Volume (veh/h)	201	359	81	31	483	20	39	38	6	3	59	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1811	1900	1900	1827	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	218	390	88	34	525	22	42	41	7	3	64	161
Adj No. of Lanes	1	2	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	6	6	0	4	0	0	0	0	0	0	0
Cap, veh/h	518	1558	348	638	1018	898	247	200	26	96	95	233
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	873	2796	625	930	1827	1612	561	1021	133	8	487	1189
Grp Volume(v), veh/h	218	239	239	34	525	22	90	0	0	228	0	0
Grp Sat Flow(s),veh/h/ln	873	1721	1700	930	1827	1612	1716	0	0	1683	0	0
Q Serve(g_s), s	8.0	2.7	2.8	0.8	6.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.8	2.7	2.8	3.5	6.9	0.2	1.6	0.0	0.0	4.8	0.0	0.0
Prop In Lane	1.00		0.37	1.00		1.00	0.47		0.08	0.01		0.71
Lane Grp Cap(c), veh/h	518	959	947	638	1018	898	473	0	0	425	0	0
V/C Ratio(X)	0.42	0.25	0.25	0.05	0.52	0.02	0.19	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	632	1184	1170	760	1257	1109	1095	0	0	1142	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	4.4	4.4	5.3	5.3	3.8	13.1	0.0	0.0	14.4	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.3	0.3	0.1	0.9	0.0	0.2	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.3	1.3	0.2	3.6	0.1	0.8	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	11.1	4.7	4.7	5.4	6.2	3.8	13.3	0.0	0.0	15.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B			B		
Approach Vol, veh/h		696			581			90			228	
Approach Delay, s/veh		6.7			6.0			13.3			15.4	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.1		12.4		26.1		12.4				
Change Period (Y+Rc), s		4.6		4.9		4.6		4.9				
Max Green Setting (Gmax), s		26.5		24.0		26.5		24.0				
Max Q Clear Time (g_c+1), s		16.8		3.6		8.9		6.8				
Green Ext Time (p_c), s		4.6		0.4		6.0		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				8.1								
HCM 2010 LOS				A								

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 9: SR-33 & Sperry Ave Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	148	173	21	76	9	158	383	69	20	251	184
Future Volume (vph)	216	148	173	21	76	9	158	383	69	20	251	184
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	1662		1805	1837		1703	1792		1556	1810	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1703	1662		1805	1837		1703	1792		1556	1810	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	161	188	23	83	10	172	416	75	22	273	200
RTOR Reduction (vph)	0	64	0	0	7	0	0	8	0	0	0	134
Lane Group Flow (vph)	235	285	0	23	86	0	172	483	0	22	273	66
Heavy Vehicles (%)	6%	4%	6%	0%	2%	0%	6%	3%	7%	16%	5%	4%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	15.1	15.1		4.5	4.5		6.1	26.8		1.8	22.5	22.5
Effective Green, g (s)	15.1	15.1		4.5	4.5		6.1	26.8		1.8	22.5	22.5
Actuated g/C Ratio	0.22	0.22		0.07	0.07		0.09	0.40		0.03	0.33	0.33
Clearance Time (s)	5.1	5.1		4.6	4.6		4.0	5.8		4.0	5.8	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	379	370		119	122		153	709		41	601	516
v/s Ratio Prot	0.14	c0.17		0.01	c0.05		c0.10	c0.27		0.01	0.15	
v/s Ratio Perm												0.04
v/c Ratio	0.62	0.77		0.19	0.71		1.12	0.68		0.54	0.45	0.13
Uniform Delay, d1	23.7	24.7		29.9	31.0		30.8	16.9		32.5	17.8	15.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.1	9.6		0.8	17.1		110.0	5.2		12.8	2.5	0.5
Delay (s)	26.8	34.2		30.7	48.1		140.8	22.2		45.4	20.2	16.3
Level of Service	C	C		C	D		F	C		D	C	B
Approach Delay (s)		31.3			44.6			52.9			19.8	
Approach LOS		C			D			D			B	

Intersection Summary		
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio	0.80	
Actuated Cycle Length (s)	67.7	Sum of lost time (s) 19.5
Intersection Capacity Utilization	59.6%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		

HCM 2010 Signalized Intersection Summary
 10: SR-33 & M St/Walnut Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖↗	↖		↖	↑↑	↗	↖	↑↗	
Traffic Volume (veh/h)	12	87	57	74	83	12	61	411	135	95	484	22
Future Volume (veh/h)	12	87	57	74	83	12	61	411	135	95	484	22
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	1583	1583	1583	1583	1583	1900
Adj Flow Rate, veh/h	13	95	62	80	90	13	66	447	147	103	526	24
Adj No. of Lanes	1	1	0	2	1	0	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, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	36	166	108	394	409	59	323	612	428	149	662	30
Arrive On Green	0.02	0.16	0.16	0.11	0.26	0.26	0.08	0.20	0.20	0.10	0.23	0.23
Sat Flow, veh/h	1774	1054	688	3442	1592	230	1508	3008	1346	1508	2930	134
Grp Volume(v), veh/h	13	0	157	80	0	103	66	447	147	103	270	280
Grp Sat Flow(s),veh/h/ln	1774	0	1741	1721	0	1822	1508	1504	1346	1508	1504	1560
Q Serve(g_s), s	0.3	0.0	3.6	0.9	0.0	1.9	1.4	6.0	1.0	2.8	7.3	7.3
Cycle Q Clear(g_c), s	0.3	0.0	3.6	0.9	0.0	1.9	1.4	6.0	1.0	2.8	7.3	7.3
Prop In Lane	1.00		0.39	1.00		0.13	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	36	0	274	394	0	468	323	612	428	149	340	352
V/C Ratio(X)	0.37	0.00	0.57	0.20	0.00	0.22	0.20	0.73	0.34	0.69	0.79	0.80
Avail Cap(c_a), veh/h	248	0	353	2322	0	1353	419	1470	812	281	805	835
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	20.8	0.0	16.8	17.2	0.0	12.6	12.2	16.0	2.5	18.7	15.7	15.7
Incr Delay (d2), s/veh	2.3	0.0	0.7	0.1	0.0	0.1	0.1	0.6	0.2	2.1	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.8	0.4	0.0	1.0	0.6	2.5	0.7	1.3	3.1	3.3
LnGrp Delay(d),s/veh	23.1	0.0	17.5	17.3	0.0	12.7	12.3	16.7	2.6	20.9	17.3	17.3
LnGrp LOS	C		B	B		B	B	B	A	C	B	B
Approach Vol, veh/h		170			183			660			653	
Approach Delay, s/veh		17.9			14.7			13.1			17.8	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.1	11.0	8.2	13.6	4.9	16.2	7.3	14.6				
Change Period (Y+Rc), s	5.2	* 4.2	4.0	4.9	4.0	* 5.2	4.0	4.9				
Max Green Setting (Gmax), s	29	* 8.7	8.0	21.0	6.0	* 32	6.0	23.0				
Max Q Clear Time (g_c+1), s	12.9	5.6	4.8	8.0	2.3	3.9	3.4	9.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	0.5	0.0	0.2	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			15.6									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary
 11: SR-33 & Las Palmas Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	290	10	238	378	82	27	279	372	161	324	4
Future Volume (veh/h)	22	290	10	238	378	82	27	279	372	161	324	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1869	1900	1810	1900	1900	1900	1845	1845	1881	1810	1900
Adj Flow Rate, veh/h	24	315	11	259	411	89	29	303	404	175	352	4
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	2	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, %	5	1	1	5	0	0	0	3	3	1	5	5
Cap, veh/h	298	426	15	419	657	545	430	1014	450	791	1152	13
Arrive On Green	0.03	0.24	0.24	0.14	0.35	0.35	0.03	0.29	0.29	0.07	0.33	0.33
Sat Flow, veh/h	1723	1795	63	1723	1900	1576	1810	3505	1554	3476	3483	40
Grp Volume(v), veh/h	24	0	326	259	411	89	29	303	404	175	174	182
Grp Sat Flow(s),veh/h/ln	1723	0	1857	1723	1900	1576	1810	1752	1554	1738	1720	1802
Q Serve(g_s), s	0.7	0.0	10.7	7.0	11.9	2.6	0.7	4.4	16.5	2.2	5.0	5.0
Cycle Q Clear(g_c), s	0.7	0.0	10.7	7.0	11.9	2.6	0.7	4.4	16.5	2.2	5.0	5.0
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	298	0	441	419	657	545	430	1014	450	791	569	596
V/C Ratio(X)	0.08	0.00	0.74	0.62	0.63	0.16	0.07	0.30	0.90	0.22	0.31	0.31
Avail Cap(c_a), veh/h	396	0	811	682	1218	1011	593	1280	568	833	569	596
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	23.3	15.5	18.0	15.0	15.5	18.2	22.5	13.9	16.4	16.4
Incr Delay (d2), s/veh	0.0	0.0	0.9	0.6	0.4	0.1	0.0	0.1	13.0	0.1	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	0.3	0.0	5.5	3.3	6.2	1.1	0.4	2.2	8.7	1.1	2.4	2.5
LnGrp Delay(d),s/veh	18.3	0.0	24.2	16.0	18.4	15.0	15.5	18.3	35.5	13.9	16.5	16.5
LnGrp LOS	B		C	B	B	B	B	B	D	B	B	B
Approach Vol, veh/h		350			759			736			531	
Approach Delay, s/veh		23.8			17.2			27.6			15.7	
Approach LOS		C			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	27.4	8.8	24.0	12.9	20.3	6.1	26.7				
Change Period (Y+Rc), s	4.0	4.6	4.0	4.9	4.0	4.6	4.0	4.9				
Max Green Setting (Gmax), s	5.5	42.3	5.6	24.1	19.0	28.8	8.0	21.7				
Max Q Clear Time (g_c+I), s	12.7	13.9	4.2	18.5	9.0	12.7	2.7	7.0				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.2	0.1	0.4	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				21.1								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 12: SR-33 & Ivy Ave/Olive Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	159	159	28	120	138	121	561	13	119	846	31
Future Volume (veh/h)	48	159	159	28	120	138	121	561	13	119	846	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1583	1583	1900	1583	1583	1900
Adj Flow Rate, veh/h	52	173	173	30	130	150	132	610	14	129	920	34
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	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, %	2	2	2	2	2	2	20	20	20	20	20	20
Cap, veh/h	273	364	309	124	300	309	160	1196	27	157	1171	43
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.11	0.40	0.40	0.10	0.40	0.40
Sat Flow, veh/h	1095	1863	1583	173	1533	1583	1508	3006	69	1508	2959	109
Grp Volume(v), veh/h	52	173	173	160	0	150	132	305	319	129	468	486
Grp Sat Flow(s),veh/h/ln	1095	1863	1583	1707	0	1583	1508	1504	1571	1508	1504	1564
Q Serve(g_s), s	2.1	3.9	4.7	0.0	0.0	4.0	4.1	7.3	7.3	4.0	13.0	13.0
Cycle Q Clear(g_c), s	6.1	3.9	4.7	4.0	0.0	4.0	4.1	7.3	7.3	4.0	13.0	13.0
Prop In Lane	1.00		1.00	0.19		1.00	1.00		0.04	1.00		0.07
Lane Grp Cap(c), veh/h	273	364	309	423	0	309	160	599	625	157	595	619
V/C Ratio(X)	0.19	0.48	0.56	0.38	0.00	0.48	0.83	0.51	0.51	0.82	0.79	0.79
Avail Cap(c_a), veh/h	473	705	599	719	0	599	254	753	786	279	778	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	17.0	17.3	16.8	0.0	17.0	20.8	10.8	10.8	20.9	12.6	12.6
Incr Delay (d2), s/veh	0.3	1.0	1.6	0.6	0.0	1.2	11.5	0.7	0.6	10.2	4.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.1	2.2	1.9	0.0	1.8	2.2	3.1	3.2	2.1	6.0	6.2
LnGrp Delay(d),s/veh	20.1	17.9	18.9	17.4	0.0	18.2	32.3	11.5	11.5	31.1	16.6	16.4
LnGrp LOS	C	B	B	B		B	C	B	B	C	B	B
Approach Vol, veh/h		398			310			756			1083	
Approach Delay, s/veh		18.6			17.8			15.1			18.3	
Approach LOS		B			B			B			B	
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	24.8		14.0	9.1	24.7		14.0				
Change Period (Y+Rc), s	4.0	5.8		4.6	4.0	5.8		4.6				
Max Green Setting (Gmax), s	3.8	23.8		18.0	8.0	24.6		18.0				
Max Q Clear Time (g_c+I), s	10.0	9.3		8.1	6.1	15.0		6.0				
Green Ext Time (p_c), s	0.1	3.0		1.3	0.1	3.9		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				17.3								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 13: Park Center Dr & Keystone Pacific Pkwy

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	80	50	44	462	1	67	2	37	0	3	1
Future Volume (veh/h)	1	80	50	44	462	1	67	2	37	0	3	1
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		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1583	1827	1759	1900	1653	1900	1845	1830	1900	1900	1583	1900
Adj Flow Rate, veh/h	1	87	54	48	502	1	73	2	40	0	3	1
Adj No. of Lanes	1	2	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	20	4	8	0	15	15	3	20	20	20	20	20
Cap, veh/h	4	1191	674	95	650	1	383	8	168	0	7	2
Arrive On Green	0.00	0.34	0.34	0.05	0.39	0.39	0.11	0.11	0.11	0.00	0.01	0.01
Sat Flow, veh/h	1508	3471	1475	1810	1649	3	3408	75	1492	0	1137	379
Grp Volume(v), veh/h	1	87	54	48	0	503	73	0	42	0	0	4
Grp Sat Flow(s),veh/h/ln	1508	1736	1475	1810	0	1652	1704	0	1567	0	0	1516
Q Serve(g_s), s	0.0	0.6	0.8	1.0	0.0	9.8	0.7	0.0	0.9	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	0.6	0.8	1.0	0.0	9.8	0.7	0.0	0.9	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.95	0.00		0.25
Lane Grp Cap(c), veh/h	4	1191	674	95	0	652	383	0	176	0	0	10
V/C Ratio(X)	0.25	0.07	0.08	0.50	0.00	0.77	0.19	0.00	0.24	0.00	0.00	0.40
Avail Cap(c_a), veh/h	203	2218	1110	283	0	1091	597	0	275	0	0	245
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	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	8.2	5.7	17.1	0.0	9.8	14.9	0.0	15.0	0.0	0.0	18.3
Incr Delay (d2), s/veh	28.8	0.0	0.1	4.1	0.0	2.0	0.2	0.0	0.7	0.0	0.0	24.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.4	0.6	0.0	4.7	0.3	0.0	0.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	47.2	8.2	5.8	21.2	0.0	11.8	15.2	0.0	15.7	0.0	0.0	42.7
LnGrp LOS	D	A	A	C		B	B		B			D
Approach Vol, veh/h		142			551			115				4
Approach Delay, s/veh		7.6			12.6			15.4				42.7
Approach LOS		A			B			B				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.7	6.5	17.2		4.7	4.6	19.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		6.5	5.8	23.7		6.0	5.0	24.5				
Max Q Clear Time (g_c+1), s		2.9	3.0	2.8		2.1	2.0	11.8				
Green Ext Time (p_c), s		0.1	0.0	0.6		0.0	0.0	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay				12.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 14: Rogers Rd & Keystone Pacific Pkwy

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	52	4	29	69	68	1	49	33	55	66	29
Future Volume (veh/h)	36	52	4	29	69	68	1	49	33	55	66	29
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	1583	1863	1900	1900	1583	1583	1827	1743	1900
Adj Flow Rate, veh/h	39	57	4	32	75	74	1	53	36	60	72	32
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	20	0	0	0	20	20	4	13	13
Cap, veh/h	80	360	25	111	175	172	5	572	256	212	288	128
Arrive On Green	0.04	0.21	0.21	0.04	0.20	0.20	0.00	0.19	0.19	0.06	0.25	0.25
Sat Flow, veh/h	1774	1721	121	2925	862	851	1810	3008	1346	3375	1145	509
Grp Volume(v), veh/h	39	0	61	32	0	149	1	53	36	60	0	104
Grp Sat Flow(s),veh/h/ln	1774	0	1841	1463	0	1713	1810	1504	1346	1688	0	1653
Q Serve(g_s), s	0.8	0.0	1.0	0.4	0.0	2.7	0.0	0.5	0.8	0.6	0.0	1.8
Cycle Q Clear(g_c), s	0.8	0.0	1.0	0.4	0.0	2.7	0.0	0.5	0.8	0.6	0.0	1.8
Prop In Lane	1.00		0.07	1.00		0.50	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	80	0	385	111	0	347	5	572	256	212	0	416
V/C Ratio(X)	0.49	0.00	0.16	0.29	0.00	0.43	0.20	0.09	0.14	0.28	0.00	0.25
Avail Cap(c_a), veh/h	246	0	992	406	0	908	251	1913	856	469	0	1074
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	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	11.6	16.8	0.0	12.5	17.9	12.0	12.1	16.1	0.0	10.8
Incr Delay (d2), s/veh	4.6	0.0	0.2	1.4	0.0	0.8	18.3	0.1	0.2	0.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.5	0.2	0.0	1.4	0.0	0.2	0.3	0.3	0.0	0.8
LnGrp Delay(d),s/veh	21.4	0.0	11.8	18.3	0.0	13.4	36.2	12.1	12.4	16.8	0.0	11.1
LnGrp LOS	C		B	B		B	D	B	B	B		B
Approach Vol, veh/h		100			181			90			164	
Approach Delay, s/veh		15.6			14.2			12.5			13.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	12.0	5.4	12.4	4.0	14.2	5.6	12.2				
Change Period (Y+Rc), s	4.0	5.1	4.0	* 4.9	4.0	* 5.1	4.0	4.9				
Max Green Setting (Gmax), s	5.0	22.9	5.0	* 19	5.0	* 23	5.0	19.1				
Max Q Clear Time (g_c+1), s	12.6	2.8	2.4	3.0	2.0	3.8	2.8	4.7				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.2	0.0	0.5	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				13.9								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
 15: Rogers Rd & Zacharias Rd

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	486	47	23	205	23	13	118	20	30	228	17
Future Volume (veh/h)	26	486	47	23	205	23	13	118	20	30	228	17
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	1863	1759	1759	1759	1610	1610	1610	1638	1638	1900
Adj Flow Rate, veh/h	28	528	51	25	223	25	14	128	22	33	248	18
Adj No. of Lanes	1	2	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, %	2	2	2	8	8	8	18	18	18	16	16	16
Cap, veh/h	359	717	321	537	291	302	27	496	222	58	533	38
Arrive On Green	0.20	0.20	0.20	0.17	0.17	0.17	0.02	0.16	0.16	0.04	0.18	0.18
Sat Flow, veh/h	1774	3539	1583	3250	1759	1495	1533	3059	1369	1560	2944	212
Grp Volume(v), veh/h	28	528	51	25	223	25	14	128	22	33	130	136
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1625	1759	1495	1533	1530	1369	1560	1556	1600
Q Serve(g_s), s	0.6	6.9	1.3	0.3	6.0	0.7	0.4	1.8	0.7	1.0	3.7	3.7
Cycle Q Clear(g_c), s	0.6	6.9	1.3	0.3	6.0	0.7	0.4	1.8	0.7	1.0	3.7	3.7
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	359	717	321	537	291	302	27	496	222	58	282	290
V/C Ratio(X)	0.08	0.74	0.16	0.05	0.77	0.08	0.52	0.26	0.10	0.57	0.46	0.47
Avail Cap(c_a), veh/h	438	874	391	737	399	394	171	601	269	174	306	314
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	18.5	16.2	17.3	19.7	16.0	24.0	18.1	17.6	23.4	18.1	18.1
Incr Delay (d2), s/veh	0.1	2.6	0.2	0.0	5.9	0.1	14.3	0.3	0.2	8.7	1.2	1.2
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	0.3	3.6	0.6	0.1	3.4	0.3	0.3	0.8	0.3	0.6	1.7	1.8
LnGrp Delay(d),s/veh	16.0	21.1	16.5	17.4	25.6	16.1	38.4	18.4	17.8	32.1	19.2	19.3
LnGrp LOS	B	C	B	B	C	B	D	B	B	C	B	B
Approach Vol, veh/h		607			273			164			299	
Approach Delay, s/veh		20.4			24.0			20.0			20.7	
Approach LOS		C			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	5.8	13.8		15.8	4.9	14.7		14.0				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	9.7		12.2	5.5	9.7		11.2				
Max Q Clear Time (g_c+1), s	13.0	3.8		8.9	2.4	5.7		8.0				
Green Ext Time (p_c), s	0.0	0.3		1.1	0.0	0.5		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				21.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
16: Baldwin Rd & Zacharias Rd

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↗	↖	↗	
Traffic Volume (veh/h)	2	104	77	17	198	135	143	227	365	17	366	49
Future Volume (veh/h)	2	104	77	17	198	135	143	227	365	17	366	49
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	1759	1759	1900	1743	1743	1743	1667	1667	1900
Adj Flow Rate, veh/h	2	113	84	18	215	147	155	247	397	18	398	53
Adj No. of Lanes	1	2	0	2	2	0	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, %	2	2	2	8	8	8	9	9	9	14	14	14
Cap, veh/h	192	217	149	494	294	193	195	1027	459	35	604	80
Arrive On Green	0.11	0.11	0.11	0.15	0.15	0.15	0.12	0.31	0.31	0.02	0.21	0.21
Sat Flow, veh/h	1774	2006	1382	3250	1939	1268	1660	3312	1482	1587	2812	372
Grp Volume(v), veh/h	2	99	98	18	184	178	155	247	397	18	223	228
Grp Sat Flow(s),veh/h/ln	1774	1770	1619	1625	1671	1535	1660	1656	1482	1587	1583	1601
Q Serve(g_s), s	0.1	2.8	3.0	0.2	5.5	5.8	4.8	2.9	13.2	0.6	6.8	6.8
Cycle Q Clear(g_c), s	0.1	2.8	3.0	0.2	5.5	5.8	4.8	2.9	13.2	0.6	6.8	6.8
Prop In Lane	1.00		0.85	1.00		0.83	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	192	191	175	494	254	233	195	1027	459	35	340	344
V/C Ratio(X)	0.01	0.52	0.56	0.04	0.72	0.76	0.80	0.24	0.86	0.52	0.66	0.66
Avail Cap(c_a), veh/h	210	209	191	508	261	240	316	1181	528	166	429	433
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	20.9	22.1	22.2	19.0	21.2	21.3	22.5	13.5	17.1	25.4	18.8	18.9
Incr Delay (d2), s/veh	0.0	2.1	3.1	0.0	9.3	13.2	7.2	0.1	12.6	11.3	2.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	1.5	0.1	3.2	3.3	2.6	1.4	7.0	0.4	3.1	3.2
LnGrp Delay(d),s/veh	20.9	24.2	25.3	19.0	30.5	34.5	29.7	13.6	29.7	36.7	21.3	21.5
LnGrp LOS	C	C	C	B	C	C	C	B	C	D	C	C
Approach Vol, veh/h		199			380			799			469	
Approach Delay, s/veh		24.7			31.8			24.7			22.0	
Approach LOS		C			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	5.2	22.1		11.5	10.2	17.1		13.8				
Change Period (Y+Rc), s	4.0	5.8		5.8	4.0	5.8		5.8				
Max Green Setting (Gmax), s	5.5	18.7		6.2	10.0	14.2		8.2				
Max Q Clear Time (g_c+I), s	12.6	15.2		5.0	6.8	8.8		7.8				
Green Ext Time (p_c), s	0.0	1.0		0.1	0.1	1.1		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				25.5								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 17: SR-33 & Zacharias Rd

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	4	174	562	255	475	54		
Future Volume (veh/h)	4	174	562	255	475	54		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1881	1712	1667	1900		
Adj Flow Rate, veh/h	4	189	611	277	516	59		
Adj No. of Lanes	1	2	1	2	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	1	11	14	14		
Cap, veh/h	187	1346	677	2207	649	74		
Arrive On Green	0.11	0.11	0.38	0.68	0.23	0.23		
Sat Flow, veh/h	1774	2787	1792	3338	2949	327		
Grp Volume(v), veh/h	4	189	611	277	284	291		
Grp Sat Flow(s),veh/h/ln	1774	1393	1792	1626	1583	1609		
Q Serve(g_s), s	0.1	2.0	17.3	1.6	9.1	9.2		
Cycle Q Clear(g_c), s	0.1	2.0	17.3	1.6	9.1	9.2		
Prop In Lane	1.00	1.00	1.00			0.20		
Lane Grp Cap(c), veh/h	187	1346	677	2207	359	364		
V/C Ratio(X)	0.02	0.14	0.90	0.13	0.79	0.80		
Avail Cap(c_a), veh/h	198	1364	801	2567	424	431		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	21.5	7.7	15.8	3.0	19.6	19.6		
Incr Delay (d2), s/veh	0.0	0.0	12.2	0.0	8.5	8.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	2.1	10.8	0.7	4.8	4.9		
LnGrp Delay(d),s/veh	21.6	7.7	28.0	3.1	28.1	28.3		
LnGrp LOS	C	A	C	A	C	C		
Approach Vol, veh/h	193			888	575			
Approach Delay, s/veh	8.0			20.2	28.2			
Approach LOS	A			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.2		11.5	24.3	18.0		
Change Period (Y+Rc), s		5.8		5.8	4.0	5.8		
Max Green Setting (Gmax), s		42.4		6.0	24.0	14.4		
Max Q Clear Time (g_c+I1), s		3.6		4.0	19.3	11.2		
Green Ext Time (p_c), s		1.7		0.1	1.0	1.0		
Intersection Summary								
HCM 2010 Ctrl Delay			21.6					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
 19: SR-33 & Eucalyptus Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	65	346	503	13	315	217		
Future Volume (veh/h)	65	346	503	13	315	217		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1743	1712	1900	1667	1667		
Adj Flow Rate, veh/h	71	376	547	14	342	236		
Adj No. of Lanes	1	1	2	0	2	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	9	9	11	11	14	14		
Cap, veh/h	413	369	774	20	510	1562		
Arrive On Green	0.25	0.25	0.24	0.24	0.17	0.49		
Sat Flow, veh/h	1660	1482	3326	83	3079	3250		
Grp Volume(v), veh/h	71	376	274	287	342	236		
Grp Sat Flow(s),veh/h/ln	1660	1482	1626	1697	1540	1583		
Q Serve(g_s), s	1.5	11.2	6.9	7.0	4.7	1.8		
Cycle Q Clear(g_c), s	1.5	11.2	6.9	7.0	4.7	1.8		
Prop In Lane	1.00	1.00		0.05	1.00			
Lane Grp Cap(c), veh/h	413	369	388	405	510	1562		
V/C Ratio(X)	0.17	1.02	0.71	0.71	0.67	0.15		
Avail Cap(c_a), veh/h	413	369	585	611	1163	2618		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.3	16.9	15.7	15.7	17.6	6.2		
Incr Delay (d2), s/veh	0.2	51.9	2.4	2.3	1.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	9.8	3.4	3.5	2.1	0.8		
LnGrp Delay(d),s/veh	13.5	68.8	18.0	18.0	19.2	6.3		
LnGrp LOS	B	F	B	B	B	A		
Approach Vol, veh/h	447		561			578		
Approach Delay, s/veh	60.0		18.0			13.9		
Approach LOS	E		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.0	16.5				28.0		17.0
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8
Max Green Setting (Gmax), s	17.0	16.2				37.2		11.2
Max Q Clear Time (g_c+I), s	10.5	9.0				3.8		13.2
Green Ext Time (p_c), s	0.9	1.8				1.4		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			28.4					
HCM 2010 LOS			C					

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 20: SR-33 & Baldwin Rd

Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT		T	T	TT	
Traffic Volume (vph)	171	16	0	582	525	59
Future Volume (vph)	171	16	0	582	525	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.8	5.8	
Lane Util. Factor	0.97			1.00	0.95	
Frt	0.99			1.00	0.98	
Flt Protected	0.96			1.00	1.00	
Satd. Flow (prot)	3193			1712	3119	
Flt Permitted	0.96			1.00	1.00	
Satd. Flow (perm)	3193			1712	3119	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	186	17	0	633	571	64
RTOR Reduction (vph)	14	0	0	0	13	0
Lane Group Flow (vph)	189	0	0	633	622	0
Heavy Vehicles (%)	9%	9%	1%	11%	14%	14%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	6.1			22.6	22.6	
Effective Green, g (s)	6.1			22.6	22.6	
Actuated g/C Ratio	0.15			0.56	0.56	
Clearance Time (s)	5.8			5.8	5.8	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	483			960	1749	
v/s Ratio Prot	c0.06			c0.37	0.20	
v/s Ratio Perm						
v/c Ratio	0.39			0.66	0.36	
Uniform Delay, d1	15.4			6.2	4.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.5			1.7	0.1	
Delay (s)	15.9			7.8	5.0	
Level of Service	B			A	A	
Approach Delay (s)	15.9			7.8	5.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	15.6
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 21: Rogers Rd & SR-33

Timing Plan: PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵↵	
Traffic Volume (vph)	522	53	5	284	244	21
Future Volume (vph)	522	53	5	284	244	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8		4.0	5.8	5.8	
Lane Util. Factor	0.95		1.00	1.00	0.97	
Frt	0.99		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3207		1583	1667	2951	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	3207		1583	1667	2951	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	567	58	5	309	265	23
RTOR Reduction (vph)	17	0	0	0	17	0
Lane Group Flow (vph)	608	0	5	309	271	0
Heavy Vehicles (%)	11%	11%	14%	14%	18%	18%
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	13.5		0.9	18.4	7.7	
Effective Green, g (s)	13.5		0.9	18.4	7.7	
Actuated g/C Ratio	0.36		0.02	0.49	0.20	
Clearance Time (s)	5.8		4.0	5.8	5.8	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1148		37	813	602	
v/s Ratio Prot	c0.19		0.00	c0.19	c0.09	
v/s Ratio Perm						
v/c Ratio	0.53		0.14	0.38	0.45	
Uniform Delay, d1	9.6		18.0	6.1	13.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.4		1.7	0.3	0.5	
Delay (s)	10.0		19.7	6.4	13.7	
Level of Service	B		B	A	B	
Approach Delay (s)	10.0			6.6	13.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	37.7	Sum of lost time (s)	15.6
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
22: Sycamore Ave & Eucalyptus Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	76	481	66	0	267	22	2	40	4	44	349	19
Future Volume (veh/h)	76	481	66	0	267	22	2	40	4	44	349	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1900	1743	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	83	523	72	0	290	24	2	43	4	48	379	21
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	2	2	2
Cap, veh/h	156	643	84	0	770	64	91	512	46	127	496	26
Arrive On Green	0.48	0.48	0.48	0.00	0.48	0.48	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	130	1327	173	0	1588	131	16	1656	149	115	1604	85
Grp Volume(v), veh/h	678	0	0	0	0	314	49	0	0	448	0	0
Grp Sat Flow(s),veh/h/ln	1630	0	0	0	0	1720	1822	0	0	1804	0	0
Q Serve(g_s), s	8.8	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	4.6	0.0	0.0
Cycle Q Clear(g_c), s	15.7	0.0	0.0	0.0	0.0	5.0	0.8	0.0	0.0	9.9	0.0	0.0
Prop In Lane	0.12		0.11	0.00		0.08	0.04		0.08	0.11		0.05
Lane Grp Cap(c), veh/h	883	0	0	0	0	834	649	0	0	649	0	0
V/C Ratio(X)	0.77	0.00	0.00	0.00	0.00	0.38	0.08	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	1232	0	0	0	0	1213	921	0	0	922	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	0.0	0.0	7.1	10.7	0.0	0.0	13.8	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	0.0	0.0	0.0	2.4	0.4	0.0	0.0	5.1	0.0	0.0
LnGrp Delay(d),s/veh	11.6	0.0	0.0	0.0	0.0	7.4	10.8	0.0	0.0	15.1	0.0	0.0
LnGrp LOS	B					A	B			B		
Approach Vol, veh/h		678			314			49			448	
Approach Delay, s/veh		11.6			7.4			10.8			15.1	
Approach LOS		B			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.0		25.7		18.0		25.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.2		30.8		20.2		30.8				
Max Q Clear Time (g_c+I1), s		2.8		17.7		11.9		7.0				
Green Ext Time (p_c), s		0.1		3.4		1.6		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				11.8								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
23: Elm Ave & Eucalyptus Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↖	↖			↕	
Traffic Volume (veh/h)	42	42	515	2	4	1	74	158	74	10	173	3
Future Volume (veh/h)	42	42	515	2	4	1	74	158	74	10	173	3
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	1900	1759	1759	1900	1743	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	46	46	560	2	4	1	80	172	80	11	188	3
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	2	2	2
Cap, veh/h	483	415	681	271	442	91	600	271	126	144	372	6
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	640	911	1495	234	970	201	1187	1204	560	42	1655	26
Grp Volume(v), veh/h	92	0	560	7	0	0	80	0	252	202	0	0
Grp Sat Flow(s),veh/h/ln1551	0	1495	1405	0	0	1187	0	1764	1723	0	0	0
Q Serve(g_s), s	0.0	0.0	9.2	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	9.2	0.1	0.0	0.0	1.0	0.0	3.6	3.7	0.0	0.0
Prop In Lane	0.50		1.00	0.29		0.14	1.00		0.32	0.05		0.01
Lane Grp Cap(c), veh/h	898	0	681	804	0	0	600	0	397	522	0	0
V/C Ratio(X)	0.10	0.00	0.82	0.01	0.00	0.00	0.13	0.00	0.64	0.39	0.00	0.00
Avail Cap(c_a), veh/h	1258	0	1036	1101	0	0	818	0	721	852	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.4	0.0	6.7	4.2	0.0	0.0	8.8	0.0	9.9	9.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	3.3	0.0	0.0	0.0	0.1	0.0	1.7	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.4	0.0	4.4	0.0	0.0	0.0	0.0	0.5	0.0	1.9	1.4	0.0	0.0
LnGrp Delay(d),s/veh	4.5	0.0	10.0	4.2	0.0	0.0	8.9	0.0	11.5	10.0	0.0	0.0
LnGrp LOS	A		A	A			A		B	A		
Approach Vol, veh/h		652			7			332			202	
Approach Delay, s/veh		9.2			4.2			10.9			10.0	
Approach LOS		A			A			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.8		17.3		10.8		17.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		11.5		19.5		11.5		19.5				
Max Q Clear Time (g_c+1), s		5.6		11.2		5.7		2.1				
Green Ext Time (p_c), s		0.8		1.7		0.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			9.8									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
 24: Sycamore Ave & Las Palmas Ave

2040 Plus Project (With Zach IC) (Mitigated)
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	8	435	8	29	441	35	6	30	58	161	78	36
Future Volume (veh/h)	8	435	8	29	441	35	6	30	58	161	78	36
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	1696	1696	1900	1776	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	9	473	9	32	479	38	7	33	63	175	85	39
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	19	551	10	60	578	46	158	51	97	241	164	75
Arrive On Green	0.01	0.33	0.33	0.04	0.36	0.36	0.09	0.09	0.09	0.14	0.14	0.14
Sat Flow, veh/h	1616	1659	32	1691	1624	129	1774	574	1096	1774	1210	555
Grp Volume(v), veh/h	9	0	482	32	0	517	7	0	96	175	0	124
Grp Sat Flow(s),veh/h/ln	1616	0	1691	1691	0	1753	1774	0	1669	1774	0	1765
Q Serve(g_s), s	0.3	0.0	14.0	1.0	0.0	14.1	0.2	0.0	2.9	5.0	0.0	3.4
Cycle Q Clear(g_c), s	0.3	0.0	14.0	1.0	0.0	14.1	0.2	0.0	2.9	5.0	0.0	3.4
Prop In Lane	1.00		0.02	1.00		0.07	1.00		0.66	1.00		0.31
Lane Grp Cap(c), veh/h	19	0	561	60	0	624	158	0	148	241	0	240
V/C Ratio(X)	0.48	0.00	0.86	0.53	0.00	0.83	0.04	0.00	0.65	0.73	0.00	0.52
Avail Cap(c_a), veh/h	154	0	715	161	0	742	243	0	229	311	0	309
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	0.0	16.4	24.9	0.0	15.4	21.9	0.0	23.1	21.7	0.0	21.1
Incr Delay (d2), s/veh	17.4	0.0	8.4	7.1	0.0	6.8	0.1	0.0	4.7	6.0	0.0	1.7
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	0.2	0.0	7.7	0.6	0.0	7.9	0.1	0.0	1.5	2.8	0.0	1.8
LnGrp Delay(d),s/veh	43.1	0.0	24.8	32.0	0.0	22.2	22.0	0.0	27.8	27.7	0.0	22.8
LnGrp LOS	D		C	C		C	C		C	C		C
Approach Vol, veh/h		491			549			103			299	
Approach Delay, s/veh		25.1			22.8			27.4			25.7	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		10.5	5.9	23.2		12.9	4.6	24.5				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		7.2	5.0	22.2		9.2	5.0	22.2				
Max Q Clear Time (g_c+1), s		4.9	3.0	16.0		7.0	2.3	16.1				
Green Ext Time (p_c), s		0.1	0.0	1.4		0.3	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			24.5									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
25: Elm Ave & Las Palmas Ave

2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	472	7	29	466	30	9	12	20	336	89	43
Future Volume (veh/h)	4	472	7	29	466	30	9	12	20	336	89	43
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	1696	1696	1900	1776	1776	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	4	513	8	32	507	33	10	13	22	365	97	47
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	12	7	7	7	2	2	2	2	2	2
Cap, veh/h	9	605	9	57	646	42	166	217	300	478	101	49
Arrive On Green	0.01	0.36	0.36	0.03	0.39	0.39	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1616	1666	26	1691	1649	107	270	601	833	1059	281	136
Grp Volume(v), veh/h	4	0	521	32	0	540	45	0	0	509	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1692	1691	0	1757	1704	0	0	1476	0	0
Q Serve(g_s), s	0.2	0.0	18.2	1.2	0.0	17.4	0.0	0.0	0.0	20.5	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	18.2	1.2	0.0	17.4	1.1	0.0	0.0	21.6	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.22		0.49	0.72		0.09
Lane Grp Cap(c), veh/h	9	0	615	57	0	688	683	0	0	628	0	0
V/C Ratio(X)	0.46	0.00	0.85	0.56	0.00	0.78	0.07	0.00	0.00	0.81	0.00	0.00
Avail Cap(c_a), veh/h	125	0	1214	131	0	1261	683	0	0	628	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.9	0.0	18.8	30.6	0.0	17.2	13.5	0.0	0.0	20.0	0.0	0.0
Incr Delay (d2), s/veh	33.8	0.0	3.3	8.3	0.0	2.0	0.0	0.0	0.0	7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	9.0	0.7	0.0	8.8	0.5	0.0	0.0	10.1	0.0	0.0
LnGrp Delay(d),s/veh	65.7	0.0	22.2	38.9	0.0	19.2	13.6	0.0	0.0	27.9	0.0	0.0
LnGrp LOS	E		C	D		B	B			C		
Approach Vol, veh/h		525			572			45			509	
Approach Delay, s/veh		22.5			20.3			13.6			27.9	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.0	6.2	29.2		29.0	4.3	31.0				
Change Period (Y+Rc), s		5.8	4.0	5.8		5.8	4.0	5.8				
Max Green Setting (Gmax), s		23.2	5.0	46.2		23.2	5.0	46.2				
Max Q Clear Time (g_c+1), s		3.1	3.2	20.2		23.6	2.2	19.4				
Green Ext Time (p_c), s		0.1	0.0	3.2		0.0	0.0	3.3				
Intersection Summary												
HCM 2010 Ctrl Delay			23.2									
HCM 2010 LOS			C									

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 26: Las Palmas Ave/W Main Ave & Jennings Rd

Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	241	856	480	0	6	496
Future Volume (vph)	241	856	480	0	6	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.8	5.8		5.8	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	0.95
Frt	1.00	1.00	1.00		0.85	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1626	1712	1810		1588	1504
Flt Permitted	0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1626	1712	1810		1588	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	930	522	0	7	539
RTOR Reduction (vph)	0	0	0	0	226	141
Lane Group Flow (vph)	262	930	522	0	45	134
Heavy Vehicles (%)	11%	11%	5%	5%	2%	2%
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases						6
Actuated Green, G (s)	15.7	44.6	24.9		9.5	25.2
Effective Green, g (s)	15.7	44.6	24.9		9.5	25.2
Actuated g/C Ratio	0.24	0.68	0.38		0.14	0.38
Clearance Time (s)	4.0	5.8	5.8		5.8	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	388	1162	685		229	576
v/s Ratio Prot	0.16	c0.54	0.29		0.03	c0.06
v/s Ratio Perm						0.03
v/c Ratio	0.68	0.80	0.76		0.20	0.23
Uniform Delay, d1	22.7	7.4	17.8		24.7	13.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.6	4.0	5.0		0.4	0.2
Delay (s)	27.3	11.5	22.8		25.2	13.9
Level of Service	C	B	C		C	B
Approach Delay (s)		14.9	22.8		19.5	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay		17.9	HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio		0.76	
Actuated Cycle Length (s)		65.7	Sum of lost time (s) 15.6
Intersection Capacity Utilization		65.3%	ICU Level of Service C
Analysis Period (min)		15	
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 2040 Plus Project (With Zach IC) (Mitigated)
 27: SR-33 & New Connection (Project) Timing Plan: PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	194	709	548	302	287	302
Future Volume (vph)	194	709	548	302	287	302
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	0.97	1.00	0.95	
Frt	0.91	0.85	1.00	1.00	0.92	
Flt Protected	0.98	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1665	1504	3433	1863	3267	
Flt Permitted	0.98	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1665	1504	3433	1863	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	771	596	328	312	328
RTOR Reduction (vph)	69	322	0	0	259	0
Lane Group Flow (vph)	435	156	596	328	381	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	19.2	19.2	13.8	30.6	12.3	
Effective Green, g (s)	19.2	19.2	13.8	30.6	12.3	
Actuated g/C Ratio	0.33	0.33	0.23	0.52	0.21	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	543	491	805	969	683	
v/s Ratio Prot	c0.26		c0.17	0.18	c0.12	
v/s Ratio Perm		0.10				
v/c Ratio	0.80	0.32	0.74	0.34	0.56	
Uniform Delay, d1	18.1	14.9	20.8	8.2	20.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.3	0.4	3.7	0.2	1.0	
Delay (s)	26.3	15.3	24.5	8.4	21.8	
Level of Service	C	B	C	A	C	
Approach Delay (s)	20.9			18.8	21.8	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
28: Ward Ave & New Connection (Project)

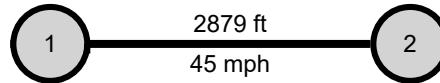
2040 Plus Project (With Zach IC) (Mitigated)
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	698	346	302	548	0	351	0	205	0	0	0
Future Volume (veh/h)	0	698	346	302	548	0	351	0	205	0	0	0
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	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	0	759	376	328	596	0	382	0	223	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	866	736	370	1350	0	595	0	274	0	2	0
Arrive On Green	0.00	0.47	0.47	0.21	0.72	0.00	0.17	0.00	0.17	0.00	0.00	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	3442	0	1583	0	1863	0
Grp Volume(v), veh/h	0	759	376	328	596	0	382	0	223	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	1721	0	1583	0	1863	0
Q Serve(g_s), s	0.0	32.3	14.6	15.8	11.4	0.0	9.1	0.0	11.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.3	14.6	15.8	11.4	0.0	9.1	0.0	11.9	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	2	866	736	370	1350	0	595	0	274	0	2	0
V/C Ratio(X)	0.00	0.88	0.51	0.89	0.44	0.00	0.64	0.00	0.81	0.00	0.00	0.00
Avail Cap(c_a), veh/h	363	1091	927	482	1350	0	728	0	335	0	381	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	21.2	16.5	33.8	4.9	0.0	33.8	0.0	35.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.8	0.5	14.8	0.2	0.0	1.4	0.0	12.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.1	6.5	9.3	5.9	0.0	4.4	0.0	6.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	28.1	17.0	48.6	5.1	0.0	35.2	0.0	47.0	0.0	0.0	0.0
LnGrp LOS		C	B	D	A		D		D			
Approach Vol, veh/h		1135			924			605			0	
Approach Delay, s/veh		24.4			20.5			39.6			0.0	
Approach LOS		C			C			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.7	22.8	45.4		0.0	0.0	68.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.6	23.9	51.5		18.0	18.0	57.4				
Max Q Clear Time (g_c+1), s		13.9	17.8	34.3		0.0	0.0	13.4				
Green Ext Time (p_c), s		1.3	0.5	6.6		0.0	0.0	4.6				
Intersection Summary												
HCM 2010 Ctrl Delay				26.5								
HCM 2010 LOS				C								

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Rogers Rd	Sperry Rd/Park Center Dr		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	45.95			45.55		
1	Running Speed, mph	42.72			43.10		
1	Through Delay, s/veh	11.28			30.55		
1	Travel Time, s	57.23			76.09		
1	Travel Speed, mph	34.30			25.80		
1	Stop Rate, stops/veh	0.62			0.75		
1	Spatial Stop Rate, stops/mi	1.13			1.38		
1	Through vol/cap Ratio	0.59			0.78		
1	Percent of Base FFS	75.79			55.37		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.31			2.35		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	4.08	D
1	Bicycle Segment LOS Score / LOS	4.88	E	5.25	F
1	Transit Segment LOS Score / LOS	6.62	F	6.59	F

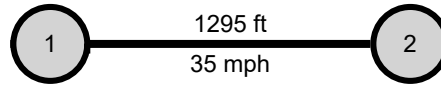
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		57.23		76.09	
Facility Travel Speed, mph		34.30		25.80	
Facility Base Free Flow Speed, mph		45.26		46.59	
Facility Percent of Base FFS		75.79		55.37	
Facility Level of Service		B		C	
Facility Auto Traveler Perception Score		2.31		2.35	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			4.08	D
Bicycle Facility LOS Score / LOS	4.88	E	5.25	F
Transit Facility LOS Score / LOS	6.62	F	6.59	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.90			26.69	
1	Running Speed, mph		32.83			33.08	
1	Through Delay, s/veh		1.63			27.95	
1	Travel Time, s		28.53			54.64	
1	Travel Speed, mph		30.95			16.16	
1	Stop Rate, stops/veh		0.35			0.83	
1	Spatial Stop Rate, stops/mi		1.42			3.37	
1	Through vol/cap Ratio		0.61			0.77	
1	Percent of Base FFS		81.45			42.39	
1	Level of Service		B			D	
1	Auto Traveler Perception Score		2.35			2.68	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.80	D	3.78	D
1	Bicycle Segment LOS Score / LOS	3.86	D	6.96	F
1	Transit Segment LOS Score / LOS	4.60	E	4.51	E

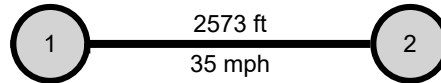
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		28.53		54.64	
Facility Travel Speed, mph		30.95		16.16	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		81.45		42.39	
Facility Level of Service		B		D	
Facility Auto Traveler Perception Score		2.35		2.68	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.80	D	3.78	D
Bicycle Facility LOS Score / LOS	3.86	D	6.96	F
Transit Facility LOS Score / LOS	4.60	E	4.51	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd	Ward Ave/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2573	2573	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	40.75			40.62		
1	Running Time, s	47.09			45.57		
1	Running Speed, mph	37.25			38.49		
1	Through Delay, s/veh	1.22			0.42		
1	Travel Time, s	48.31			46.00		
1	Travel Speed, mph	36.31			38.14		
1	Stop Rate, stops/veh	0.02			0.01		
1	Spatial Stop Rate, stops/mi	0.03			0.02		
1	Through vol/cap Ratio	0.53			0.22		
1	Percent of Base FFS	89.11			93.90		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.15			2.14		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.86	D	3.52	D
1	Transit Segment LOS Score / LOS	4.75	E	4.50	E

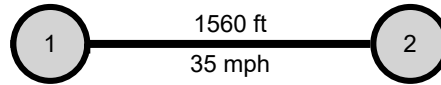
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	48.31	46.00	
Facility Travel Speed, mph	36.31	38.14			
Facility Base Free Flow Speed, mph	40.75	40.62			
Facility Percent of Base FFS	89.11	93.90			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.15	2.14			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.86	D	3.52
Transit Facility LOS Score / LOS	4.75	E	4.50

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	27.92			28.94		
1	Running Speed, mph	38.10			36.75		
1	Through Delay, s/veh	1.09			1.97		
1	Travel Time, s	29.01			30.92		
1	Travel Speed, mph	36.66			34.40		
1	Stop Rate, stops/veh	0.37			0.37		
1	Spatial Stop Rate, stops/mi	1.24			1.25		
1	Through vol/cap Ratio	0.13			0.72		
1	Percent of Base FFS	87.75			82.35		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.54			2.55		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.62	E	4.90	E
1	Transit Segment LOS Score / LOS	6.56	F	6.81	F

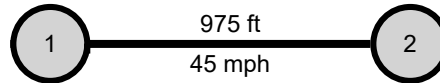
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		29.01		30.92	
Facility Travel Speed, mph		36.66		34.40	
Facility Base Free Flow Speed, mph		41.78		41.78	
Facility Percent of Base FFS		87.75		82.35	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.54		2.55	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.62	E	4.90	E	
Transit Facility LOS Score / LOS	6.56	F	6.81	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_A		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	19.42			18.94		
1	Running Speed, mph	34.23			35.10		
1	Through Delay, s/veh	1.74			0.86		
1	Travel Time, s	21.16			19.79		
1	Travel Speed, mph	31.42			33.58		
1	Stop Rate, stops/veh	0.12			0.12		
1	Spatial Stop Rate, stops/mi	0.63			0.63		
1	Through vol/cap Ratio	0.93			0.72		
1	Percent of Base FFS	68.51			73.22		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.44			2.44		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.95	D	3.76	D
1	Transit Segment LOS Score / LOS	6.96	F	6.87	F

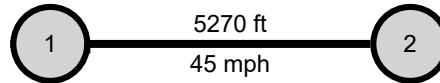
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		21.16		19.79	
Facility Travel Speed, mph		31.42		33.58	
Facility Base Free Flow Speed, mph		45.87		45.87	
Facility Percent of Base FFS		68.51		73.22	
Facility Level of Service		B		B	
Facility Auto Traveler Perception Score		2.44		2.44	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.95	D	3.76	D	
Transit Facility LOS Score / LOS	6.96	F	6.87	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave_AM.xus		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	84.52			83.15		
1	Running Speed, mph	42.51			43.21		
1	Through Delay, s/veh	50.75			39.24		
1	Travel Time, s	135.27			122.39		
1	Travel Speed, mph	26.56			29.36		
1	Stop Rate, stops/veh	0.83			0.87		
1	Spatial Stop Rate, stops/mi	0.83			0.88		
1	Through vol/cap Ratio	1.00			0.93		
1	Percent of Base FFS	58.83			65.02		
1	Level of Service	C			C		
1	Auto Traveler Perception Score	2.26			2.27		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.96	D	4.31	E
1	Transit Segment LOS Score / LOS	6.79	F	6.70	F

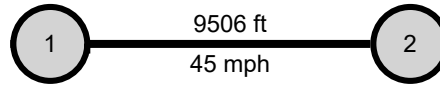
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		135.27		122.39	
Facility Travel Speed, mph		26.56		29.36	
Facility Base Free Flow Speed, mph		45.15		45.15	
Facility Percent of Base FFS		58.83		65.02	
Facility Level of Service		C		C	
Facility Auto Traveler Perception Score		2.26		2.27	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.96	D	4.31	E	
Transit Facility LOS Score / LOS	6.79	F	6.70	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	147.56			148.05		
1	Running Speed, mph	43.92			43.78		
1	Through Delay, s/veh	9.94			22.78		
1	Travel Time, s	157.51			170.83		
1	Travel Speed, mph	41.15			37.94		
1	Stop Rate, stops/veh	0.36			0.71		
1	Spatial Stop Rate, stops/mi	0.20			0.40		
1	Through vol/cap Ratio	0.50			0.96		
1	Percent of Base FFS	89.45			82.46		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.00	D	4.05	D
1	Transit Segment LOS Score / LOS	6.74	F	6.77	F

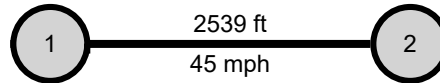
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	157.51	170.83	
Facility Travel Speed, mph	41.15	37.94			
Facility Base Free Flow Speed, mph	46.00	46.01			
Facility Percent of Base FFS	89.45	82.46			
Facility Level of Service	A	B			
Facility Auto Traveler Perception Score	2.17	2.41			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.00	D	4.05
Transit Facility LOS Score / LOS	6.74	F	6.77

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_AM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	40.10			43.63		
1	Running Speed, mph	43.17			39.68		
1	Through Delay, s/veh	9.31			30.75		
1	Travel Time, s	49.41			74.38		
1	Travel Speed, mph	35.04			23.27		
1	Stop Rate, stops/veh	0.36			0.81		
1	Spatial Stop Rate, stops/mi	0.76			1.69		
1	Through vol/cap Ratio	0.39			0.98		
1	Percent of Base FFS	76.35			53.45		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.46			2.62		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.10	D	4.80	E
1	Transit Segment LOS Score / LOS	6.60	F	0.70	A

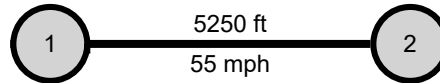
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	49.41	74.38	
Facility Travel Speed, mph	35.04	23.27			
Facility Base Free Flow Speed, mph	45.89	43.54			
Facility Percent of Base FFS	76.35	53.45			
Facility Level of Service	B	C			
Facility Auto Traveler Perception Score	2.46	2.62			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.10	D	4.80
Transit Facility LOS Score / LOS	6.60	F	0.70

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	50.03			45.33		
1	Running Time, s	73.09			82.48		
1	Running Speed, mph	48.98			43.40		
1	Through Delay, s/veh	11.56			0.00		
1	Travel Time, s	84.64			82.48		
1	Travel Speed, mph	42.29			43.40		
1	Stop Rate, stops/veh	0.56			0.00		
1	Spatial Stop Rate, stops/mi	0.56			0.00		
1	Through vol/cap Ratio	0.66			0.00		
1	Percent of Base FFS	84.53			95.74		
1	Level of Service	B			A		
1	Auto Traveler Perception Score	2.43			2.34		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	5.06	F	6.15	F
1	Transit Segment LOS Score / LOS	6.69	F	0.58	A

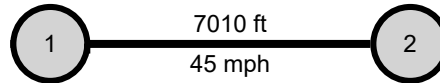
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		84.64		82.48	
Facility Travel Speed, mph		42.29		43.40	
Facility Base Free Flow Speed, mph		50.03		45.33	
Facility Percent of Base FFS		84.53		95.74	
Facility Level of Service		B		A	
Facility Auto Traveler Perception Score		2.43		2.34	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	5.06	F	6.15	F	
Transit Facility LOS Score / LOS	6.69	F	0.58	A	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	105.72			104.33		
1	Running Speed, mph	45.21			45.81		
1	Through Delay, s/veh	0.00			6.30		
1	Travel Time, s	105.72			110.63		
1	Travel Speed, mph	45.21			43.20		
1	Stop Rate, stops/veh	0.00			0.48		
1	Spatial Stop Rate, stops/mi	0.00			0.36		
1	Through vol/cap Ratio	0.00			0.11		
1	Percent of Base FFS	98.07			93.72		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.40		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.88	D	4.52	E
1	Transit Segment LOS Score / LOS	6.70	F	6.53	F

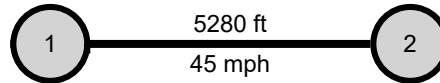
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		105.72		110.63	
Facility Travel Speed, mph		45.21		43.20	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		98.07		93.72	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.34		2.40	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.88	D	4.52	E
Transit Facility LOS Score / LOS	6.70	F	6.53	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	79.44			79.57		
1	Running Speed, mph	45.32			45.24		
1	Through Delay, s/veh	22.70			12.13		
1	Travel Time, s	102.13			91.70		
1	Travel Speed, mph	35.25			39.26		
1	Stop Rate, stops/veh	0.78			0.66		
1	Spatial Stop Rate, stops/mi	0.78			0.66		
1	Through vol/cap Ratio	0.71			0.49		
1	Percent of Base FFS	76.17			84.84		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.47			2.45		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.61	D	3.62	D
1	Transit Segment LOS Score / LOS	6.67	F	6.68	F

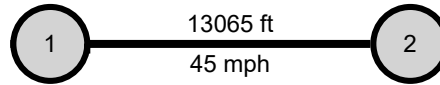
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		102.13		91.70	
Facility Travel Speed, mph		35.25		39.26	
Facility Base Free Flow Speed, mph		46.28		46.28	
Facility Percent of Base FFS		76.17		84.84	
Facility Level of Service		B		B	
Facility Auto Traveler Perception Score		2.47		2.45	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.61	D	3.62	D	
Transit Facility LOS Score / LOS	6.67	F	6.68	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			6.42	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.21			46.21		
1	Running Time, s	195.45			200.76		
1	Running Speed, mph	45.58			44.37		
1	Through Delay, s/veh	22.26			68.60		
1	Travel Time, s	217.72			269.36		
1	Travel Speed, mph	40.92			33.07		
1	Stop Rate, stops/veh	0.52			1.05		
1	Spatial Stop Rate, stops/mi	0.21			0.42		
1	Through vol/cap Ratio	0.40			1.07		
1	Percent of Base FFS	88.54			71.56		
1	Level of Service	A			F		
1	Auto Traveler Perception Score	2.38			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.81	E	4.58	E
1	Transit Segment LOS Score / LOS	6.69	F	6.85	F

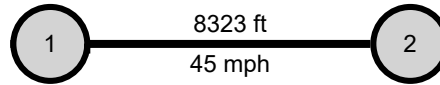
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		217.72		269.36	
Facility Travel Speed, mph		40.92		33.07	
Facility Base Free Flow Speed, mph		46.21		46.21	
Facility Percent of Base FFS		88.54		71.56	
Facility Level of Service		A		B	
Facility Auto Traveler Perception Score		2.38		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	4.81	E	4.58	E	
Transit Facility LOS Score / LOS	6.69	F	6.85	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	122.91			125.08		
1	Running Speed, mph	46.17			45.37		
1	Through Delay, s/veh	13.95			14.84		
1	Travel Time, s	136.85			139.92		
1	Travel Speed, mph	41.47			40.56		
1	Stop Rate, stops/veh	0.52			0.62		
1	Spatial Stop Rate, stops/mi	0.33			0.40		
1	Through vol/cap Ratio	0.21			0.73		
1	Percent of Base FFS	89.08			87.13		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.40			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.06	D	4.23	D
1	Transit Segment LOS Score / LOS	6.52	F	6.66	F

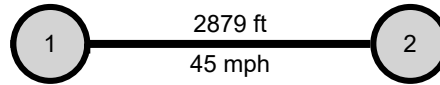
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	136.85	139.92	
Facility Travel Speed, mph	41.47	40.56			
Facility Base Free Flow Speed, mph	46.55	46.55			
Facility Percent of Base FFS	89.08	87.13			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.40	2.41			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.06	D	4.23
Transit Facility LOS Score / LOS	6.52	F	6.66

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/22/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	1. Sperry Ave, Rogers & Park C		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sperry Rd/Rogers Rd		Sperry Rd/Park Center Dr		Analysis Period	1 > 7:00
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	2879	2879	40	38	1972	1972	50	6	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.26			46.59		
1	Running Time, s	47.04			45.87		
1	Running Speed, mph	41.73			42.79		
1	Through Delay, s/veh	33.24			53.43		
1	Travel Time, s	80.27			99.30		
1	Travel Speed, mph	24.45			19.77		
1	Stop Rate, stops/veh	0.84			0.97		
1	Spatial Stop Rate, stops/mi	1.53			1.79		
1	Through vol/cap Ratio	0.90			0.92		
1	Percent of Base FFS	54.03			42.42		
1	Level of Service	C			D		
1	Auto Traveler Perception Score	2.37			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F	4.17	D
1	Bicycle Segment LOS Score / LOS	4.96	E	5.02	F
1	Transit Segment LOS Score / LOS	6.75	F	6.63	F

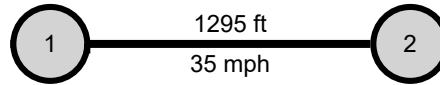
Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		80.27		99.30	
Facility Travel Speed, mph		24.45		19.77	
Facility Base Free Flow Speed, mph		45.26		46.59	
Facility Percent of Base FFS		54.03		42.42	
Facility Level of Service		C		D	
Facility Auto Traveler Perception Score		2.37		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				4.17	D
Bicycle Facility LOS Score / LOS		4.96	E	5.02	F
Transit Facility LOS Score / LOS		6.75	F	6.63	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		2.67	never	
1	Shared Lane Spillback Time, h				2.79		
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.68			27.06	
1	Running Speed, mph		33.10			32.63	
1	Through Delay, s/veh		0.76			63.47	
1	Travel Time, s		27.44			90.52	
1	Travel Speed, mph		32.18			9.75	
1	Stop Rate, stops/veh		0.08			0.99	
1	Spatial Stop Rate, stops/mi		0.31			4.05	
1	Through vol/cap Ratio		0.35			0.97	
1	Percent of Base FFS		84.69			25.59	
1	Level of Service		B			F	
1	Auto Traveler Perception Score		2.19			2.79	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.69	D	3.93	D
1	Bicycle Segment LOS Score / LOS	3.84	D	6.99	F
1	Transit Segment LOS Score / LOS	4.54	E	4.57	E

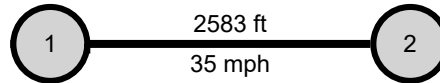
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		27.44		90.52	
Facility Travel Speed, mph		32.18		9.75	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		84.69		25.59	
Facility Level of Service		B		F	
Facility Auto Traveler Perception Score		2.19		2.79	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.69	D	3.93	D
Bicycle Facility LOS Score / LOS	3.84	D	6.99	F
Transit Facility LOS Score / LOS	4.54	E	4.57	E

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	3/25/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	3. Ward Ave, between Bartch Av		Analysis Year	2019	System Cycle Length, s	120
Intersections	Ward Ave/Elfers Rd		Ward Ave/Bartch Ave		Analysis Period	1 > 7:00
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	2583	2583	38	38	0	0	0	28	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		40.76			40.62	
1	Running Time, s		46.51			47.67	
1	Running Speed, mph		37.86			36.95	
1	Through Delay, s/veh		0.85			1.26	
1	Travel Time, s		47.36			48.93	
1	Travel Speed, mph		37.19			35.99	
1	Stop Rate, stops/veh		0.01			0.02	
1	Spatial Stop Rate, stops/mi		0.03			0.03	
1	Through vol/cap Ratio		0.41			0.56	
1	Percent of Base FFS		91.25			88.60	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.15			2.15	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.82	D	3.64	D
1	Transit Segment LOS Score / LOS	4.67	E	4.74	E

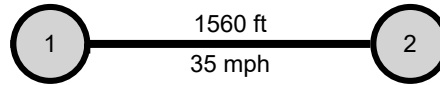
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		47.36		48.93	
Facility Travel Speed, mph		37.19		35.99	
Facility Base Free Flow Speed, mph		40.76		40.62	
Facility Percent of Base FFS		91.25		88.60	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.15		2.15	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.82	D	3.64	D	
Transit Facility LOS Score / LOS	4.67	E	4.74	E	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/11/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	4. W Marshall Rd, east of Ward Ave	Analysis Year	2019	System Cycle Length, s	120	
Intersections	W Marshall Rd/Ward Ave			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	35	35	1	1	1560	1560	30	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	41.78			41.78		
1	Running Time, s	28.35			27.99		
1	Running Speed, mph	37.51			38.01		
1	Through Delay, s/veh	1.64			1.30		
1	Travel Time, s	29.99			29.29		
1	Travel Speed, mph	35.46			36.31		
1	Stop Rate, stops/veh	0.42			0.42		
1	Spatial Stop Rate, stops/mi	1.43			1.43		
1	Through vol/cap Ratio	0.46			0.19		
1	Percent of Base FFS	84.87			86.92		
1	Level of Service	B			A		
1	Auto Traveler Perception Score	2.58			2.58		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.83	E	4.64	E
1	Transit Segment LOS Score / LOS	6.71	F	6.63	F

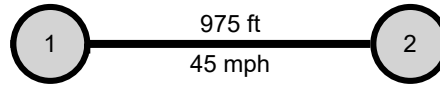
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	29.99	29.29	
Facility Travel Speed, mph	35.46	36.31			
Facility Base Free Flow Speed, mph	41.78	41.78			
Facility Percent of Base FFS	84.87	86.92			
Facility Level of Service	B	A			
Facility Auto Traveler Perception Score	2.58	2.58			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.83	E	4.64
Transit Facility LOS Score / LOS	6.71	F	6.63

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 11, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	5. SR 33, south of Bartch Ave_P		Analysis Year	2019	System Cycle Length, s	120
Intersections	SR 33/Holly Ave	SR 33/Bartch Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	975	975	40	40	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	45.87			45.87		
1	Running Time, s	18.92			19.36		
1	Running Speed, mph	35.13			34.34		
1	Through Delay, s/veh	0.93			1.67		
1	Travel Time, s	19.86			21.04		
1	Travel Speed, mph	33.48			31.60		
1	Stop Rate, stops/veh	0.13			0.13		
1	Spatial Stop Rate, stops/mi	0.69			0.70		
1	Through vol/cap Ratio	0.73			0.92		
1	Percent of Base FFS	72.99			68.90		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.45			2.46		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.77	D	3.93	D
1	Transit Segment LOS Score / LOS	6.86	F	6.95	F

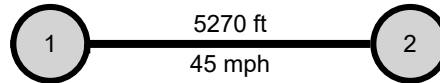
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	19.86	21.04	
Facility Travel Speed, mph	33.48	31.60			
Facility Base Free Flow Speed, mph	45.87	45.87			
Facility Percent of Base FFS	72.99	68.90			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.45	2.46			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.77	D	3.93
Transit Facility LOS Score / LOS	6.86	F	6.95

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/12/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	6. Las Palmas Ave, Sycamore &		Analysis Year	2019	System Cycle Length, s	120
Intersections	Sycamore Ave	Elm Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5270	5270	120	120	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	45.15			45.15		
1	Running Time, s	83.30			82.39		
1	Running Speed, mph	43.14			43.61		
1	Through Delay, s/veh	26.90			16.59		
1	Travel Time, s	110.20			98.99		
1	Travel Speed, mph	32.61			36.30		
1	Stop Rate, stops/veh	0.78			0.64		
1	Spatial Stop Rate, stops/mi	0.78			0.64		
1	Through vol/cap Ratio	0.90			0.82		
1	Percent of Base FFS	72.21			80.40		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.26			2.23		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.94	D	4.30	E
1	Transit Segment LOS Score / LOS	6.71	F	6.65	F

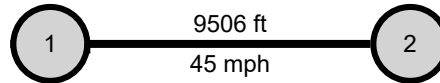
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	110.20		98.99
Facility Travel Speed, mph	32.61		36.30		
Facility Base Free Flow Speed, mph	45.15		45.15		
Facility Percent of Base FFS	72.21		80.40		
Facility Level of Service	B		B		
Facility Auto Traveler Perception Score	2.26		2.23		

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.94	D	4.30	E
Transit Facility LOS Score / LOS	6.71	F	6.65	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	7. Las Palmas Ave, wo Jennings	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Las Palmas Ave/Elm Ave	Las Palmas Ave/Jennings Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	9506	9506	115	80	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h	never	never		never	never	
1	Shared Lane Spillback Time, h	never			never		
1	Base Free-Flow Speed, mph	46.00			46.01		
1	Running Time, s	147.62			148.31		
1	Running Speed, mph	43.90			43.70		
1	Through Delay, s/veh	11.10			33.14		
1	Travel Time, s	158.73			181.45		
1	Travel Speed, mph	40.83			35.72		
1	Stop Rate, stops/veh	0.40			0.81		
1	Spatial Stop Rate, stops/mi	0.22			0.45		
1	Through vol/cap Ratio	0.60			0.98		
1	Percent of Base FFS	88.76			77.64		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.42		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.99	D	4.04	D
1	Transit Segment LOS Score / LOS	6.75	F	6.78	F

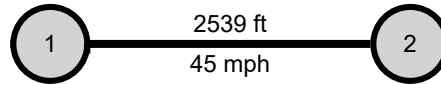
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	158.73	181.45	
Facility Travel Speed, mph	40.83	35.72			
Facility Base Free Flow Speed, mph	46.00	46.01			
Facility Percent of Base FFS	88.76	77.64			
Facility Level of Service	A	B			
Facility Auto Traveler Perception Score	2.17	2.42			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.99	D	4.04
Transit Facility LOS Score / LOS	6.75	F	6.78

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/15/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	8. SR 33, Walnut & Olive_PM.xu	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/M St/Walnut Ave	SR 33/Olive Ave-Ivy Ave		Analysis Period	1> 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	40	1	1	2539	2539	140	66	0	0	0	5	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	
1	Shared Lane Spillback Time, h				never		
1	Base Free-Flow Speed, mph	45.89			43.54		
1	Running Time, s	40.39			43.67		
1	Running Speed, mph	42.86			39.64		
1	Through Delay, s/veh	13.57			24.94		
1	Travel Time, s	53.96			68.62		
1	Travel Speed, mph	32.08			25.23		
1	Stop Rate, stops/veh	0.56			0.74		
1	Spatial Stop Rate, stops/mi	1.17			1.54		
1	Through vol/cap Ratio	0.75			0.98		
1	Percent of Base FFS	69.91			57.94		
1	Level of Service	B			C		
1	Auto Traveler Perception Score	2.53			2.59		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.20	D	4.79	E
1	Transit Segment LOS Score / LOS	6.65	F	0.70	A

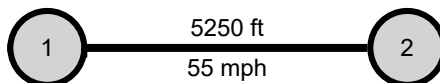
Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	53.96	68.62	
Facility Travel Speed, mph	32.08	25.23			
Facility Base Free Flow Speed, mph	45.89	43.54			
Facility Percent of Base FFS	69.91	57.94			
Facility Level of Service	B	C			
Facility Auto Traveler Perception Score	2.53	2.59			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.20	D	4.79 E
Transit Facility LOS Score / LOS	6.65	F	0.70 A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	9. Eucalyptus Ave, SR 33 & Syc	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Eucalyptus Ave	Eucalyptus Ave/Sycamore Ave		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	55	45	1	1	5250	5250	35	40	0	0	0	0	0.0	0.0

Segment Output Data

		Eastbound			Westbound		
Segment	Movement	EBL	EBT	EBR	WBL	WBT	WBR
		5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph		50.03			45.33	
1	Running Time, s		72.94			80.64	
1	Running Speed, mph		49.07			44.39	
1	Through Delay, s/veh		9.29			0.00	
1	Travel Time, s		82.24			80.64	
1	Travel Speed, mph		43.53			44.39	
1	Stop Rate, stops/veh		0.55			0.00	
1	Spatial Stop Rate, stops/mi		0.55			0.00	
1	Through vol/cap Ratio		0.27			0.00	
1	Percent of Base FFS		87.00			97.93	
1	Level of Service		A			A	
1	Auto Traveler Perception Score		2.43			2.34	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	5.13	F	6.06	F
1	Transit Segment LOS Score / LOS	6.67	F	0.40	A

Facility Output Data

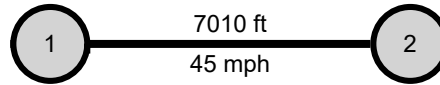
		Eastbound		Westbound	
Facility Travel Time, s		82.24		80.64	
Facility Travel Speed, mph		43.53		44.39	
Facility Base Free Flow Speed, mph		50.03		45.33	
Facility Percent of Base FFS		87.00		97.93	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.43		2.34	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	5.13	F	6.06	F
Transit Facility LOS Score / LOS	6.67	F	0.40	A

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 17, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	10. Baldwin Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Baldwin Rd/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	7010	7010	55	35	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.10			46.10		
1	Running Time, s	105.58			104.19		
1	Running Speed, mph	45.27			45.87		
1	Through Delay, s/veh	0.00			11.23		
1	Travel Time, s	105.58			115.43		
1	Travel Speed, mph	45.27			41.41		
1	Stop Rate, stops/veh	0.00			0.57		
1	Spatial Stop Rate, stops/mi	0.00			0.43		
1	Through vol/cap Ratio	0.00			0.09		
1	Percent of Base FFS	98.20			89.82		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.34			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.84	D	4.45	E
1	Transit Segment LOS Score / LOS	6.69	F	6.50	F

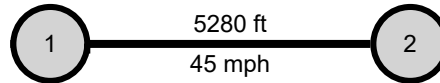
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		105.58		115.43	
Facility Travel Speed, mph		45.27		41.41	
Facility Base Free Flow Speed, mph		46.10		46.10	
Facility Percent of Base FFS		98.20		89.82	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.34		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	3.84	D	4.45	E
Transit Facility LOS Score / LOS	6.69	F	6.50	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	11. Zacharias Rd, Rogers & Bal	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	Zacharias Rd/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	1	1	5280	5280	40	75	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.28			46.28		
1	Running Time, s	80.82			79.62		
1	Running Speed, mph	44.55			45.22		
1	Through Delay, s/veh	26.59			11.97		
1	Travel Time, s	107.41			91.59		
1	Travel Speed, mph	33.52			39.31		
1	Stop Rate, stops/veh	0.80			0.57		
1	Spatial Stop Rate, stops/mi	0.80			0.57		
1	Through vol/cap Ratio	0.87			0.42		
1	Percent of Base FFS	72.43			84.94		
1	Level of Service	B			B		
1	Auto Traveler Perception Score	2.47			2.43		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.68	D	3.64	D
1	Transit Segment LOS Score / LOS	6.78	F	6.69	F

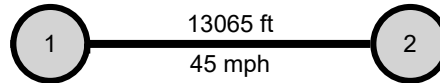
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	107.41	91.59	
Facility Travel Speed, mph	33.52	39.31			
Facility Base Free Flow Speed, mph	46.28	46.28			
Facility Percent of Base FFS	72.43	84.94			
Facility Level of Service	B	B			
Facility Auto Traveler Perception Score	2.47	2.43			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	3.68	D	3.64
Transit Facility LOS Score / LOS	6.78	F	6.69

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information															
Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay		
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	
1	45	45	1	1	13065	13065	60	50	0	0	0	0	0.0	0.0	

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.21			46.21		
1	Running Time, s	198.85			197.99		
1	Running Speed, mph	44.80			44.99		
1	Through Delay, s/veh	9.88			14.94		
1	Travel Time, s	208.74			212.93		
1	Travel Speed, mph	42.68			41.83		
1	Stop Rate, stops/veh	0.44			0.68		
1	Spatial Stop Rate, stops/mi	0.18			0.28		
1	Through vol/cap Ratio	0.60			0.69		
1	Percent of Base FFS	92.35			90.53		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.37			2.39		

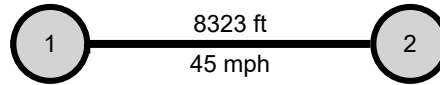
Multimodal Results (Segment)					
1	Pedestrian Segment LOS Score / LOS		F	F	
1	Bicycle Segment LOS Score / LOS	4.86	E	4.58	E
1	Transit Segment LOS Score / LOS	6.80	F	6.77	F

Facility Output Data		Eastbound		Westbound	
Facility Travel Time, s		208.74		212.93	
Facility Travel Speed, mph		42.68		41.83	
Facility Base Free Flow Speed, mph		46.21		46.21	
Facility Percent of Base FFS		92.35		90.53	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.37		2.39	

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS	4.86	E	4.58	E
Transit Facility LOS Score / LOS	6.80	F	6.77	F

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Apr 19, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak	Number of Iterations	15
File Name	13. SR 33, Zacharias & Baldwin	Analysis Year	2019	System Cycle Length, s	120	
Intersections	SR 33/Zacharias Rd	SR 33/Baldwin Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC) Conditions					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	45	45	1	1	8323	8323	65	75	0	0	0	0	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2			6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	46.55			46.55		
1	Running Time, s	122.27			125.55		
1	Running Speed, mph	46.41			45.20		
1	Through Delay, s/veh	12.93			17.14		
1	Travel Time, s	135.20			142.70		
1	Travel Speed, mph	41.97			39.77		
1	Stop Rate, stops/veh	0.51			0.63		
1	Spatial Stop Rate, stops/mi	0.33			0.40		
1	Through vol/cap Ratio	0.05			0.85		
1	Percent of Base FFS	90.17			85.43		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.40			2.41		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	3.48	C	4.24	D
1	Transit Segment LOS Score / LOS	6.41	F	6.68	F

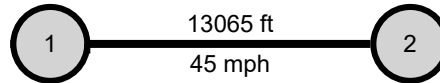
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		135.20		142.70	
Facility Travel Speed, mph		41.97		39.77	
Facility Base Free Flow Speed, mph		46.55		46.55	
Facility Percent of Base FFS		90.17		85.43	
Facility Level of Service		A		A	
Facility Auto Traveler Perception Score		2.40		2.41	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS					
Bicycle Facility LOS Score / LOS	3.48	C	4.24	D	
Transit Facility LOS Score / LOS	6.41	F	6.68	F	

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	4/17/2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	AM Peak	Number of Iterations	15
File Name	12. Rogers Rd, Zacharias & SR		Analysis Year	2019	System Cycle Length, s	120
Intersections	Zacharias Rd/Rogers Rd	SR 33/Rogers Rd		Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC)-Mitigated					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	45	45	2	1	13065	13065	60	50	0	0	0	0	0.0	0.0

Segment Output Data		Eastbound			Westbound		
		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	never
1	Shared Lane Spillback Time, h				never		never
1	Base Free-Flow Speed, mph	46.48			46.21		
1	Running Time, s	193.00			200.76		
1	Running Speed, mph	46.16			44.37		
1	Through Delay, s/veh	27.51			24.19		
1	Travel Time, s	220.51			224.95		
1	Travel Speed, mph	40.40			39.60		
1	Stop Rate, stops/veh	0.52			0.71		
1	Spatial Stop Rate, stops/mi	0.21			0.29		
1	Through vol/cap Ratio	0.22			0.89		
1	Percent of Base FFS	86.91			85.69		
1	Level of Service	A			A		
1	Auto Traveler Perception Score	2.38			2.18		

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS		F		F
1	Bicycle Segment LOS Score / LOS	4.71	E	4.58	E
1	Transit Segment LOS Score / LOS	6.64	F	6.85	F

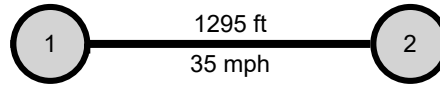
Facility Output Data		Eastbound		Westbound	
		Facility Travel Time, s	220.51	224.95	
Facility Travel Speed, mph	40.40	39.60			
Facility Base Free Flow Speed, mph	46.48	46.21			
Facility Percent of Base FFS	86.91	85.69			
Facility Level of Service	A	A			
Facility Auto Traveler Perception Score	2.38	2.18			

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS			
Bicycle Facility LOS Score / LOS	4.71	E	4.58
Transit Facility LOS Score / LOS	6.64	F	6.85

HCS 2010 Urban Street Segment Report

General Information				Streets Information		
Agency	AMG			Number of Intersections	2	
Analyst		Analysis Date	Mar 25, 2019	Number of Segments	1	
Jurisdiction	City of Patterson		Time Period	PM Peak Hour	Number of Iterations	15
File Name	2. Baldwin Rd, north of Sperry A	Analysis Year	2019	System Cycle Length, s	120	
Intersections	Sperry Rd/Baldwin Rd			Analysis Period	1 > 7:00	
Project Description	Cumulative + Project (With Zach IC)-Mitigated					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
1	35	35	1	1	1295	1295	106	66	1186	1186	100	100	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never		never	never	never
1	Shared Lane Spillback Time, h				never		never
1	Base Free-Flow Speed, mph		38.00			38.12	
1	Running Time, s		26.68			27.06	
1	Running Speed, mph		33.10			32.63	
1	Through Delay, s/veh		0.57			27.16	
1	Travel Time, s		27.25			54.21	
1	Travel Speed, mph		32.41			16.29	
1	Stop Rate, stops/veh		0.03			0.82	
1	Spatial Stop Rate, stops/mi		0.13			3.32	
1	Through vol/cap Ratio		0.34			0.86	
1	Percent of Base FFS		85.28			42.73	
1	Level of Service		A			D	
1	Auto Traveler Perception Score		2.16			2.67	

Multimodal Results (Segment)

1	Pedestrian Segment LOS Score / LOS	3.69	D	4.02	D
1	Bicycle Segment LOS Score / LOS	3.84	D	6.99	F
1	Transit Segment LOS Score / LOS	4.54	E	5.05	F

Facility Output Data

		Northbound		Southbound	
Facility Travel Time, s		27.25		54.21	
Facility Travel Speed, mph		32.41		16.29	
Facility Base Free Flow Speed, mph		38.00		38.12	
Facility Percent of Base FFS		85.28		42.73	
Facility Level of Service		A		D	
Facility Auto Traveler Perception Score		2.16		2.67	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.69	D	4.02	D
Bicycle Facility LOS Score / LOS	3.84	D	6.99	F
Transit Facility LOS Score / LOS	4.54	E	5.05	F

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
 Agency or Company:
 Date Performed: 8/23/2019
 Analysis Time Period: AM Peak Hour
 Freeway/Direction: I-5 Northbound
 From/To: North of Sperry Ave
 Jurisdiction: City of Patterson
 Analysis Year: 2040PP-ZacIC
 Description: Patterson NW Annex Segment Analysis

----- Flow Inputs and Adjustments -----

Volume, V	4766	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1268	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	2687	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2687	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	41.5	mi/h
Number of lanes, N	2	
Density, D	64.7	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040PP-ZacIC
Description: Patterson NW Annex Segment Analysis

-----Flow Inputs and Adjustments-----

Volume, V	4562	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1213	v
Trucks and buses	22	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, fp	1.00	
Flow rate, vp	2694	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2694	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	38.3	mi/h
Number of lanes, N	2	
Density, D	70.4	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
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Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040PP-ZacIC
Description: Patterson NW Annex

Flow Inputs and Adjustments

Volume, V	5220	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1388	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	3068	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

LOS and Performance Measures

Flow rate, vp	3068	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	25.5	mi/h
Number of lanes, N	2	
Density, D	120.1	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

----- Operational Analysis -----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040PP-ZacIC
Description: Patterson NW Annex

----- Flow Inputs and Adjustments -----

Volume, V	4461	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1186	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, fp	1.00	
Flow rate, vp	2622	pc/h/ln

----- Speed Inputs and Adjustments -----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	64.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	64.0	mi/h

----- LOS and Performance Measures -----

Flow rate, vp	2622	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	43.8	mi/h
Number of lanes, N	2	
Density, D	59.8	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040PP-ZacIC
Description: Patterson NW Annex Segment Analysis

-----Flow Inputs and Adjustments-----

Volume, V	4254	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1131	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, fp	1.00	
Flow rate, vp	2455	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	67.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	67.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2455	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	49.2	mi/h
Number of lanes, N	2	
Density, D	49.9	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: North of Sperry Ave
Jurisdiction: City of Patterson
Analysis Year: 2040PP-ZacIC
Description: Patterson NW Annex Segment Analysis

Flow Inputs and Adjustments

Volume, V	4535	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1206	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	2557	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	55.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	55.0	mi/h

LOS and Performance Measures

Flow rate, vp	2557	pc/h/ln
Free-flow speed, FFS	55.0	mi/h
Average passenger-car speed, S	40.9	mi/h
Number of lanes, N	2	
Density, D	62.6	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Northbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040PP-ZacIC
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	4454	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1185	v
Trucks and buses	16	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.926	
Driver population factor, fp	1.00	
Flow rate, vp	2559	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	58.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	58.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	2559	pc/h/ln
Free-flow speed, FFS	58.0	mi/h
Average passenger-car speed, S	43.3	mi/h
Number of lanes, N	2	
Density, D	59.1	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

-----Operational Analysis-----

Analyst: AMG
Agency or Company:
Date Performed: 8/23/2019
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 Southbound
From/To: Between Sperry Ave and Fink Rd
Jurisdiction: City of Patterson
Analysis Year: 2040PP-ZacIC
Description: Patterson NW Annex

-----Flow Inputs and Adjustments-----

Volume, V	5159	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1372	v
Trucks and buses	19	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.913	
Driver population factor, fp	1.00	
Flow rate, vp	3005	pc/h/ln

-----Speed Inputs and Adjustments-----

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	61.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	61.0	mi/h

-----LOS and Performance Measures-----

Flow rate, vp	3005	pc/h/ln
Free-flow speed, FFS	61.0	mi/h
Average passenger-car speed, S	24.2	mi/h
Number of lanes, N	2	
Density, D	124.4	pc/mi/ln
Level of service, LOS	F	

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